DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2007
BUDGET ESTIMATES SUBMISSION

JUSTIFICATION OF ESTIMATES
FEBRUARY 2006

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

DEPARTMENT OF THE NAVY

FY 2007 RDT&E PROGRAM

SUMMARY
($ IN THOUSANDS)

FEBRUARY 2006

Summary Recap of Budget Activities	FY 2005	FY 2006	FY 2007
System Development & Demonstration	7,417,957	8,828,742	7,915,414
Total Research, Development, Test & Eval, Navy	7,417,957	8,828,742	7,915,414

Summary Recap of FYDP Programs			
Intelligence and Communications			23,526
Research and Development	7,417,957	8,828,742	7,891,888
Total Research, Development, Test & Eval, Navy	7,417,957	8,828,742	7,915,414

DEPARTMENT OF THE NAVY
FY 2007 RDT&E PROGRAM EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy Date: FEBRUARY 2006

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2005	FY 2006	FY 2007	SEC
84	0604212N	Other Helo Development	05	182,840	79,894	86,197	U
85	0604214N	AV-8B Aircraft - Eng Dev	05	19,335	15,322	13,878	U
86	0604215N	Standards Development	05	61,313	84,225	112,257	U
87	0604216N	Multi-Mission Helicopter Upgrade Development	05	80,105	49,122	19,259	U
88	0604218N	Air/Ocean Equipment Engineering	05	4,325	4,491	5,578	U
89	0604221N	P-3 Modernization Program	05	11,838	10,637	16,139	U
90	0604230N	Warfare Support System	05	5,092	2,241	2,203	U
91	0604231N	Tactical Command System	05	63,916	64,003	74,225	U
92	0604234N	Advanced Hawkeye	05	542,447	614,231	497,842	U
93	0604245N	H-1 Upgrades	05	168,171	41,382	7,844	U
94	0604261N	Acoustic Search Sensors	05	14,418	33,569	36,764	U
95	0604262N	V-22A	05	248,163	203,278	268,461	U
96	0604264N	Air Crew Systems Development	05	20,093	13,488	12,434	U
97	0604269N	EA-18	05	346,526	393,860	372,363	U
98	0604270N	Electronic Warfare Development	05	48,517	43,276	39,842	U
99	0604273N	VHXX Executive Helo Development	05	535,694	921,840	682,597	U
100	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	78,036	168,498	1,153	U
101	0604300N	SC-21 Total Ship System Engineering	05	1,130,307	1,139,993	817,528	U
102	0604307N	Surface Combatant Combat System Engineering	05	148,939	228,932	190,059	U
103	0604311N	LPD-17 Class Systems Integration	05	8,405	11,271	5,960	U
104	0604312N	Tri-Service Standoff Attack Missile	05	26,497			U

DEPARTMENT OF THE NAVY
FY 2007 RDT&E PROGRAM EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy Date: FEBRUARY 2006

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2005	FY 2006	FY 2007	SEC
105	0604329N	Small Diameter Bomb (SDB)	05	9,513	9,816	10,021	U
106	0604366N	Standard Missile Improvements	05	110,568	148,532	186,144	U
107	0604373N	Airborne MCM	05	50,600	53,837	56,145	U
108	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05			14,792	U
109	0604503N	SSN-688 and Trident Modernization	05	96,864	106,048	94,839	U
110	0604504N	Air Control	05	14,473	11,499	4,603	U
111	0604507N	Enhanced Modular Signal Processor	05	1,061	1,063		U
112	0604512N	Shipboard Aviation Systems	05	25,512	37,784	33,392	U
113	0604518N	Combat Information Center Conversion	05	10,434	7,805	6,708	U
114	0604558N	New Design SSN	05	156,806	175,567	169,580	U
115	0604561N	SSN-21 Developments	05	2,966	2,878	3,260	U
116	0604562N	Submarine Tactical Warfare System	05	46,389	46,024	51,656	U
117	0604567N	Ship Contract Design/ Live Fire T&E	05	118,644	57,424	72,055	U
118	0604574N	Navy Tactical Computer Resources	05	8,169	6,487		U
119	0604601N	Mine Development	05	4,851	15,161	5,631	U
120	0604603N	Unguided Conventional Air-Launched Weapons	05	1,450			U
121	0604610N	Lightweight Torpedo Development	05	15,281	31,348	40,540	U
122	0604654N	Joint Service Explosive Ordnance Development	05	9,277	8,746	10,026	U
123	0604703N	Personnel, Training, Simulation, and Human Factors	05	18,361	5,150	8,754	U
124	0604721N	Battle Group Passive Horizon Extension System	05	29,677	32,779		U

DEPARTMENT OF THE NAVY
FY 2007 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: FEBRUARY 2006

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 2005	FY 2006	FY 2007	SEC
125	0604727N	Joint Standoff Weapon Systems	05	10,588	13,314	27,524	U
126	0604755N	Ship Self Defense (Detect & Control)	05	68,193	56,642	10,050	U
127	0604756N	Ship Self Defense (Engage: Hard Kill)	05	46,807	49,833	46,390	U
128	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	37,599	33,550	11,513	U
129	0604761N	Intelligence Engineering	05		4,927	4,865	U
130	0604771N	Medical Development	05	49,769	47,294	7,663	U
131	0604777N	Navigation/ID System	05	28,410	46,926	47,070	U
132	0604784N	Distributed Surveillance System	05	17,462	55,842	58,273	U
133	0604800N	Joint Strike Fighter (JSF)	05	2,083,779	2,269,197	2,030,979	U
134	0604910N	Smart Card	05	660	705		U
135	0605013M	Information Technology Development	05	8,558	25,363	13,326	U
136	0605013N	Information Technology Development	05	119,085	104,731	88,323	U
137	0605172N	Multinational Information Sharing (MNIS)	05		21,496	20,856	U
138	0605212N	CH-53X RDTE	05	281	267,860	362,672	U
139	0605500N	Multi-mission Maritime Aircraft (MMA)	05	470,893	949,561	1,131,655	U
140	0304785N	Tactical Cryptologic Systems	05			23,526	U
		System Development & Demonstration		7,417,957	8,828,742	7,915,414	
		Total Research, Development, Test & Eval, Navy		7,417,957	8,828,742	7,915,414	

Fiscal Year 2007 Budget Estimates
Budget Appendix Extract Language

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, $16,912,223,000, to remain available for obligation until September 30, 2008: *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, 2006).

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PROGRAM ASSESSMENT

PROGRAM

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Air Combat Program

The purpose of this program is to enable DoD to successfully wage war in the air by developing and producing a variety of tactical fighter and strike aircraft.

RATING

What This Rating Means

PERFORMING

Moderately Effective

- **DoD's management of the overall air combat program is currently based on the extensive system of regulations governing how individual acquisition programs are managed.** Through these regulations DoD tracks the progress of individual programs and can hold managers accountable for their programs.
- **DoD's individual programs within the overall air combat program are delivering aircraft at targeted rates, but in several cases, such as the F/A-22, at greater cost than projected.**
- **DoD is moving towards an assessment of the overall capabilities provided by its programs, rather than its traditional assessment of individual acquisition programs.** However, until the air combat program is managed as a single program (consisting of several systems) with clear long-term goals, it will be difficult to perform such a "capabilities based" assessment.

IMPROVEMENT PLAN

About Improvement Plans

We are taking the following actions to improve the performance of the program:

- Working to refine methods for assessing the effectiveness of the overall air combat program in light of the needs of the global war on terrorism.
- Reviewing the balance of individual programs within the air combat program in light of the ongoing 2005 Quadriennial Defense Review of overall strategy.

LEARN MORE

- **Details and Current Status of this program assessment.**
- How all Federal programs are assessed.
- Learn more about Air Combat Program.

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PROGRAM ASSESSMENT

PROGRAM
View Similar Programs

Defense Communications Infrastructure

The purpose of this program is to provide Information Technology networks and systems for the transmission of voice, data, and video information to locations around the world for the Department of Defense for both military and business functions.

RATING
What This Rating Means

NOT PERFORMING

Results Not Demonstrated

- **The program failed to demonstrate results because there are no enterprise or department level standards to measure program performance, such as availability, reliability, security, and capacity.**
- **Some elements of the program, such as the Defense Information Systems Network, have performance measures for availability, reliability, security and capacity, and generally meet those targets.**

IMPROVEMENT PLAN
About Improvement Plans

We are taking the following actions to improve the performance of the program:

- Developing common measurements to assess performance across the department to ensure that military and business users have a network that is universally available, secure and robust.
- Create procedures to audit performance reporting to ensure dependability.

LEARN MORE

- **Details and Current Status of this program assessment.**
- How all Federal programs are assessed.
- Learn more about Defense Communications Infrastructure.

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EXPECT FEDERAL PROGRAMS TO PERFORM WELL, AND BETTER EVERY YEAR.

PROGRAM ASSESSMENT

PROGRAM
View Similar Programs

Navy Shipbuilding

The Navy shipbuilding program buys new ships and overhauls existing ships. New ships are built at six privately-owned shipyards. Overhauls of existing ships are performed at both privately-owned and publicly-owned shipyards. The Navy currently has 280 ships in the fleet.

RATING
What This Rating Means

PERFORMING

Adequate

- **The Navy has specific cost, schedule, and performance goals for each shipbuilding program.** The Navy conducts periodic reviews of programs at major milestones of development and uses a structured reporting regime to help monitor the status of ship cost, schedule, and performance.
- **Shipbuilding program performance is often hindered by industrial base, political, and budgetary pressures.** The 2001 Quadrennial Defense Review contains a requirement for 310 ships in the Navy's fleet. However, given planned decomissionings, the Navy's five-year build plan of six to 13 ships annually will not meet the 310 ship requirement.
- **The Navy has experienced cost increases and schedule slips on some ship construction programs, although overall performance is adequate.** For example, the first Virginia Class submarine was only 89 percent complete in FY 2003 when the target was 92 percent. In addition, the cost of the first Virginia class submarine increased by 24 percent in FY 2002.

IMPROVEMENT PLAN
About Improvement Plans

We are taking the following actions to improve the performance of the program:

- Reviewing the long-term Navy fleet size requirement as part of the Department of Defense's 2005 Quadrennial Defense Review.
- Improving cost estimates for shipbuilding programs or, in some cases, fully budgeting to cost estimates.
- Ensuring that shipbuilding decisions are made with long-term fleet size and capability goals in mind.

LEARN MORE

- **Details and Current Status of this program assessment.**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604212N, OTHER HELO DEVELOPMENT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	182.840	79.894	86.197	44.853	25.576	8.033	7.947	
1109 CH/MH-53	2.305	2.429	2.514	2.596	2.652	2.717	2.783	
2415 MH-60S DEVELOPMENT	80.599	77.465	83.683	42.257	22.924	5.316	5.164	
3059 CH-53E SLEP*	99.033							
9055 SH-60 LASER AIM SCORING SYSTEM (LASS)	.903							

*Details for 3059 reported under Program Element 0605212N

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

1109 - The H-53 helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. Through FY2011, H-53 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 thatwill sustain the H-53 aircraft through the year 2025 until the transition to the H-53X is complete. These efforts, combined, will significantly improve the readiness of the H-53 fleet while reducing long term operational and supportability costs. H-53 RDT&E efforts will focus on trade studies and risk reduction measures to identify candidate survivability, safety, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life to 2025.

2415 - 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 Strike Groups (CSGs) and Expeditionary Strike Groups (ESGs) with an OAMCM capability. The Armed Helo will provide Combat Search and Rescue (CSAR), Surface Warfare (SUW) and Maritime Interdiction Operations (MIO) 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.

9055 - 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME H1109, CH/MH-53	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
H1109 CH/MH-53	2.305	2.429	2.514	2.596	2.652	2.717	2.783	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The H-53 helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. Through FY2011, H-53 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 that will sustain the H-53 aircraft through the year 2025 until the transition to the H-53X is complete. These efforts combined, will significantly improve the readiness of the H-53 fleet while reducing long term operational and supportability costs. H-53 RDT&E efforts will focus on trade studies and risk reduction measures to identify candidate survivability, safety, 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-53 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME H1109, CH/MH-53	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
H-53 Avionics	.407	.357	.339	
RDT&E Articles Qty				

Trade studies, risk reduction, design, development, model, integration and test activities for cockpit and avionics improvements for the H-53 avionics systems and associated subsystems.
Integrate software applique for cockpit and avionics improvements, to include the development of new sensors and the impact in flight control computers. Conduct Business Case Analyses to determine impact of high Operation and Support (O&S) cost drivers and address alternatives for obsolescence issues.

	FY 2005	FY 2006	FY 2007	
H-53 Survivability	.361	.168	.171	
RDT&E Articles Qty				

Trade studies, risk reduction, design, development, model, integration and test activities for H-53 survivability systems to include effectiveness of the ballistic vulnerability (armor) package.

	FY 2005	FY 2006	FY 2007	
H-53 Propulsion	1.053	1.217	1.259	
RDT&E Articles Qty				

Trade studies, risk reduction, design, development, integration and test activities for H-53 T64 engine and related systems.

	FY 2005	FY 2006	FY 2007	
Project Management Support	.484	.538	.556	
RDT&E Articles Qty				

In-house, field activities, and contractors support of Integrated Product Teams (IPTs) to allow for studies and analyses, preparation of acquisition documentation and examination of equipment and avionics for the H-53. Efforts include, but are not limited to, government development support, engineering support, program management support, systems engineering and logistics support, and travel for the H-53 program.

	FY 2005	FY 2006	FY 2007	
H-53 Airframe	.000	.149	.189	
RDT&E Articles Qty				

Trade studies, risk reduction, design, development, integration and test activities for the H-53 airframe to include, but not limited to, main rotorhead, cowlings, aircraft structure, drive train, and various dynamic components.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME H1109, CH/MH-53	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.381	2.466	2.531
Current President's Budget:	2.305	2.429	2.514
Total Adjustments	-0.076	-0.037	-0.017

Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.033	-0.026	
Congressional Increases	0.001		
Economic Assumptions		-0.011	0.012
Miscellaneous Adjustments	-0.044		-0.029
Subtotal	-0.076	-0.037	-0.017

Schedule:

Schedule slip due to emerging requirements in FY05 which forced the program office to defer the greater portion of the effort into 4th quarter FY06. In addition the complexity of the effort was greater than originally anticipated.

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME H1109, CH/MH-53	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY:

This is a non-ACAT program with no specific acquisition strategies.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA 5 | PROGRAM ELEMENT: 0604212N, OTHER HELO DEVELOPMENT | PROJECT NUMBER AND NAME: H1109, CH/MH-53

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hardware Development	VARIOUS	VARIOUS	1.097	.053	Various	.233	Various	.228	Various	Continuing	Continuing	
Ancillary Hardware Development	VARIOUS	VARIOUS	1.284			.105	Various	.067	Various	Continuing	Continuing	
Training Development	WX	NAWCAD, PATUXENT RIVER MD	.311							Continuing	Continuing	
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD		.098	1/15/2005	.461	Various	.531	Various	Continuing	Continuing	
SUBTOTAL PRODUCT DEVELOPMEN			2.692	.151		.799		.826		Continuing	Continuing	
Remarks:												
SUPPORT												
Developmental Support	WX	NAWCAD, PATUXENT RIVER MD	.406	.595	Various					Continuing	Continuing	
Software Development	VARIOUS	VARIOUS	.327			.131	Various	.172	Various	Continuing	Continuing	
Technical Data	VARIOUS	VARIOUS	.194								.194	
Studies & Analyses	VARIOUS	VARIOUS	2.754							Continuing	Continuing	
GFE	WX	NAWCAD, PATUXENT RIVER MD	.125			.360	Various	.337	Various	Continuing	Continuing	
SUBTOTAL SUPPORT			3.806	.595		.491		.509		Continuing	Continuing	
Remarks:												
Developmental Test & Evaluation	VARIOUS	VARIOUS	1.635			.601	Various	.623	Various	Continuing	Continuing	
Operational Test & Evaluation	WX	COMOPTEVFOR	.130								.130	
Live Fire Test & Evaluation (LFT&E)	WX	NAWCAD, PATUXENT RIVER MD		.197	Various					Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			1.765	.197		.601		.623		Continuing	Continuing	
Remarks:												
MANAGEMENT												
Govt Supt (Survivability - Des&Analysis)	WX	NAWCAD, PATUXENT RIVER MD	.180	1.348	Various	.129	Various	.141	Various	Continuing	Continuing	
Program Management Support	VARIOUS	VARIOUS	.380	.014	Various	.312	Various	.317	Various	Continuing	Continuing	
Travel	TO	NAVAIR HQ	.706			.097	Various	.098	Various	Continuing	Continuing	
SUBTOTAL MANAGEMENT			1.266	1.362		.538		.556		Continuing	Continuing	
Remarks:												
Total Cost			9.529	2.305		2.429		2.514		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /**					PROGRAM ELEMENT NUMBER AND NAME 0604212N OTHER HELO DEVELOPMENT												PROJECT NUMBER AND NAME 1109 CH/MH-53															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	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				
Program Milestones																																
Engineering Milestones																																
Aircraft Survivability Assmt																																
Armor Threat Assessment & Selection Test																																
Engine Armor Package																																
Cockpit Upgrade Architecture Selection																																
Baseline Vulnerability Study																																
AFCS Computer																																
Hydraulic & Electric Actuator Assessment																																
Fuel Sponson Ballistic Vulnerability Assessment																																
Obsolescence Issues/Studies																																
Survivability Analysis																																
Legacy P3I Efforts																																
T&E Milestones			△ Complete Initial Phase - Live-Fire Vulnerability Test																													

R-1 SHOPPING LIST - Item No. 84

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**				PROJECT NUMBER AND NAME 1109 CH/MH-53			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Aircraft Survivability Assessment	1Q-4Q	1Q-4Q					
Armor Threat Assessment & Selection Test	1Q-4Q	1Q-4Q					
Cockpit Upgrade Architecture Selection	1Q-4Q	1Q-4Q					
Baseline Vulnerability Study	1Q-4Q	1Q-4Q					
Hydraulic & Electric Actuator Assessment	1Q-4Q						
Fuel Sponson Ballistic Vulnerability Assessment	1Q-4Q						
Obsolescence Issues/Studies		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Survivability Analysis		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Legacy P3I Efforts		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Engine Armor	1Q-4Q	1Q-4Q					
AFCE Obsolescence Study	1Q-4Q	1Q-4Q					
Live Fire Vulnerability Test	4Q						

R-1 SHOPPING LIST - Item No. 84

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2415 MH-60S DEVELOPMENT	80.599	77.465	83.683	42.257	22.924	5.316	5.164	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

2415 - 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 Strike Groups (CSGs) and Expeditionary Strike Groups (ESGs) with an OAMCM capability. The Armed Helo will provide Combat Search and Rescue (CSAR), Surface Warfare (SUW) and Maritime Interdiction Operations (MIO) 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	40.683	36.065	38.837	
RDT&E Articles Qty				

The design, development, integration and support of the AMCM unique items into the MH-60S airframe. Design, develop, integrate and support the interoperability of Automatic Flight Control System (AFCS). 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 inititatives: Improved organizational level oil analysis technology, replacement of flight control self retaining bolts (FY04-FY05), and weight reduction (FY04-FY05). Environmental Data Recorder effort for OAMCM (FY07).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	39.916	41.400	44.846	
RDT&E Articles Qty				

Developmental efforts on the avionics architecture and systems of the MH-60S helicopter. Development of the operator 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.).

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	80.127	78.646	80.282
Current President's Budget:	80.599	77.465	83.683
Total Adjustments	0.472	-1.181	3.401
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-1.717	-0.823	
Congressional Increases	0.018		
Economic Assumptions		-0.358	0.699
Miscellaneous Adjustments	2.171		2.702
Subtotal	0.472	-1.181	3.401

Schedule:
AMCM - Initial Operating Capability (IOC) for Block 2A has been moved to 4th quarter FY07 per the program rebaseline approved by ASN(RD&A) on 4 April 05. IPR III has moved to third quarter FY06 to align with CT completion. Block 2B CDR has been rescheduled due to contract award delays resulting from program restructuring. AMCM Block 2A CT has been extended to address issues with CSTRS discovered during CT testing. As a result, DT and OT have been delayed. The schedule for 2B testing is reflecting overlap of CT/DT and DT/OT test periods for the three separate systems (OASIS, ALMDS, AMNS). OASIS, ALMDS & AMNS OT periods and RAMICS testing have been moved due to the reprogramming of the OAMCM program.

Link 16 - IPR I (completed) and Contractor Testing (CT) have been moved due to updated estimates associated with contract award. Contract award was delayed awaiting IPR I. As a result, IPR II and III and Developmental Testing (DT) and Operational Testing (OT) have been delayed. SDR, PDR and CDR have been moved one quarter each due to contract award delays.

Technical: N/A

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
017900 APN-1 MH-60S	394.790	581.745	548.559	589.298	755.239	703.163	717.270	873.681	5,163.745
AMCM (Included in numbers above)									
060510 APN-6 MH-60S	10.523	13.668	17.115	14.337	3.444	2.517	3.628		65.232

E. ACQUISITION STRATEGY:

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 Upgrades. 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 upgrades are as follows.

- Block 1 - Combat Support Helicopter
- Block 2- Airborne Mine Countermeasures
- Block 3 - Armed Helo

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604212N, OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
GFE	SS/FFP	HONEYWELL TECH SOL INC, NM	1.100	1.250	6/10/2005						2.350	2.350
Primary Hdw Development -AIRFRAME	*SS/CPIF	SIKORSKY AIRCRAFT, STRATFORD, CT	71.260	27.793	2/17/2005	23.357	12/30/2005	20.923	12/30/2006	17.354	160.687	160.687
Primary Hdw Development -AVIONICS	*SS/CPIF	LOCKHEED MARTIN CORP, OWEGO, NY	75.668	32.142	1/12/2005	30.513	12/30/2005	30.730	12/30/2006	18.856	187.909	187.909
Primary Hdw Development - CSTRS	**SS/CPFF	CONCURRENT TECHNOLOGIES CORP, PA	31.475	4.828	VARIOUS						36.303	36.303
Primary Hdw Development - CSTRS	VARIOUS	VARIOUS		1.365	VARIOUS	1.820	VARIOUS	3.397	VARIOUS	2.842	9.424	
Training Development AIRFRAME	WX/RX	NAWCAD, PAX RIVER MD & NAWC TSD	1.068	.050	11/30/2004	.250	12/30/2005	.250	12/30/2006		1.618	
Training Development AVIONICS	WX/RX	NAWCAD, PAX RIVER MD & NAWC TSD	1.068	.050	11/30/2004	.250	12/30/2005	.250	12/30/2006		1.618	
All Product Dev Cost from FY97 - FY04	VARIOUS	VARIOUS	7.739								7.739	
SUBTOTAL PRODUCT DEV			189.378	67.478		56.190		55.550		39.052	407.648	
Remarks:*PYs SS/CPAF - $3.715 FY05-07 SS/CPIF **PYs SS/CPAF, FY05 CPFF												
SUPPORT												
ILS - MSS (NON-FFRDC) AIRFRAME	VARIOUS	VARIOUS	.285	.137	VARIOUS	.125	VARIOUS	.125	VARIOUS	.325	.997	
ILS - MSS (NON-FFRDC) AVIONICS	VARIOUS	VARIOUS		.137	VARIOUS	.125	VARIOUS	.125	VARIOUS	.325	.712	
Integrated Logistics Sup AIRFRAME	VARIOUS	VARIOUS	2.613	.365	11/30/2004	1.024	11/30/2005	1.051	11/30/2006	3.086	8.137	
Integrated Logistics Sup AVIONICS	VARIOUS	VARIOUS	2.613	.365	11/30/2004	1.024	11/30/2005	1.051	11/30/2006	3.086	8.137	
All Support Cost from FY97 - FY04	VARIOUS	VARIOUS	4.172								4.172	
SUBTOTAL SUPPORT			9.682	1.004		2.297		2.351		6.821	22.155	
Remarks:												
TEST & EVALUATION												
DT&E - ETS (NON-FFRDC) AIRFRAME	VARIOUS	VARIOUS				.253	VARIOUS	.287	VARIOUS	.220	.760	
DT&E - ETS (NON-FFRDC) AVIONICS	VARIOUS	VARIOUS				.253	VARIOUS	.287	VARIOUS	.220	.760	
Dev Test & Eval AIRFRAME	WX	NAWCAD, PATUXENT RIVER MD		1.250	11/30/2004	2.598	11/30/2005	2.970	12/30/2006	3.182	9.999	
Dev Test & Eval AIRFRAME	WX	VARIOUS	7.413	.145	VARIOUS	.947	VARIOUS	.563	VARIOUS	.548	9.615	
Dev Test & Eval AVIONICS	WX	NAWCAD, PATUXENT RIVER MD		1.250	11/30/2004	2.598	11/30/2005	2.970	12/30/2006	3.182	9.999	
Dev Test & Eval AVIONICS	WX	VARIOUS	7.413	.145	VARIOUS	.947	VARIOUS	.563	VARIOUS	.548	9.615	
Live Fire Test & Eval	WX	NAWCWD, CHINA LAKE CA	.464	.172	VARIOUS						.636	
Oper Test & Eval AIRFRAME	WX	VARIOUS						2.076	VARIOUS		2.076	
Oper Test & Eval AIRFRAME	WX	COMOPTEVFOR, NORFOLK VA				.124	VARIOUS	.600	VARIOUS	1.295	2.019	
Oper Test & Eval AVIONICS	WX	COMOPTEVFOR, NORFOLK VA				.124	VARIOUS	.600	VARIOUS	1.295	2.019	
Oper Test & Eval AVIONICS	WX	VARIOUS	.776					2.076	VARIOUS		2.852	
All Test & Eval Cost from FY97 - FY04	VARIOUS	VARIOUS	2.860								2.860	
SUBTOTAL TEST & EVALUATION			18.925	2.960		7.841		12.992		10.489	53.207	
Remarks:												

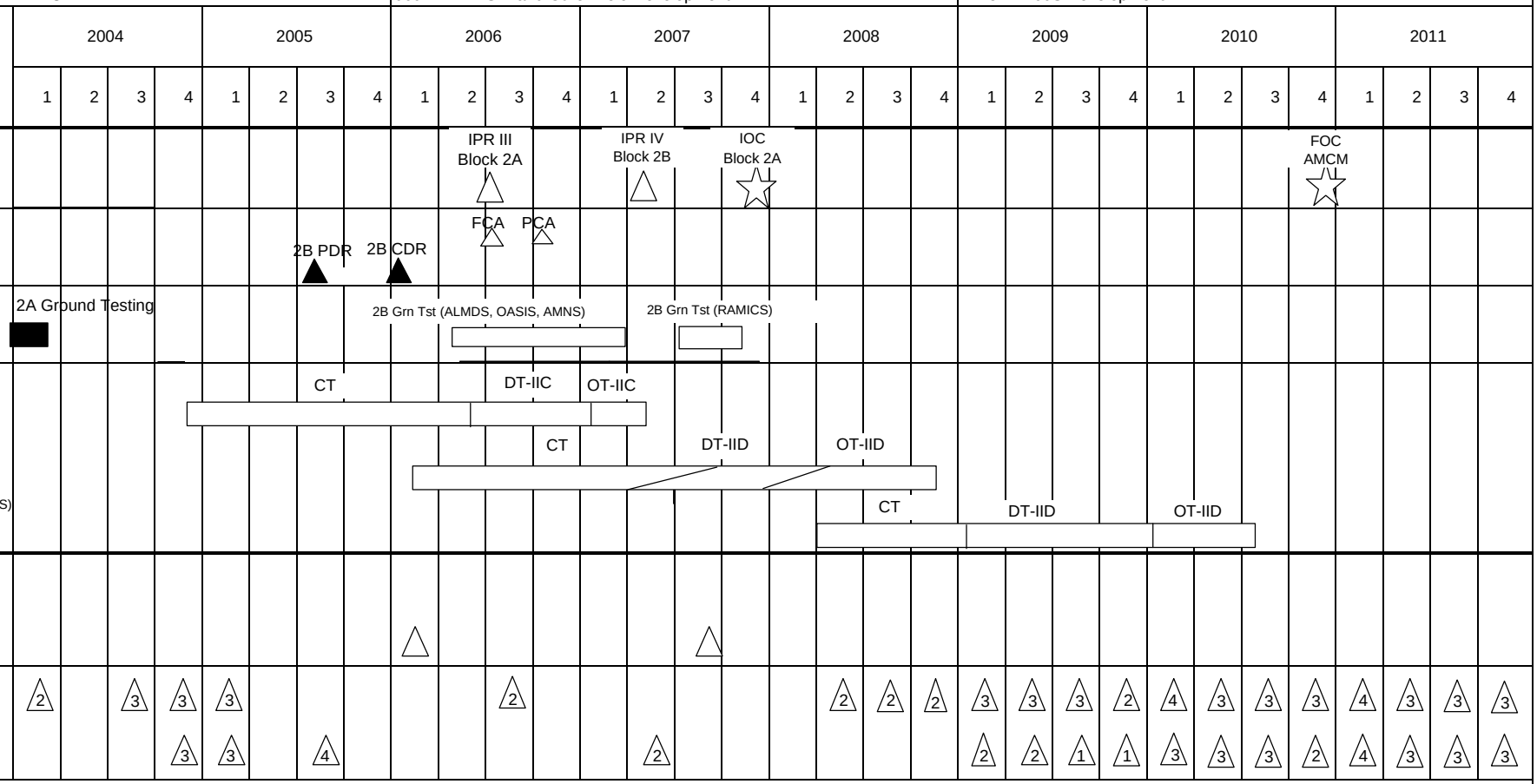
Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604212N, OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME 2415, MH-60S DEVELOPMENT						
MANAGEMENT												
Contractor Eng Sup AIRFRAME	VARIOUS	VARIOUS	3.296	.540	VARIOUS	.250	VARIOUS	.250	VARIOUS	.228	4.564	
Contractor Eng Sup AVIONICS	VARIOUS	VARIOUS	2.474	.540	VARIOUS	.250	VARIOUS	.250	VARIOUS	.228	3.742	
Government Eng Sup AIRFRAME	WX	NAWCAD, PATUXENT RIVER MD	1.936	.835	11/30/2004	1.189	11/30/2005	1.148	11/30/2006	2.464	7.572	
Government Eng Sup AIRFRAME	WX	NSWC, PANAMA CITY FL	2.091	2.315	11/30/2004	2.541	11/30/2005	3.700	11/30/2006	3.903	14.550	
Government Eng Sup AIRFRAME	WX	VARIOUS	7.126			.320	VARIOUS	.477	VARIOUS	.379	8.302	
Government Eng Sup AVIONICS	WX	NAWCAD, PATUXENT RIVER MD		.835	11/30/2004	1.189	11/30/2005	1.148	11/30/2005	2.464	5.636	
Government Eng Sup AVIONICS	WX	NSWC, PANAMA CITY FL		2.315	3/1/2005	2.541	11/30/2005	3.300	11/30/2006	3.903	12.059	
Government Eng Sup AVIONICS	WX	VARIOUS	7.126			.319	VARIOUS	.477	VARIOUS	.379	8.301	
Program Mgmt CSS AVIONICS	VARIOUS	VARIOUS		.315	VARIOUS	.364	VARIOUS	.309	VARIOUS	1.168	2.155	
Program Mgmt CSS AIRFRAME	VARIOUS	VARIOUS		.315	VARIOUS	.364	VARIOUS	.309	VARIOUS	1.168	2.155	
Program Mgmt Govt Sup AIRFRAME	WX	VARIOUS	4.742	.450	VARIOUS	.755	VARIOUS	.586	VARIOUS	1.108	7.640	
Program Mgmt Govt Sup AVIONICS	WX	VARIOUS	.838	.450	VARIOUS	.755	VARIOUS	.586	VARIOUS	1.108	3.736	
Travel AIRFRAME	TO	NAVAIR HQ, PATUXENT RIVER MD	.445	.125	VARIOUS	.150	VARIOUS	.125	VARIOUS	.400	1.245	
Travel AVIONICS	TO	NAVAIR HQ, PATUXENT RIVER MD	.445	.125	VARIOUS	.150	VARIOUS	.125	VARIOUS	.400	1.245	
All Management Cost from FY97 - FY04	VARIOUS	VARIOUS	7.897								7.897	
SUBTOTAL MANAGEMENT			38.415	9.157		11.137		12.790		19.299	90.797	
Remarks:												
Total Cost			256.400	80.599		77.465		83.683		75.661	573.807	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604212N ASW and Other Helo Development	2415 MH-60S Development



*Note: Block 2B time bar uses slant lines to depict the over lap of CT/DT and DT/OT test periods for the three separate systems (OASIS,ALMDS, AMNS).

R-1 SHOPPING LIST - Item No. 84

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604212N ASW and Other Helo Development				PROJECT NUMBER AND NAME 2415 MH-60S Development			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Block 2A								
Ground Testing	1Q							
Contractor Test	4Q	1Q-4Q	1Q-2Q					
Initial Production Delivery (Common Consoles & CSTRS)	1Q-4Q	1Q-3Q						
Functional Configuration Audit			3Q					
Physical Configuration Audit			4Q					
Developmental Testing (DT-IIC)			2Q-4Q	1Q				
Operational Testing (OT-IIC)				1Q-2Q				
Contract Award - LRIP			1Q					
Low Rate Production (LRIP) Decision /IPR III (Qty 2)			3Q					
Initial Operational Capability - Block 2A				4Q				
Low Rate Initial Production Delivery (Common Consoles & CSTRS)			3Q	2Q				
Block 2B								
Ground Testing (ALMDS, OASIS, AMNS)			2Q-4Q	1Q				
RAMICS Ground Testing				3Q-4Q				
PDR		3Q						
CDR			1Q					
Contractor Test			1Q-4Q	1Q-3Q				
Developmental Testing (DT-IID)				2Q-4Q	1Q-2Q			
Operational Testing (OT-IID)				4Q	1Q-4Q			
RAMICS Contractor Test					2Q-4Q	1Q		
RAMICS Developmental Testing (DT-IID)						1Q-4Q	1Q	
RAMICS Operational Testing (OT-IID)							1Q-3Q	
Full Rate Production (FRP) Decision / IPR IV				2Q				
Contract Award - Production				3Q				
Full Rate Production Delivery (Common Consoles & CSTRS)					2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Full Operational Capability - Block 2B							4Q	

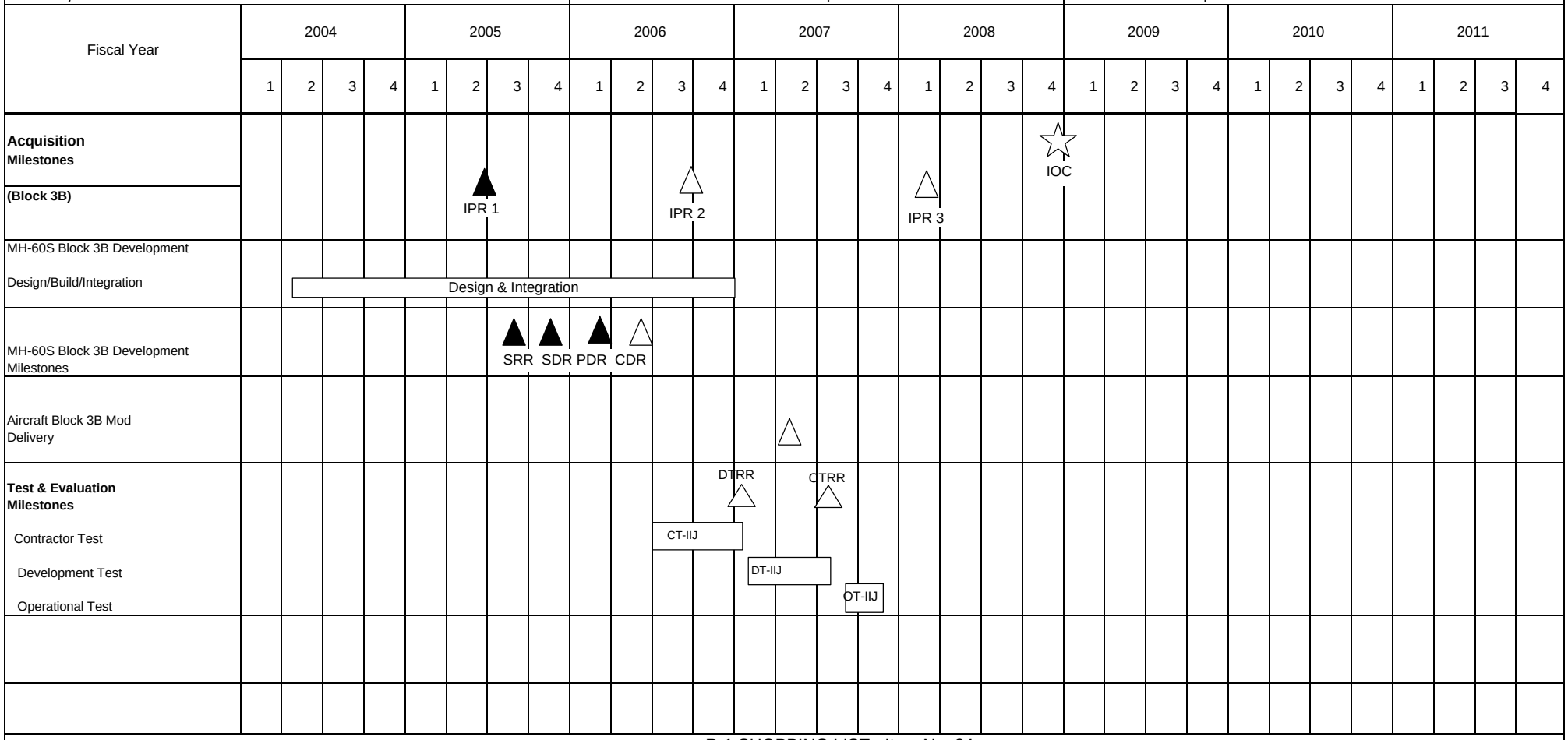
R-1 SHOPPING LIST - Item No. 84

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604212N ASW and Other Helo Development	2415 MH-60S Development



R-1 SHOPPING LIST - Item No. 84

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2005**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604212N ASW and Other Helo Development				PROJECT NUMBER AND NAME 2415 MH-60S Development			
Schedule Profile - Link 16	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
BLOCK 3B								
IPR 1		2Q						
System Design, Build, and Integration	2Q-4Q	1Q-4Q	1Q-4Q					
Systems Requirements Review (SRR)		3Q						
System Design Review (SDR)		4Q						
Preliminary Design Review (PDR)			1Q					
Software Readiness Review (SRR)		3Q						
Critical Design Review (CDR)			2Q					
Aircraft Block 3B Mod Delivery				2Q				
Contractor Test (CT-IIJ)			3Q-4Q	1Q				
IPR 2			3Q					
Developmental Test Readiness Review (DTRR)				1Q				
Developmental Testing (DT-IIJ)				1Q-3Q				
Operational Test Readiness Review (OTRR)				3Q				
Operational Testing (OT-IIJ)				3Q-4Q				
IPR 3					1Q			
IOC					4Q			

R-1 SHOPPING LIST - Item No. 84

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 9055, SH-60 LASER AIM SCORING SYSTEM (LASS)	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
H9055 SH-60 LASER AIM SCORING SYSTEM (LASS)	.903							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:The Sea Target Laser Aim Scoring System (STLASS) 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. STLASS will be adapted to existing Navy seaborne targets to support Navy H-60 armed helicopter training and readiness events requiring laser scoring capability.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 9055, SH-60 LASER AIM SCORING SYSTEM (LASS)

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.903			
RDT&E Articles Qty				

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

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.922		
Current BES / President's Budget:	0.903	0.000	0.000
Total Adjustments	-0.019	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.019		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.019	0.000	0.000

Schedule: Not Applicable

Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604212N, OTHER HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 9055, SH-60 LASER AIM SCORING SYSTEM (LASS)	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN BLI-053000 H-60 Series	30.575	12.206	33.113	23.306	24.097	23.465	17.012	100.173	263.947

E. ACQUISITION STRATEGY: FY05 RDT&E funding provided for Laser Aim Scoring System. 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.

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604214N, AV-8B AIRCRAFT - ENG DEV		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	19.335	15.322	13.878	12.643	16.451	12.407	12.103	
0652 AV-8B	18.373	15.322	13.878	12.643	16.451	12.407	12.103	
9546 LITENING POD DOWNLINK DEVELOPMENT	.962							

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

The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Escape System, Joint Mission Planning System (JMPS), Block upgrade H6.0 to various Mission Systems such as Tactical Aircraft Moving Map Capability (TAMMAC), communications system, navigation equipment, and Weapons carriage expansion, and lastly countermeasures and Aircraft Handling/Readiness Management Plan (RMP). 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 Endurance Tests (ASMET) to derive engineering improvements to the engine. The Escape System qualifies an improved ejection seat to reduce the risk of injury to aircrew. The JMPS/AVJMPS 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 replaced 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. PMA-257's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: OSCAR, H2.0, H4.0, H6.0, H8.0 and follow-on systems. TAMMAC is planned for incorporation into Block H4.0. H6.0 will include upgrades to the communications system driven by Netcentric warfare operational requirements, and weapon system expansion. H8.0 provides the follow-on step toward an integrated air picture within the Battle Space Network via MIDS/RS-Link-16 particiption within the Global Information Grid (GIG). The Litening Pod Analysis of Alternatives (AOA), $4.2M congressionally funded project, is for the next generation AV-8B Litening Intelligence, Surveillance, and Reconnaissance (ISR) pod with video link capability to Forward Air Controllers and other ground recipients in support of real time digital Close Air Support missions. The scope of this AOA includes an analysis and demonstration of available systems that can be readily integrated into the existing Litening targeting pods in fleet AV-8B, F/A-18, and Forward Air Controller (FAC) ground station hardware currently employed and or in development for all US Armed Forces with the specific goals of greater inteoperability and commonality of aircraft and ground based hardware. The RMP provides for the requirements analyses, technical planning, design, development, test and flight clearance of solutions for systems safety, reliability, supportability, obsolescence or other material or equipment conditions affecting AV-8B weapons system mission readiness. Fast Tactical Imagery/Compact Remote Tactical Imagery Relay (FTI/CRTIR), $1M congressionally funded project, will allow the AV-8B to capture still images from the Litening Pod and other onboard sensors and transmit them between aircraft computers and ground stations.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604214N, AV-8B AIRCRAFT - ENG DEV**	PROJECT NUMBER AND NAME 0652/9546 AV-8B	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	19.335*	15.322	13.878	12.643	16.451	12.407	12.103	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Escape System, Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft Handling/Readiness Management Plan (RMP). The ELM is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and Gas Turbine Starter (GTS). PMA-257 will accomplish this mission by the Component Improvement Program and conduct Engineering Project Description investigations and performing a series of planned Accelerated Simulated Mission Endurance Tests (ASMET) to derive engineering improvements to the engine. The Escape System qualifies an improved ejection seat to reduce the risk of injury to aircrew. The JMPS/AVJMPS is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system and TAMMAC functionality in H4.0 block development. H6.0 includes weapons carraige expansion efforts and provides the first step toward Battle Space Networking interoperability within the Netcentric OP-area. PMA-257 is working closely with PMA-209 common avionics and the Allies (Spain, Italy and the UK) on this effort. A/C Handling and performance is all engineering activities for development and design to support aircraft safety flight clearance and concept exploration for resolution of emergent service life and readiness issues.

*Total program includes a Congressional Add (Project Unit 9546) of $1M which was reduced by $17K for congressional undistributed reductions and execution reductions of $21K resulting in a net $962K for the AOA. Project Unit 0652 includes a Congressinal Add of $4.2 for the AOA for the next generation AV-8B Litening Intelligence, Surveillance, and Reconnaissance (ISR) pod with video link capability to Forward Air Controllers and other ground recipients in support of real time digital Close Air Support missions. Additional Congressional funding of $1M is to support FTI/CRTIR which will allow the AV-8B to capture still image from the Litening Pod and other onbaord sensors and transmit them between aircraft computers and ground stations.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604214N, AV-8B AIRCRAFT - ENG DEV**	PROJECT NUMBER AND NAME 0652/9546 AV-8B	

	FY 2005	FY 2006	FY 2007	
H4.0/H6.0/TACTICAL MOVING MAP CAPABILITY(TAMMAC)	13.535	5.167	3.256	
RDT&E Articles Qty				

H4.0 Block Upgrade Development including JMPS/AVJMPS improvements and integration of TAMMAC. H6.0 Block Upgrade is part of the Evolutionary Acquisition approach providing new aircraft capabilites following the H4.0 block upgrade. H6.0 provides the first step toward Battle Space Networking by upgrading the communication system for interoperability within the Netcentric OP-area. Additionally, the program provides weapons carriage expansion by design, development, integration and testing of additional precison guided and linked programmable weapon capabilities, digital close air support improvements, and video and data link improvements. H8.0 capabilities will follow H6.0 block upgrade.
Litening Downlink AOA will perform the concept exploration, demonstration, and limited fielding of a follow-on AV8B Litening targeting POD. The scope of the AOA includes review/determination of methods to deliver real-time video and data link communications with AV-8B's targeting pods, other aircraft based systems, GIG and associated FAC ground stations.
FTI/CRTIR will allow the AV-8B to capture still images from the Litening Pod and other onboard sensors and transmit them between aircraft computers and ground stations. This funding will provide for the development, demonstration and evaluation of the CRTIR system on the AV8B aircraft. Flight Station Clearance efforts for flight qualification testing to carry LASER guided bombs and other weapons expansion initaitives such as carriage of targeting pod on station 4 are ongoing.

	FY 2005	FY 2006	FY 2007	
ENGINE LIFE MANAGEMENT PLAN /ASMET	5.513	8.233	4.435	
RDT&E Articles Qty				

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-B engine and formalize Engine design development efforts based off of ASMET III and incorporate into the engine.

	FY 2005	FY 2006	FY 2007	
AIRCRAFT HANDLING/READINESS MANAGE PLAN	.287	1.922	6.187	
RDT&E Articles Qty				

Conduct study of AV-8B Obsolescence (Laser Maverick & other) issues & continue aircraft handling and performance investigations to improve safety and increase operational performance. Address readiness improvements and correction of deficiencies/issues including obsolescence, structural fatigue, parachute assemblies and trajectory divergence. Obsolescence solutions will be designed and developed for the avionics and other systems componets including the display computer.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604214N, AV-8B AIRCRAFT - ENG DEV**	0652/9546 AV-8B

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	13.140	15.556	13.949
Current BES / President's Budget:	19.335	15.322	13.878
Total Adjustments	6.195	-0.234	-0.071
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.362	-0.163	
Congressional Increases	0.003		
Economic Assumptions		-0.071	0.140
Miscellaneous Adjustments	6.560		-0.211
Subtotal	6.201	-0.234	-0.071

Schedule: JMPS/AVJMPS OTRR, OT & IOC schedule moved to the right 1 QTR due to schedule slip in the JMPS build 5. The H4.0 development schedule had a 2-3 QTR impact due to OSCAR and H2.0 technical issues. Schedule updated to reflect planned ELMP contract award. The display computer schedule has moved to the left. The H6.0 additions were driven by ongoing collaborative efforts of PMA-257 Allies (Spain, Italy, and UK) and PMA-209 Common Avionics to initiate design and integration efforts of the H6.0 communication enhancement capabilities. H8.0 additions are driven by pending efforts/tasking evaluating Link-16 via the MIDS/RS-LINK system with SPAWAR and PMA-209 Common Avionics.

Technical:

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN BLI 051400, AV-8B Series Modifications	33.854	35.670	20.506	17.967	25.191	15.915	15.769	86.812	251.684
RDTE PU 0572 Joint Services Standard Services/Navy Avion	55.946	79.180	110.318	97.693	46.394	33.683	29.753		452.967

E. ACQUISITION STRATEGY:All efforts under Aircraft Handling/RMP provide investigations and analysis of testing and flight clearance authorization necessary to assess overall system capability and integration o projects. 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. PMA-257's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: OSCAR, H2.0, H4.0, H6.0, H8.0 and following systems. The development and integration of JMPS/AVJMPS occured concurrently with H2.0. Additional improvements are included in H.40 TAMMAC is planned for incorporation into Block H4.0. H6.0 provides weapons carria expansion efforts and the first step toward Battle Space Networking interoperability within the Netcentric OP-area. H8.0 provides the follow-on step toward an integrated air picture within the Battle Space Network MIDS/RS-Link-16 particiption within the GIG. PMA-257 is working closely with the Allies (Spain, Italy, UK) and PMA-209 Common Avionics on this effort for H6.0 and H8.0.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604214N, AV-8B AIRCRAFT - ENG DEV				PROJECT NUMBER AND NAME 0652/9546 AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	VARIOUS	MCDONNELL DOUGLAS, SAINT LOUIS, MO	10.504					1.313	VARIOUS	24.104	35.921	35.921
Primary Hdw Development	VARIOUS	VARIOUS	13.561	3.562	VARIOUS	7.022	VARIOUS	2.215	Mar-07	19.508	45.868	45.868
Primary Hdw Dev-Display Computer	C-CPFF	MCDONNELL DOUGLAS, SAINT LOUIS, MO						1.279	Nov-06	5.615	6.894	6.894
Systems Engineering	VARIOUS	VARIOUS		.252	Nov-04	.987	Nov-06	2.430	Nov-06	1.376	5.045	
Sys Eng-Aft Struct Mod	WX	NADEP, CHERRY POINT NC						2.498	Nov-06		2.498	
Sys Engineering	WX	NAWCWD, CHINA LAKE CA	30.964	1.729	Nov-04						32.693	
SUBTOTAL PRODUCT DEVELOPMENT			55.029	5.543		8.009		9.735		50.603	128.919	

Remarks: Primary Hdw Development - Display Computer - As part of RMP, this funding provides a replacement display computer which may be utilized in all versions of the AV-8B aircraft.
Aircraft Integration referenced in PB06 FY06 and FY07 for RMP has been moved into systems engineering to more accurately reflect the work performed under RMP

Delta between PB06 FY05/FY06 and this budget in FY05 Primary Hdw Dev - ELMP - Funding for DT planned for China Lake will be performed by Rolls Royce.

SUPPORT												
Configuration Mgmt	WX	NAWCAD, PATUXENT RIVER MD		.050	Nov-04	.196	Nov-05	.130	Nov-06	Continuing	Continuing	
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD		.289	Nov-04	.302	Nov-05	.260	Nov-06	Continuing	Continuing	
Software Development	VARIOUS	NORTHRUP GRUMMAN		4.703	Jul-05						4.703	4.703
Software Development	WX	NAWCWD, CHINA LAKE CA	4.808	4.687	Dec-04	2.312	Nov-05					
Software Development	VARIOUS	VARIOUS		1.125	VARIOUS	.251	VARIOUS	1.326	VARIOUS	Continuing	Continuing	
Develop Support Equip	VARIOUS	VARIOUS		.125	Nov-04	.274	VARIOUS				.399	
Technical Data	CPFF	VARIOUS		.150	Jun-05						.150	.150
SUBTOTAL SUPPORT			4.808	11.128		3.335		1.716		Continuing	Continuing	

Remarks: In PB-06 Studies & Analyses for FY06 and FY07 was referenced, these funds have been realigned to Systems Engineering and Primary Hdw Dev to better reflect the requirements of RMP.
Delta's between PB06 FY05 and this budget are due to Congressional Increases for Litening Pods and supplemental funds received for Station Flight Clearance.

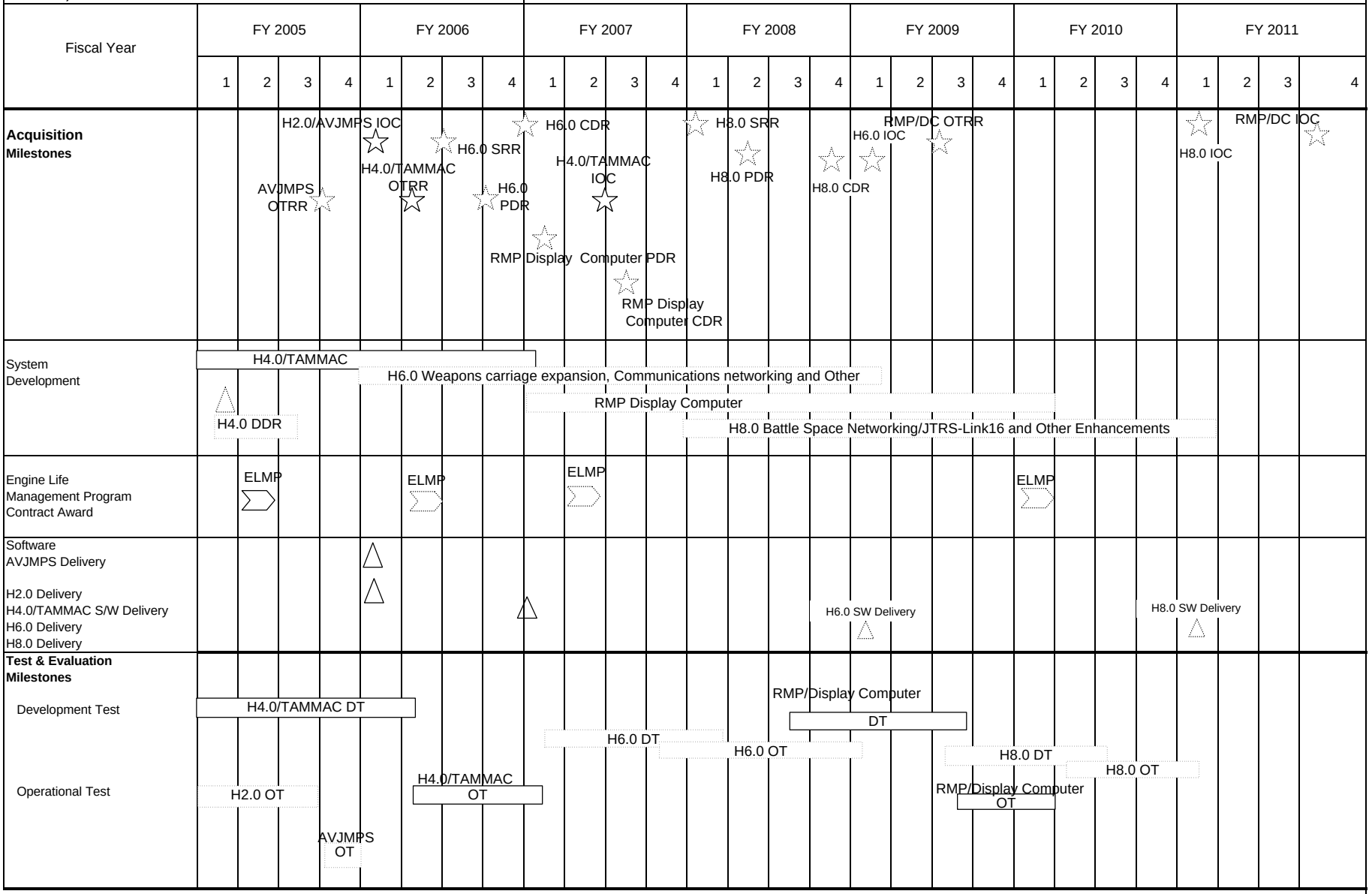
Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604214N, AV-8B AIRCRAFT - ENG DEV				PROJECT NUMBER AND NAME 0652/9546 AV-8B							
TEST & EVALUATION													
DEVELOPMENTAL TEST & EVAL	WX	VARIOUS	34.983	.487	Apr-05					Continuing	Continuing		
OPERATIONAL TEST & EVALUATION	WX	NAWCWD, CL/COMOPTEVFOR	19.458			1.676	Mar-06				21.134		
SUBTOTAL TEST & EVALUATION			54.441	.487		1.676				Continuing	Continuing		
Remarks: FYO5 Adjustments due to testing performed at Rolls Royce vice China Lake. Mission Systems DT moved to Operational Test to reflect project phase.													
MANAGEMENT													
CONTRACTOR ENG SUPPORT	VARIOUS	VARIOUS	48.960	1.012	VARIOUS	.301	VARIOUS	.709	VARIOUS	1.719	52.701		
GOVERNMENT ENG SUPPORT	WX	NAWCAD, PATUXENT RIVER MD	2.909	.923	VARIOUS	1.000	VARIOUS	1.082	VARIOUS	3.573	9.487		
PROGRAM MGMT SUPPORT	WX	NAWCAD, PATUXENT RIVER MD				.771	VARIOUS	.405	VARIOUS	.874	2.049		
TRAVEL	TO	NAVAIRHQ , PATUXENT RIVER MD	.637	.242	VARIOUS	.231	VARIOUS	.231	VARIOUS	.603	1.944		
SBIR ASSESSMENT													
SUBTOTAL MANAGEMENT			52.506	2.177		2.302		2.427		6.769	66.181		
Remarks: Cost grow th in FY05 attributed to Congressional increases and supplemental funding.													
Total Cost			166.784	19.336		15.322		13.878		Continuing	Continuing		
Remarks: Totals might not add due to rounding													

CLASSIFICATION: **UNCLASSIFIED**

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N /**

PROJECT NUMBER AND NAME: 0652/9546 AV-8B



CLASSIFICATION: **UNCLASSFIED**

Exhibit R-4a, Schedule Detail			DATE: **February-06**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROJECT NUMBER AND NAME 0652/9546 AV-8B					
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	FY 2010	FY 2011
ELMP Contract Award	2Q	2Q	2Q			1Q	
H2.0 OT	1Q-3Q						
AVJMPS OT	4Q						
H4.0 TAMMAC SYSTEM DEVELOPMENT	1Q-4Q	1Q-4Q	1Q				
H4.0 TAMMAC DDR	1Q						
H 4.0/TAMMAC DT	1Q-4Q	1Q-2Q					
H4.0/TAMMAC OTRR		2Q					
H4.0/TAMMAC OT		2Q-4Q	1Q				
H4.0/TAMMAC S/W Delivery			1Q				
H4.0 TAMMAC IOC			2Q				
H6.0 Battle Space Networking/JTRS-Warrior	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
H6.0 SRR		2Q-3Q					
H6.0 PDR		4Q					
H6.0 CDR		4Q					
H6.0 DT			1Q-4Q	1Q			
H6.0 OT			4Q	1Q-4Q	1Q		
H6.0 IOC					1Q		
H8.0 Battle Space Networking/JTRS-Warrior			4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q
H8.0 SRR				1Q			
H8.0 PDR				2Q			
H8.0 CDR				4Q			
H8.0 SW DELIVERY							1Q
H8.0 DT					3Q-4Q	1Q--3Q	
H8.0 OT						2Q-4Q	1Q
H8.0 IOC							1Q
RMP DISPLAY COMPUTER SYSTEM DEVELOPMENT			1Q-4Q	1Q-4Q	1Q-4Q	1Q	
RMP DISPLAY COMPUTER PDR			1Q				
RMP DISPLAY COMPUTER CDR			3Q				
RMP DISPLAY COMPUTER OTRR					3Q		
RMP DISPLAY COMPUTER DT				3Q-4Q	1Q-3Q		
RMP DISPLAY COMPUTER OT					3Q-4Q	1Q	
RMP DISPLAY COMUTER IOC							4Q
AVJMPS OTRR	4Q						
H2.0/AVJMPS IOC		1Q					

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5					R-1 ITEM NOMENCLATURE 0604215N, STANDARDS DEVELOPMENT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	61.313	84.225	112.257	99.686	48.416	35.722	31.738
0572/JT SERVICE/NV STD AVIONICS CP/SB	44.614	63.019	98.025	84.759	32.843	19.541	15.004
1857/CALIBRATION STANDARDS	5.368	1.345	1.939	1.993	2.022	2.039	1.985
2311/STORES PLANNING AND WEAPONEERING	10.574	10.911	11.357	11.981	12.578	13.147	13.733
2312/COMMON HELICOPTERS	.757	.750	.936	.953	.973	.995	1.016
9999/CONGRESSIONAL ADD		8.200					

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

Project 0572, 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 the C/KC-130T Avionics Modernization Program (AMP), and Navy chairmanship and participation in the Joint Services Review Committee (JSRC) for Avionics Standardization. The RDT&E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, Joint Tactical Radio Systems (JTRS) EDM units, Aircrew Wireless Internal Communication Systems (AWICS) EMD units, and Vector Product Format (VPF) software units.

Project 1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the DOD and Joint Services Metrology Research and Development program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

Project 2311, Stores Planning and Weaponeering Module: The Naval Aircraft Weaponeering Components (NAWC) project, now referred to as the Weaponeering and Stores Planning (WASP) components, are integrated software products that allow pilots to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage, eliminate weapon delivery solutions that violate aircraft T/M/S specific safety-of-flight envelopes, and perform detailed weapons employment planning. WASP is approved by N78 as a permanent flight clearance system for the F/A-18 A, A+, B, C, D and D(RC) aircraft, and for all future aircraft T/M/S in the Joint Mission Planning System (JMPS). As a flight clearance system, WASP components will alert pilots if their planned weapon release conditions will result in bomb-to-bomb collisions, bomb-to-aircraft collisions, aircraft overstress, or excessive risk of aircraft loss/damage in the event of fuze early bursts. Weaponeering capabilities are fundamental requirements for Interdiction, Armed RECCE and Close Air Support mission planning, therefore WASP product availability is critical to successful Post-Joint Mission Planning System (JMPS) Combat 1 OT&E. The WASP product encompasses a multitude of GOTS/COTS software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators, etc.), which are delivered as new targets are identified, emergent requirements for new aircraft T/M/S, stores and weapons are approved by N78, and new flight clearances and flight restrictions issued by NAVAIRSYSCOM. WASP components are being delivered on an annual basis starting with v1.0 in December FY03.

Project 2312, 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, 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.

Project 9770N , AVITS: The principal functions of AVITS is to provide the military maintainer: the capability to configure multiple, programmable virtual instruments into a portable, light weight, single-standard, multiple protocol packaging scheme; a capability that provides an interface to distance support assistance and training applications; and a system that reduces total ownership costs within the military. In addition, AVITS shall provide: "plug-and-play" instrument functionality along with self-test and self-system/on-line verification (calibration); one control/display with multiple virtual control/display panels; an integrated test executive engine that allows for automated maintenance procedures applications; and the ability to collect/ transmit test data in a format and language compatible with legacy maintenance data management software currently in use by the military.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5		R-1 ITEM NOMENCLATURE 0604215N, STANDARDS DEVELOPMENT

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

Project 9771N: New, innovative, conformal projection display screen technologies are now emerging that enhances optical performance, promise improved supportability, and reduce development costs for airborne displays. Such displays are easily size-scalable and exhibit customizable viewing angles, selective ambient light rejection, and extremely high contrast ratios. They also hold the potential for reduced weight, lower unit cost, and increased reliability. A new and innovative means to provide illumination to the projection screen is required for the military to take advantage of potential performance improvements. Current commercially based light engines will not meet the necessary optical performance requirements while operating in the military environment, therefore a solid-state light engine is required. At present, such an approach does not exist within industry. A solid state light engine, in concert with the new conformal display screen technology, provides an innovative approach to improving the state of the art for military displays.

Current AMLCD and CRT technology based displays have cost, optical performance, reliability, and weight shortcomings that reduce mission effectiveness in airborne applications while existing projection based displays have yet to provide a simple but effective solution. A more innovative light engine is needed to fully utilize projection technology's enhanced features. Advanced projection display technology using LED solid-state lighting can mitigate the limitations of other approaches while meeting the airborne display requirements for a variety of different applications.

The inherent conformal scalability of this technology will significantly reduce the development costs for different size displays. Low material costs will reduce maintenance costs. Common display solutions will also significantly reduce the logistics infrastructure requirements.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0572 JT SERV/NV STD AVION CP/SB	44.614	63.019	98.025	84.759	32.843	19.541	15.004
RDT&E Articles Qty	30	1	1				

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 Communication Navigation Surveillance Air Traffic Management (CNS/ATM), Advanced Mission Computer & Displays (AMC&D), Vector Product Format (VPF), Aircrew Wireless Internal Communication Systems (AWICS), Joint Tactical Radio System (JTRS), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS) Collision Avoidance Systems, Military Flight Operational Quality Assurance (MFOQA), Common Avionics Displays, C/KC-130T CNS/ATM AMP, and the Avionics Component Improvement Program (AVCIP). C/KC-130T CNS/ATM AMP objectives will be achieved through a comprehensive cockpit redesign. GPWS/TAWS Collision Avoidance Systems and AVCIP are new starts for FY 2006. Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft. FY05 Congressional adds are for MFOQA and Common Avionics Display.

The RDT&E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, Joint Tactical Radio Systems (JTRS) Engineering Development Modules (EDM) units, Aircrew Wireless Internal Communication Systems (AWICS) EMD units, and Vector Product Format (VPF) software units.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	5.543		40.770
RDT&E Articles Qty			1

CNS/ATM C/KC-130T AMP - Continue engineering manufacturing and development efforts. Initiate EMD Contract Award. Initiate validation kit procurement and installation and verification kit procurement. Conduct Systems Functional Revieiw , Preliminary Design Review and Critical Design Review. FY06 activities are dependent upon ATR which has been initiated with expected approval in 2nd Qtr of FY06.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		.984	
RDT&E Articles Qty			

AVCIP - Investigate High Value Return on Investment Candidates, addressing emergent avionics component critical readiness degraders and transformantional upgrade opportunities. Prioritize critical avionics performance, capability and obsolescence problems that require immediate attention. Pursue solutions to these problems based upon urgency, warfighting contribution and return on investment. Develop and test system solutions based on priority. Resources will cover program management, engineering, contracting and logistics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and developmental/ operational testing. Critical avionics performance, capability and obsolescence problems are currently addressed by disrupting current programs of record or are delayed with negative fleet impact.

NOTE: FY07-FY11 FUNDING HAS BEEN MOVED TO NEW PE 0702239N, PROJECT UNIT 3170.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	2.138	1.723	4.676
RDT&E Articles Qty			

COMMON AVIONICS DISPLAYS - Conduct Tech Demos to develop and test a projection display as (1) a form-fit-function demonstration replacement for the IP-1318A/A, a 5"x5" cockpit display used on F/A-18C/D/E/F aircraft, (2) a form-fit-function demonstration replacement for a 6"x8" cockpit display used on the AH-1Z / UH-1Y, and (3) a form-fit-function demonstration replacement for a 6"x6" cockpit display used on the MV-22B. The Tech Demos are maturing this technology as an option for the CAD program. Efforts include laboratory, ground and flight testing for optical and performance testing in addition to lab, ground and flight hours for integration and performance testing. Initial efforts will focus on acquisition planning and display prioritization in conjunction with a Trade Study resulting in development of independent cost estimates, request for proposals, and award of a common display contract. Conduct Initial Baseline Review (IBR), Systems Requirements Review (SRR) and Preliminary Design Reveiw (PDR). Begin development of the first of a family of common displays for Naval Aviation which provides performance enhancements over current LCD and CRT technology for tactical cockpit and mission console displays. Planned enhancements include high brightness, high contrast, and custom viewing angle capabilities.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	1.010	3.085	9.715
RDT&E Articles Qty			

MFOQA - Initiate support to USN Naval Test Pilot School for the Fleet High Angle of Attack Program in support of MFOQA trending, data analysis, and database management concept development. Efforts will focus on F-18, H-60, V-22, and T-45 including follow-on platforms and core capability developmental effort to include parameter optimization, technology validation, and standardization of interfaces and protocols to be used. Additional efforts will include software development and integration for fleetwide MFOQA implementation. Prepare and Conduct PDR and CDR.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		6.002	9.843
RDT&E Articles Qty			

GPWS/TAWS - Begin development of GPWS/TAWS Collision Avoidance System (CAS) algorithm tailored to the platform performance and missions of the MH-60R, MH-60S, UH-1Y and AH-1Z. Develop simulation models for UH-1Y and AH-1Z for use at manned flight simulator (MFS). Evaluate MH-60R and MH-60S simulation models for suitability in GPWS/TAWS CAS development effort. Develop GPWS/TAWS CAS algorithms utilizing MFS as real-time hardware and pilot in the loop tool. Develop and evaluate algorithm interfaces necessary for integration of the algorithm within platform OFP. Award H-60 Integration Contract. Award H-1 Integration Contract Award. Initiate and complete H-60 DT. Initiate H-60 OT.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.865	1.818	
RDT&E Articles Qty	1		

VPF - Conducted Vector Product Format (VPF) integration study for TAMMAC. Perform VPF software and hardware integration into TAMMAC. Completed VPF Integration Systems Design Review (SDR). Awarded VPF development contract. Conducted 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 software unit will be procured to conduct T&E of the VPF software in TAMMAC.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB	

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	16.141	23.018	17.282
RDT&E Articles Qty	4		

JTRS - Awarded integration study contracts for the Joint Tactical Radio System (JTRS). Began aircraft integration analysis and planning for lead platforms. Began development of Concept of Operations (CONOPS), mission planning, and message processing software for JTRS. The acquisition plan identifies E-2 AHE (Advanced Hawkeye) as the Lead Platform and includes JTRS Integration Studies/Analyses including follow-on platforms. Initiate and complete E-2 AHE Multi-mode Information Distribution System (MIDS) JTRS Level 1 integration including development of required ancillary equipment. RDT&E articles were Engineering Development Models (EDMs) for integration lab installs and test aircraft installs. Initiate development of Navy-unique Communications capable hardware/software systems. Conduct technology assessments and demonstrations to determine feasible solutions to achieve airborne JTRS/Communications interoperability. Develop operational improvement of legacy communication system in support of networking capability.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.679	1.156	1.116
RDT&E Articles Qty			

JSRC - 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, CNS/ATM, Joint Services obsolescence Management Plan and the update of the Core Avionics Master Plan (CAMP). Support and participate in Avionics Operational Advisory Group (OAG) panels and HFQMB.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.376		
RDT&E Articles Qty			

JMPS - Complete software developmental and operational testing efforts for Tactical Air Moving Map Capability/Joint Mission Planning System (TAMMAC/JMPS) Map planning capability. Incorporated common requirements from the TAMMAC integration of the MH-60S and AV-8B platforms.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB	

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	12.039	17.638	6.218
RDT&E Articles Qty	10	1	

CNS/ATM - Continued CNS/ATM integration of Mode S, and Required Navigation Performance (RNP RNAV) functional integration and certification efforts into naval aircraft. Perform naval aircraft platform functional integration for F/A-18E/F, MH-60S, MH-60R, AH-1Z , UH-1Y and follow-on platforms in the areas of communications, navigation, surveillance, processing and displays. Capabilities include Mode S, 8.33khz, FM Immunity, and RNP/RNAV. Continue CNS/ATM requirements definition for follow-on platforms. FY05 articles required for Mode S integration and test. FY06 article is required for integration and testing on the AH-1Z.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	1.688	3.000	2.000
RDT&E Articles Qty	15		

AWICS - Safety: Complete development of unencrypted wireless ICS system, and achieve Installation Decision (Unencrypted) for AWICS. Commence development and testing for Secure Transmission (COMSEC) capability.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	4.135	4.595	6.405
RDT&E Articles Qty			

AMC&D - For F/A-18E/F system; completed DT-IIA-4; conducted OT-IIA-2 (OPEVAL), and completed integration of 8X10 display, Fiber Channel Network Switch (FCNS) and AMC. Achieved MS III for FCNS and AMC. Conducted DT/OT for 8X10 display and Achieve MS III. For AV-8B: completed OT-IIB (OPEVAL) and achieved MS III. Conduct parts obsolescence research, development, integration, test and evaluation efforts to establish viable system baseline in support of new production requirements and perform platform integration studies and activities to expand user base.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB

C. PROGRAM CHANGE SUMMARY

Funding:	FY2005	FY2006	FY2007
Previous President's Budget:	47.521	71.105	58.220
Current President's Budget:	44.614	63.019	98.025
Total Adjustments	-2.907	-8.086	39.805

Summary of Adjustments			
Congressional Reductions		-7.000	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.869	-0.743	
Congressional Increases	0.010		
Economic Assumptions		-0.343	1.265
Miscellaneous Adjustments	-2.048		38.540
Subtotal	-2.907	-8.086	39.805

Schedule:
AMC&D schedule reflects an addition of an approved LRIP III in 2Q/05. MS III 8x10 AMPD moved from 2Q/05 to 2Q/06 to allow for completion of WRA testing and adequate time for COMOPTEVFOR to generate test report and obtain a successful MS III decision.
CNS/ATM schedule reflects a change in program requirements, OPNAV has requested that the CNS/ATM program meet an urgent requirement of fielding MODE S to meet mandated requirements, adjusting the program from being platform focused to capability focused. The RNP/RNAV requirement will be addressed in POM 08. Removed the RNP/RNAV System Integration and DT/OT from schedule. H-60 systems integration extended through FY06 due to delay in H-60 contract award. H-60 DT/OT moved from 1Q/06 to 1Q/07.
MFOQA schedule reflects a change in strategy resulting from FY05 Congressional add. OT will be conducted for T-45 (3Q/10) to assess platform Hardware changes.
JTRS schedule reflects the acquisition plan for E-2 AHE as the lead platform and includes JTRS integration studies/analyses. Include requiements and design for RSL-16 and GEN 5 development.
AWICS schedule changed due to de-scope of contract and adjustment of acquisition strategy to align program with existing Army secure transmission wireless ICS program.
CNS/ATM C/KC-130T AMP schedule has been added.
GPWS/TAWS schedule reflects an additional H-1 integration contract award in 2Q/09 to provide technology insertion for the TAMMAC in the mission computer.
VPF schedule reflects a change in CDR from 4Q/05 to 1Q/06 to meet platform customer availability. Fleet introduction moved from 4Q/06 to 2Q/07 due to platform customer OT delayed.
JMPS OT moved from 2Q/05 to 2Q/06 to align with JMPS schedule changes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**		PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Common Avionics, APN	160.856	178.733	177.500	156.239	149.552	150.168	149.423	1,044.372	2,166.843
0702239N, Avionics Component Improvement Program			1.375	1.625	1.877	2.882	3.889	0.000	11.648
0502504M, C-130 Series, APN LI 056000		29.186			30.563	43.908	39.731	432.000	575.388

Notes: Per ASN (FMC) - APN-5 funding through FY08 should be reclassified to Program Element (PE) 0604125N, Project Unit (PU) 0572.
APN-5 funding in FY05 is in process. Reclassification of FY07 and FY08 has been completed.
An Above Threshold Reprogramming (ATR) for FY06 has been initiated with expected approval in 2nd Qtr FY06.

E. ACQUISITION STRATEGY: Advanced Mission Computer & Display (AMC&D) is utilizing a cost plus contract to McDonnell Douglas Corp (MDC), a wholly owned subsidiary of the Boeing Company, for EMD. 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 contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Joint Tactical Radio System (JTRS) development is lead by the Air Force for the Airborne, Maritime and Fixed Site (AMF) program and by SPAWAR for the Multi-mode Information Distribution Systems (MIDS), JTRS and Common Link Integration Processing (CLIP) programs. The Navy is utilizing an Air Force contract vehicle for research and development of navy unique requirements and a Navy contract vehicle for integration studies for the GEN 5 analysis and development efforts on the lead platforms. The Navy will integrate systems and components to satisfy platform requirements to achieve JTRS/communication capability as determined by analyses. TAMMAC/ Vector Product Format (VPF) is utilizing a sole source to Harris Corporation, to incorporate the VPF/Symbology data into the existing TAMMAC FRP Hardware. Aircrew Wireless Internal Communication System (AWICS) acquisition strategy changed to align with the Army Wireless ICS developmental program resulting in a common system for use aboard multiple assault, logistics, Rotary Wing and Fixed Wing aircraft. GPWS/TAWS software modules will be developed by the existing PMA209 government software product team. The software modules will be integrated into the platform host computer by the platform's prime integrator. The Avionics Component Improvement Program (AvCIP) will annually compete candidate solutions according to criticality of operational contribution, technical risk, return on investment, and breadth of application. OPNAV N78 & N43, NAVAIR, NAVICP and the Fleet will participate in project selection for execution year allocation. The AvCIP IPT will monitor project execution and track return on investment using N43 Flying Hour Program metrics. Modification solutions include modular hardware, software and material upgrades. Government activities include MFOQA integrating a combination of existing aircraft hardware, ground support equipment, commercial off the shelf/government off the shelf hardware and software products. MFOQA program interfaces will be created to share data captured by the F-18 automated maintenance environment and H-60 health and usage monitoring system and existing data bases. A competitive contracting strategy will be used for procurement as needed. System integration efforts will be accomplished with prime vendors using existing contract vehicles for technical engineering services as much as possible. The Common Display program is planned as an AAP program with developmental efforts competitively awarded in FY07. Acquisition Decision Milestone will occur prior to award, and will be based upon results of acquisition planning and display prioritization for tactical cockpit displays and mission consoles. The USN/USMC Avionics Modernization Program (AMP) will leverage off of the USAF developmental program by the same name, an ACAT ID program, to achieve the greatest possible commonality between equivalent USAF and USN/USMC aircraft. The USAF program will modify approximately 500 USAF C-130 aircraft. The USN/USMC program will modify 48 C/KC-130T aircraft. Based on the maturity of the U.S. Air Force (USAF) program in FY 2004, APN-5 funds were originally budgeted to integrate the USAF-developed C-130 AMP into the USN/USMC C/KC-130T AMP. The USAF schedule has slipped, with a Milestone C Low Rate Initial Production currently expected to occur in March 2006. Given the current status of the USAF program, recent guidance from the Assistant Secretary of the Navy (Financial Management and Comptroller) states that the USN/USMC C-130 joint effort with USAF should be funded with RDT&E,N funds. The Navy is exploring contracting options for procurement phase.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 5		0604215N, STANDARDS DEVELOPMENT				0572, JT SERV/NV STD AVION CP/SB						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
AIRCRAFT INTEGRATION	SS-CPAF	THE BOEING COMPANY, WICHITA, KS						3.127	11/30/2006		3.127	3.127
ANCILLARY HARDWARE DEVELOPMENT	SS-CPAF	THE BOEING COMPANY, WICHITA, KS						2.262	11/30/2006		2.262	2.262
Aircraft Integration	SS-TBD	BELL HELICOPTER TEXTRON INC, HURST, TX		1.060	7/30/2005	3.297	11/30/2005	1.400	12/31/2006		5.757	5.757
Aircraft Integration	SS-TBD	LOCKHEED MARTIN CORPORATION, OWEGO, NY		1.230	7/30/2005	.059	11/30/2005	1.400	12/31/2006		2.689	2.689
Aircraft Integration	SS-TBD	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	5.282	10.532	3/31/2005	8.440	12/31/2005	2.043	12/31/2006		26.296	26.296
Aircraft Integration	WX	NAWCAD, PATUXENT RIVER MD		1.601	12/31/2004	3.530	12/31/2005	.667	12/31/2006	Continuing	Continuing	
Aircraft Integration	WX	NAWCAD, PATUXENT RIVER MD	1.055	.243	3/31/2005	1.231	12/31/2005	1.276	12/31/2006	Continuing	Continuing	
Aircraft Integration	WX	NAWCWD, CHINA LAKE CA	.649	2.567	7/30/2005			.743	12/31/2006	Continuing	Continuing	
Aircraft Integration	SS-CPFF	NORTHROP GRUMMAN, SAINT AUGUSTINE, FL		3.793	7/30/2005	12.390	12/31/2005	10.780	12/31/2006		26.963	26.963
Aircraft Integration	SS-CPFF	SIKORSKY AIRCRAFT CORP, STRATFORD, CT				1.400	12/31/2005				1.400	1.400
Aircraft Integration	VARIOUS	VARIOUS		.373	VARIOUS			.129	VARIOUS	Continuing	Continuing	
Aircraft Integration	VARIOUS	VARIOUS	.536	.376	VARIOUS						.911	
PRIMARY HARDWARE DEVELOPMENT	SS-CPAF	THE BOEING COMPANY, WICHITA, KS	3.988					1.998	11/30/2006		5.986	5.986
PRIMARY HARDWARE DEVELOPMENT	SS-CPAF	VARIOUS						1.200	11/30/2006		1.200	1.200
Primary Hdw Development	SS-CPFF	MULTISPECTRAL SOL, INC., GERMANTOWN, MD	2.932	2.170	3/31/2005						5.102	5.102
Primary Hdw Development	SS-CPIF	HONEYWELL INTER INC, ALBUQUERQUE, NM				2.685	2/28/2006	1.013	2/28/2007		3.698	3.698
Primary Hdw Development	SS-CPIF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	20.838	1.068	3/31/2005			3.536	2/28/2007		25.442	25.442
Primary Hdw Development	SS-TBD	DCS CORPORATION, ALEXANDRIA, VA						1.688	12/31/2006		1.688	1.688
Primary Hdw Development	SS-TBD	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO						1.000	12/31/2006		1.000	1.000
Primary Hdw Development	TBD	VARIOUS		.330	12/31/2004	2.887	12/31/2005	2.276	12/31/2006	Continuing	Continuing	
Primary Hdw Development	SS-T&M	TRITON SERVICES INC, BOWIE, MD		.423	6/30/2005	.223	12/31/2005				.646	.646
Primary Hdw Development	VARIOUS	VARIOUS						2.715	VARIOUS	Continuing	Continuing	
Primary Hdw Development	VARIOUS	VARIOUS	1.149	.849	VARIOUS	.439	VARIOUS	.626	VARIOUS	Continuing	Continuing	
SYSTEMS ENGINEERING	WX	NAWCAD, PATUXENT RIVER MD						.300	11/30/2006	Continuing	Continuing	
Systems Eng	MIPR	ESC, HANSCOM AFB MA	.061	.360	12/31/2004	.210	12/31/2005	1.000	12/31/2006	Continuing	Continuing	
Systems Eng	WX	NAWCAD, PATUXENT RIVER MD	2.417	2.498	6/15/2005	3.248	11/30/2005	3.604	11/30/2006	Continuing	Continuing	
Systems Eng	VARIOUS	VARIOUS	3.233	1.790	VARIOUS	.390	VARIOUS	1.017	VARIOUS	Continuing	Continuing	
		From FY94-02	277.703								277.703	
SUBTOTAL PRODUCT DEVELOPMENT			319.842	31.262		40.430		45.800		Continuing	Continuing	
Remarks:												
SUPPORT												
CONFIGURATION MGMT	SS-CPAF	NATIONAL TECHNOLOGIES ASSOC. INC, ALEX, VA						.034	11/30/2006		.034	.034
DEVELOP SUPPORT EQUIP	SS-CPAF	THE BOEING COMPANY, WICHITA, KS						25.226	11/30/2206		25.226	25.226
Develop Support Equip	VARIOUS	VARIOUS	.444			.853	VARIOUS	.332	VARIOUS	Continuing	Continuing	
ILS CSS	VARIOUS	VARIOUS						.722	VARIOUS	Continuing	Continuing	
ILS DEPOT CHPT	WX	NADEP, CHERRY POINT NC						.491	11/30/2006	Continuing	Continuing	
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD	.252	.560	11/30/2004	.660	11/30/2006	1.451	12/31/2006	Continuing	Continuing	
Integrated Logistics Sup	VARIOUS	VARIOUS	.890	.152	VARIOUS	.649	VARIOUS				1.692	
Integration Logistics Sup	VARIOUS	VARIOUS	.094	.920	VARIOUS	.720	VARIOUS	.865	VARIOUS	Continuing	Continuing	
SOFTWARE DEVELOPMENT	WX	NADEP, CHERRY POINT NC						.439	11/30/2006	Continuing	Continuing	
Software Development	MIPR	PEOAV SFAE AVIR, REDSTONE ARSENAL, AL				2.822	11/30/2005	1.882	11/30/2006	Continuing	Continuing	
Studies & Analyses	VARIOUS	VARIOUS	1.297	.441	VARIOUS	1.403	VARIOUS	.210	VARIOUS	Continuing	Continuing	
TECHNICAL DATA	MIPR	AFFTC/FMAP, EDWARDS AFB, CA						.268	11/30/2006	Continuing	Continuing	
TECHNICAL DATA	WX	NADEP, CHERRY POINT NC						.162	11/30/2006	Continuing	Continuing	
		From FY94-FY02	24.037								24.037	
SUBTOTAL SUPPORT			27.014	2.074		7.107		32.081		Continuing	Continuing	

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604215N, STANDARDS DEVELOPMENT				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB						
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PAXTUXENT RIVER MD		1.528	11/30/2004					Continuing	Continuing	
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	.222	1.265	11/30/2004	3.530	11/30/2005	.762	11/30/2006	Continuing	Continuing	
Dev Test & Eval	WX	NAWCWD, CHINA LAKE CA						3.159	11/30/2006	Continuing	Continuing	
Dev Test & Eval	VARIOUS	VARIOUS	3.050	.415	VARIOUS	.285	VARIOUS	.259	VARIOUS	Continuing	Continuing	
Oper Test & Eval	VARIOUS	VARIOUS	1.500			.131	VARIOUS	.092	VARIOUS	Continuing	Continuing	
Test Assets	VARIOUS	VARIOUS		.029	VARIOUS	.041	VARIOUS			Continuing	Continuing	
Test Assets	SS-FFP	RAYTHEON TECH SVCS, INDIANAPOLIS,IN		.305	3/31/2005						.305	.305
		From FY94-FY02	24.363								24.363	
SUBTOTAL TEST & EVALUATION			29.135	3.541		3.987		4.272		Continuing	Continuing	
Remarks:												
MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	5.264	3.411	VARIOUS	6.281	VARIOUS	6.206	VARIOUS	Continuing	Continuing	
Contractor Eng Sup	WX	NAWCAD, PATUXENT RIVER MD				.307	12/31/2005	.438	11/30/2006	Continuing	Continuing	
ENGINEERING & TECH SRVC CSS	VARIOUS	VARIOUS						.268	VARIOUS	Continuing	Continuing	
ENGINEERING SUP	WX	NADEP, CHERRY POINT NC						1.602	11/30/2006	Continuing	Continuing	
ENGINEERING SUP	WX	NAWCAD, PATUXENT RIVER MD		1.043	12/31/2004			2.579	11/30/2006	Continuing	Continuing	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	1.718	.829	12/31/2004	1.140	12/31/2005	.763	12/31/2006	Continuing	Continuing	
Government Eng Sup	VARIOUS	VARIOUS	.550	.310	VARIOUS	.558	VARIOUS	.718	VARIOUS	Continuing	Continuing	
MGT & PROF SUPPT SVC CSS	SS-CPAF	SIERRA MGMT & TECH, INC. CALIFORNIA, MD						.091	11/30/2006		.091	.091
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	1.703	1.180	12/31/2004	2.603	11/30/2005	2.505	12/1/2006	Continuing	Continuing	
Program Mgmt Sup	VARIOUS	VARIOUS	.938	.897	VARIOUS	.506	VARIOUS	.562	VARIOUS	Continuing	Continuing	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	.034	.068	VARIOUS	.100	VARIOUS	.139	VARIOUS	Continuing	Continuing	
SUBTOTAL MANAGEMENT			10.207	7.738		11.496		15.872		Continuing	Continuing	
Remarks:												
Total Cost			386.198	44.614		63.019		98.025		Continuing	Continuing	
Remarks: Totals may not add due to rounding.												

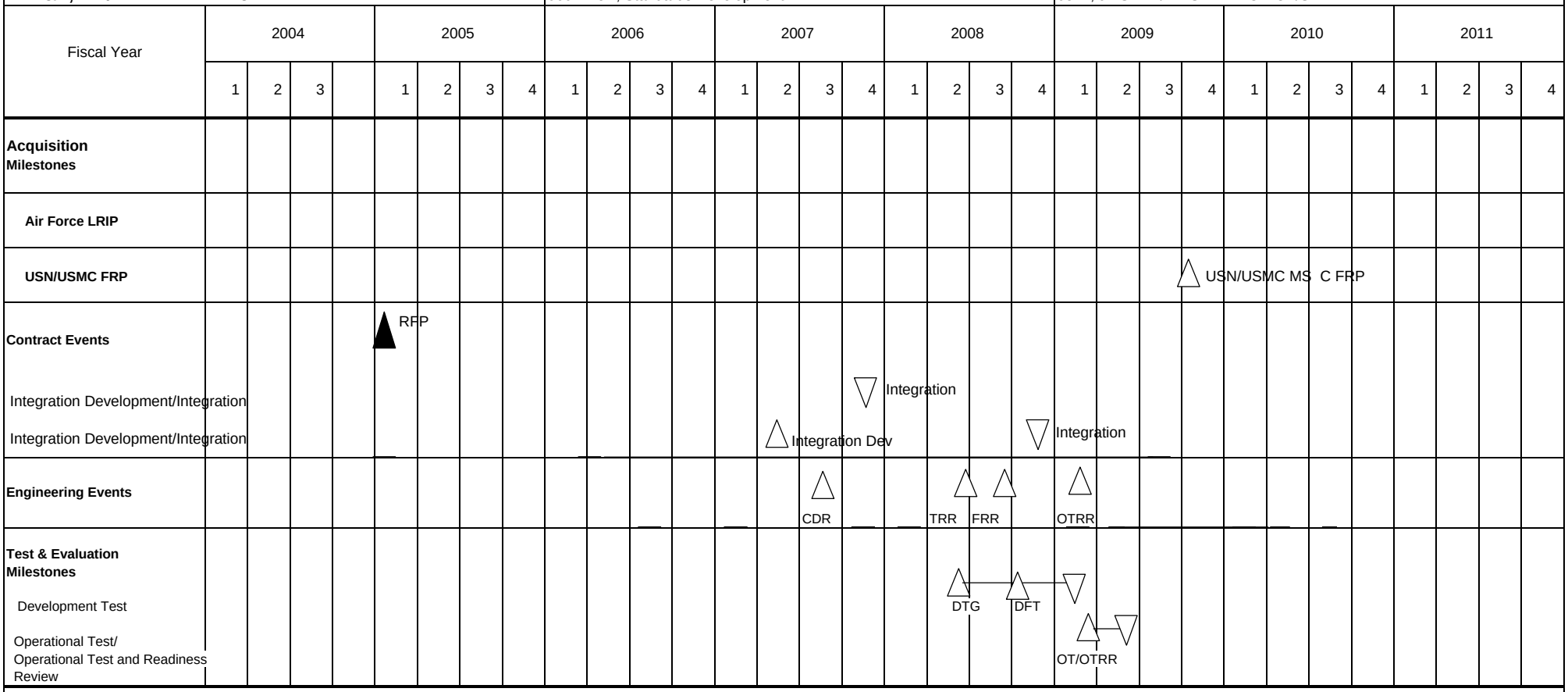
CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

C/KC-130T CNS/ATM AMP

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE:		
C/KC-130T CNS/ATM AMP						**February 2006**		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604215N, Standards Development				0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Release of RFP		1Q						
EM&D Contract Award								
Integration				4Q				
Integration Development				2Q				
Integration					4Q			
Critical Design Review (CDR)				3Q				
Test Readiness Review (TRR)					2Q			
Developmental Test Ground (DTG)					2Q			
Functional Readiness Review (FRR)					3Q			
Developmental Flt Test (DFT)					4Q			
Operation Test/Operational Test Readiness Review (OT/OTRR)						1Q-2Q		
USN/USMC MS C FRP						4Q		

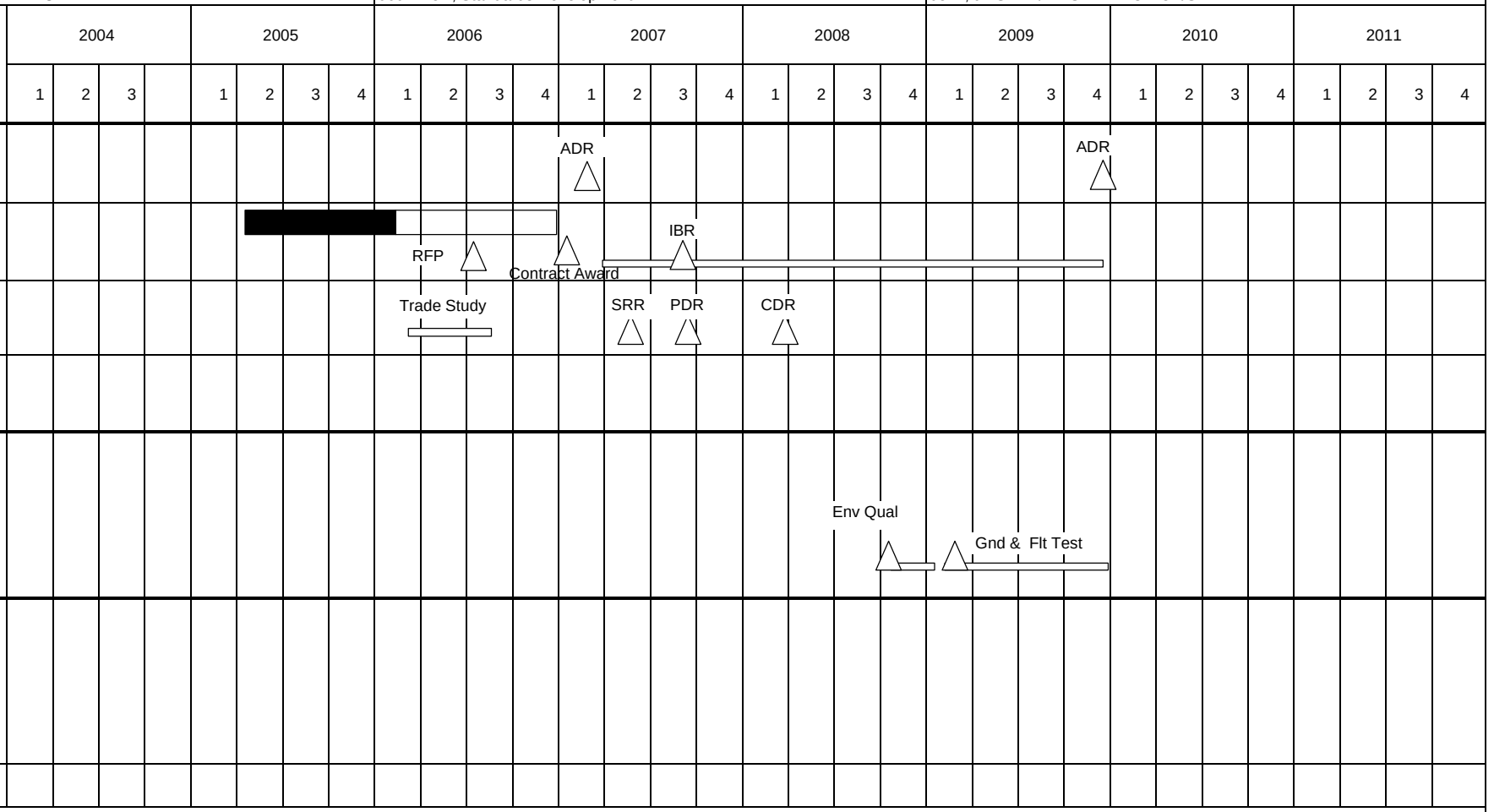
CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

COMMON AVIONICS DISPLAYS (CAD)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail

COMMON AVIONICS DISPLAYS (CAD)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Tech Demos		2Q-4Q	1Q-4Q					
Engineering Trade Study			1Q-3Q					
RFP Issued			3Q					
Acquisition Decision Review (ADR)				1Q		4Q		
Contract Award				1Q				
System Requirements Review (SRR)				2Q				
Preliminary Design Review (PDR)				3Q				
IBR				3Q				
Critical Design Review (CDR)					1Q			
Deliver Qual Units					3Q			
Environmental Qual					4Q			
Deliver Flt Units						1Q		
Gnd and Flt Test						1Q		

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile — **MFOQA** — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3		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													MS B △	PDR △		CDR △					MS C △			IOC △								
Core Capability (F-18, H-60, T-45, V-22 & follow on platforms)																																
F/A-18C/D/E/F Integration																																
MH-60R/S Integration																																
T-45C Integration																																
MV-22B Integration																																
Test & Evaluation Milestones																																
Developmental Test																																
Operational Test																																
Production Milestones																																
Deliveries																																

Core Capability: Development/Deficiency Correction

F/A-18C/D/E/F Integration: Development/Integration | DT | Installs

MH-60R/S Integration: Development/Integration | DT | Installs

T-45C Integration: Development/Integration | DT | OT | Installs

MV-22B Integration: Development/Integration | DT | Installs

Exhibit R-4a, Schedule Detail

MFOQA

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Development/Deficiency Correction		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
F/A-18C/D/E/F Integration Development/Integration			3Q-4Q	1Q-4Q	1Q-2Q			
F-18C/D/E/F DT					3Q-4Q	1Q		
F-18 Installs						2Q-4Q	1Q-4Q	
MS B				1Q				
Preliminary Design Review (PDR)				2Q				
Critical Design Review (CDR)				4Q				
MS C						1Q		
MH-60R/S Integration Development/Integration				2Q-4Q	1Q-4Q	1Q-2Q		
H-60 DT						3Q-4Q		
H-60 Installs							1Q-4Q	1Q-4Q
T45C Integration Development/Integration					1Q-4Q	1Q-4Q	1Q	
T-45 DT							1Q-3Q	
T-45 OT							3Q-4Q	1Q
T-45 Installs								2Q-4Q
V-22B Integration Development/Integration						1Q-4Q	1Q-4Q	
V-22 DT								1Q-2Q
V-22 Installs								3Q-4Q
IOC						4Q		

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

GPWS/TAWS

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604215N, Standards Development

PROJECT NUMBER AND NAME: 0572, JT SERV/NV STD AVION CP/SB

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3		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									H-60 Integration Contract											H-60 IOC									Forward Looking Capability			
																												H-1 IOC			
Government Software Development									H-60 Govt S/W Development/Integration																	Develop functional requirement/systems spec							
														H-1 Integration Contract								H-1 Integration Contract											
Government Software Development															H-1 Govt S/W Development/Integration																	
Test & Evaluation Milestones																																
Developmental Test												H-60 DT									H-1 DT											
Operational Test														H-60 OT									H-1 OT									
Production Milestones																																
Deliveries																																

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **GPWS/TAWS**						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
H-60 Government Software Development/Integration			1Q-4Q	1Q-3Q				
H-1 Government Software Development/Integration				3Q-4Q	1Q-4Q	1Q		
H-60 Integration Contract			1Q					
H-1 Integration Contract				3Q				
H-1 Integration Contract						2Q		
H-60 Developmental Testing				1Q-3Q				
H-1 Developmental Testing						2Q-4Q		
H-60 Operational Testing				4Q	1Q-2Q			
H-1 Operational Testing							1Q-2Q	
Forward Looking Capability								2Q
H-60 IOC					4Q			
H-1 IOC							4Q	

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

VPF

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3		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													Fleet Introduction △																			
VPF Integration Study	■	■	■																													
Vector Product Development					SDR/SRR ▲		PDR ▲		CDR ▲																							
Software VPF S/W to H/W Integration					■	■	■	■	■	□																						
Test & Evaluation Milestones Development Test/ Operational Testing									DT/OT																							
								■	■	□			OT Testing costs are part of H-1 upgrades testing																			
Production Milestones																																
Deliveries								▲																								

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **VPF**						DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604215N, Standards Development			PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
VPF Integration Study	1Q-3Q								
System Design Review (SDR)		2Q							
System Requirements Review (SRR)		2Q							
Preliminary Design Review (PDR)		3Q							
VPF S/W to H/W Integration		1Q-4Q	1Q-2Q						
Critical Design Review (CDR)			1Q						
Developmental Testing (DT/OT)		4Q	1Q-4Q						
Fleet Introduction				2Q					

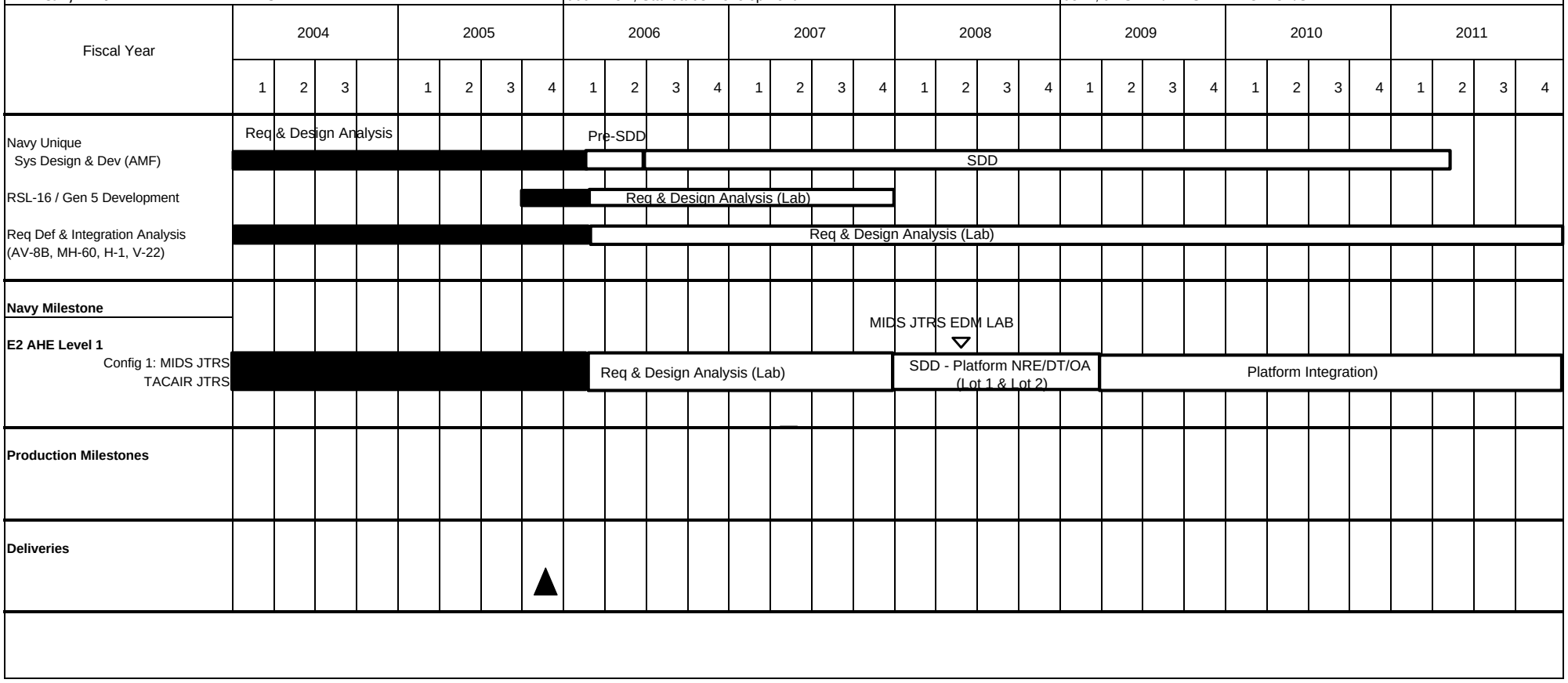
CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

JTRS

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / **BA-5**	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **JTRS**						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
JTRS System Design & Development	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q
RSL-16/GEN 5 Development		4Q	1Q-4Q	1Q-4Q				
SDD-Platform NRE-DT-OA Lot 1 & 2 - E2 AHE	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Platform Integration - E-2 AHE Level 1						2Q-4Q	1Q-4Q	1Q-4Q
MIDS/JTRS Eng Dev Model (EDM) - Lab					2Q			

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

JMPS

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3		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																																
Test & Evaluation Milestones																																
Development Test JMPS 1.1	DT						DT																									
Development Test JMPS 1.2.3																																
Operational Test											OT																					
Production Milestones																																
Deliveries																																

- Split cost with PMA209/PMA265

- PMA265 funding as part of JMPS 1.2.3 roll

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **JMPS**						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Developmental Testing (DT) 1.1	1Q-4Q	1Q						
Developmental Testing (DT) 1.2.3		2Q-4Q	1Q-2Q					
Operational Testing (OT)			2Q-3Q					

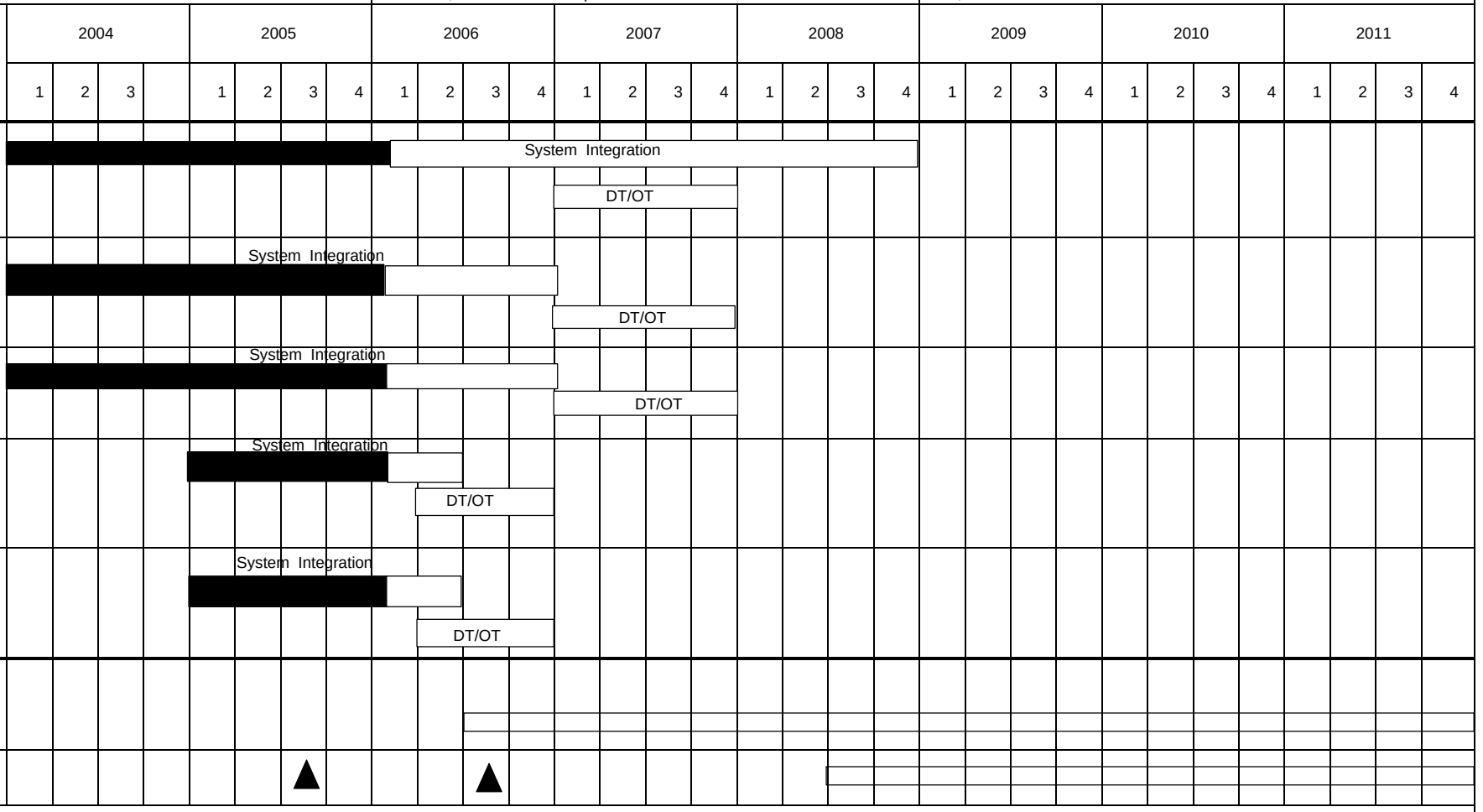
CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

CNS/ATM

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **CNS/ATM**						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
F-18 System Integration	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
MH-60S Integration	1Q-4Q	1Q-4Q	1Q-4Q	1Q				
MH-60R Integration	1Q-4Q	1Q-4Q	1Q-4Q	1Q				
AH-1Z Integration		1Q-4Q						
UH-1Y Integration		1Q-4Q	1Q-2Q					
F-18 DT/OT Mode S				1Q-4Q				
MH-60S DT/OT Mode S				1Q-4Q				
MH-60R DT/OT Mode S				1Q-4Q				
AH-1Z DT/OT Mode S			2Q-4Q					
UH-1Y DT/OT Mode S			2Q-4Q					
Platform Procurements (SW Upgrades ONLY)			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Deliveries (SW Upgrades)					3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

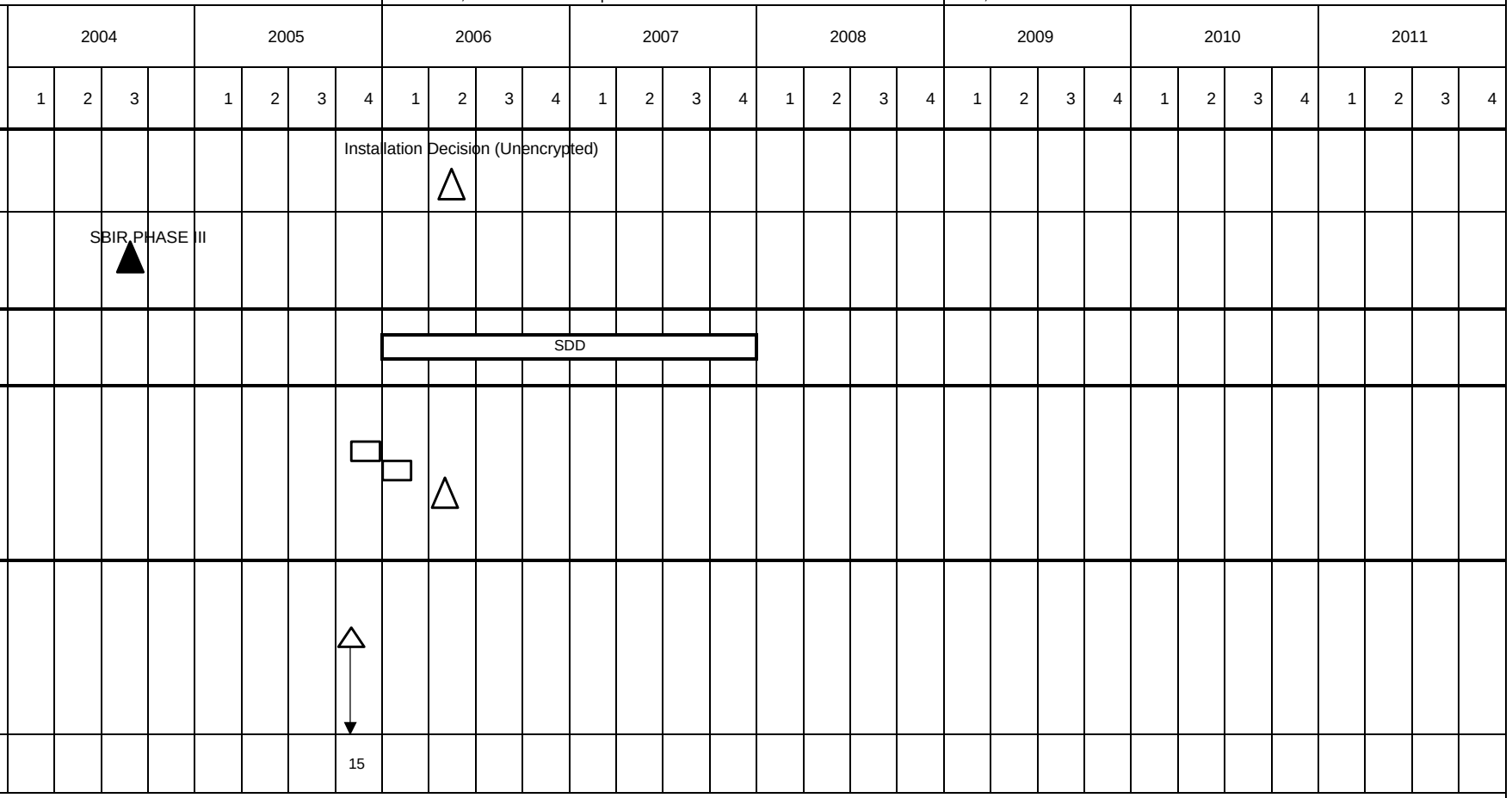
CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

AWICS

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



* Army will DT Secure Transmission Solution.

** First Article units will support DT-B/C efforts.

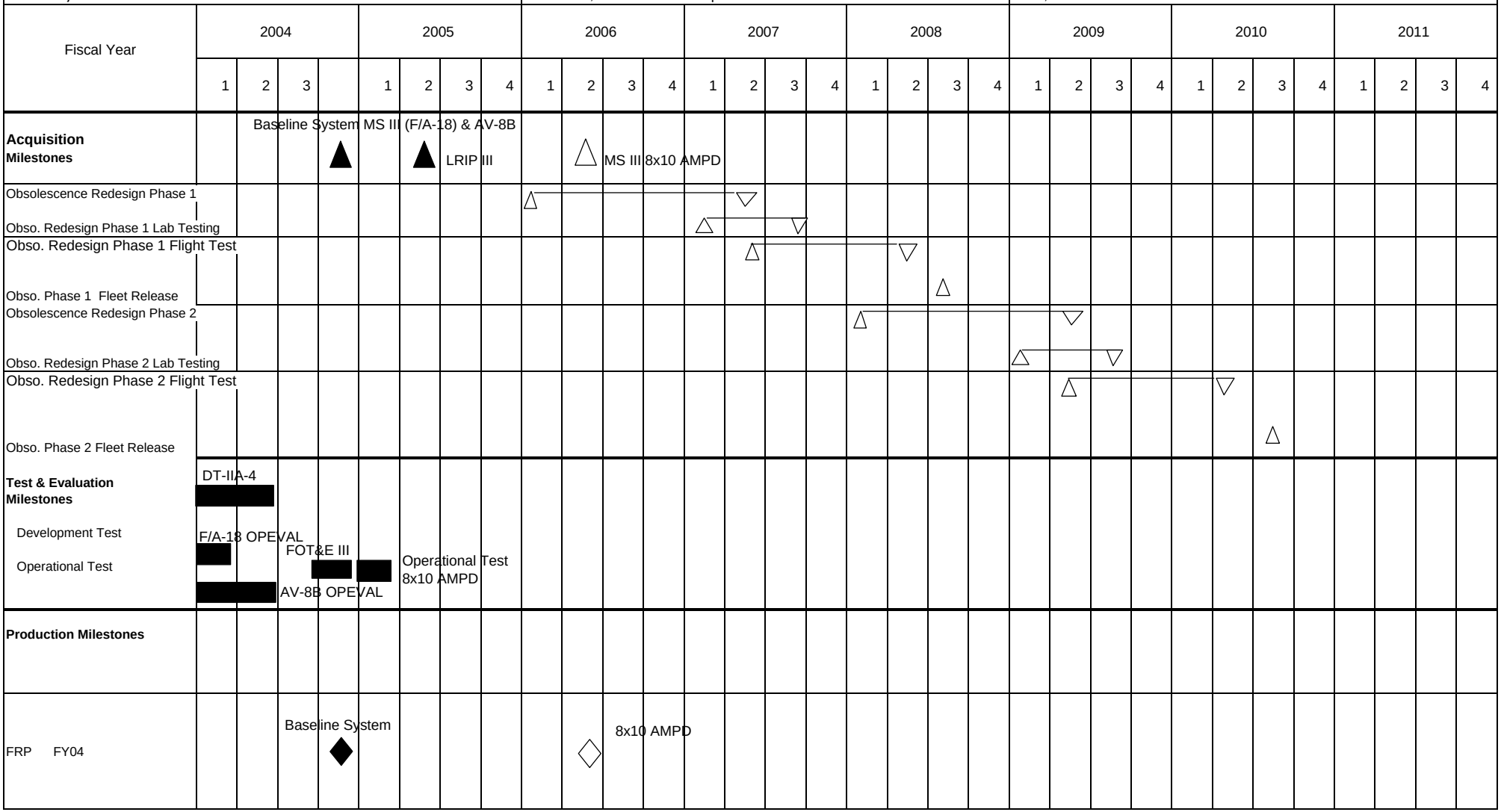
CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail **AWICS**						DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME 0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Contract Award - SBIR Phase III	3Q								
First Articles		4Q							
Developmental Testing (DT-B)		4Q							
Developmental Testing (DT-C)									
Installation Decision (Unencrypted)			2Q						
Secure Transmission (COMSEC SDD)			1Q-4Q	1Q-4Q					
DT Report			2Q						
Deliveries		4Q							

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile — **AMC&D** — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail

AMC&D

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	0572, JT SERV/NV STD AVION CP/SB

Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Operational Evaluation (OPEVAL) AV-8B	1Q-2Q							
MSIII (AV-8B)	4Q							
Operational Evaluation (OPEVAL) F/A-18E/F	1Q							
Developmental Testing (DT-IIA-4) F/A-18E/F	1Q-2Q							
MSIII (F/A-18E/F)	4Q							
FOT&E III	3Q-4Q							
FRP	4Q							
Operational Testing 8x10 AMPD	4Q	1Q						
LRIP III		2Q						
MS III 8x10 AMPD			2Q					
FRP 8x10 AMPD			2Q					
Obsolescence Redesign Phase 1			1Q-4Q	1Q-2Q				
Obsolescence Redesign Phase 1 Lab Testing				1Q-3Q				
Obsolescence Redesign Phase 1 Flight Test				2Q-4Q	1Q-2Q			
Obsolescence Redesign Phase 1 Fleet Release					3Q			
Obsolescence Redesign Phase 2					1Q-4Q	1Q-2Q		
Obsolescence Redesign Phase 2 Lab Testing						1Q-3Q		
Obsolescence Redesign Phase 2 Flight Test						2Q-4Q	1Q-2Q	
Obsolescence Redesign Phase 2 Fleet Release							3Q	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**5.368**	**1.345**	**1.939**	**1.993**	**2.022**	**2.039**	**1.985**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the DOD and Joint Services Metrology Research and Development program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	0604215N Standards Development	PROJECT NUMBER AND NAME S1857, Calibration Standards

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost - S1857C Calibration Standa	**5.368**		
RDT&E Articles Quantity			

FY 2005 Plan: (U) ($ .349) Complete 3 calibration standards (hardware) in support of chemical biological sensors, radar cross section measurements, and reduced crew size initiatives.
(U) ($ .901) Continue development of 4 standards to support missile guidance systems, common metrology calibration, eye safe laser target designators and rangefinders (1.5 µm), and reduce crew size.
(U) ($- 0.082) BEGIN NO NEW STANDARDS DEVELOPMENT DUE TO SUBSTANTIALLY REDUCED R&D LINE AND DECLINING FUNDING LEVELS.
(U) ($4.200) CONGRESSIONAL Add Navy/Marine Corps advanced measurement standards R&D (Note only for the development of advances measurement standards and metrology systems to support the Navy and Marine Corps testing needs).

	FY 05	**FY 06**	FY 07
Accomplishments/Effort/Subtotal Cost S1857		**1.345**	
RDT&E Articles Quantity			

FY 2006 Plan: (U) ($ 1.345) Complete 4 calibration standards (hardware) in support of missile guidance systems, reduce crew size initiatives, and laser target designators systems, and increasing shipboard calibration support.

CLASSIFICATION:		
EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	0604215N Standards Development	PROJECT NUMBER AND NAME S1857, Calibration Standards

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost S1857			**1.939**
RDT&E Articles Quantity			

FY 2007 Plan: (U) ($ .234) Complete 1 calibration standard (hardware) in support of electrical calibration standards.
(U) ($0) S1857 No Continued standards development.
(U) ($ 1.405) Begin development of 6 new calibration standards (hardware) in support of chemical biological detection systems, reduce crew size initiatives, and shipboard communication systems.
(U) ($.300) Commence development of standards for wireless miniature electrical mechanical sensors (MEMS)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	S1857, Calibration Standards

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Controls)	5.476	1.365	1.658
Current President's Budget	5.368	1.345	1.939
Total Adjustments	-0.108	-0.020	0.281
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.110	-0.014	
Congressional Increases			
Economic Assumptions	0.001	-0.006	0.011
Miscellaneous Adjustments	0.001		0.270
Subtotal	-0.108	-0.020	0.281

Schedule:

Not applicable

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604215N Standards Development	S1857, Calibration Standards	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY:

Not Applicable

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	S1857, Calibration Standards

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WX	NSWC, Corona Division		5.344		1.017		1.939			8.300	
Ancillary Hardware Development												
Component Development												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development				5.344		1.017		1.939			8.300	

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	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	S1857, Calibration Standards

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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 Eng Supt				0.012		0.120		0.000			0.132	
Government Eng Supt				0.011		0.208		0.000			0.219	
Program Management Support												
Travel				0.001		0.000		0.000			0.001	
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.024		0.328		0.000		0.000	0.352	
Remarks:												
Total Cost			0.000	5.368		1.345		1.939		0.000	8.652	
Remarks:												

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 2311, WASP	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
A2311 WASP	10.574	10.911	11.357	11.981	12.578	13.147	13.733
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 2311, Stores Planning and Weaponeering Module: The naval Aircraft Weaponeering Components (NAWC) project, now referred to as the Weaponeering and Stores Planning (WASP) components, are integrated software products that allow pilots to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage, eliminiate weapons delivery solutions that will violate aircraft T/M/S/ specific safetly-of-flight envelopes, and perform detailed weapons employment planning. WASP is approved by N78 as a permanent flight clearance system for the F/A-18 A,A+,B,C,D and D(RC) aircraft, and for all future aircraft T/M/S in the Joint Mission Planning System (JMPS). As a flight clearance system, WASP components will alert pilots if their planned weapon release conditions will result in bomb-to-bomb collisions, bomb-to-aircraft collisions, aircraft overstress, or excessive risk of aircraft loss/domage in the event of fuze early bursts. Weaponeering capabilities are fundamental requirements for Interdiction, Armed RECCE and Close Air Support mission planning, therefore WASP product availability is critical to successful Post-Joint Mission Planning System (JMPS) Combat 1 OT&E. The WASP product encompasses a multitude of GOTS/COTS software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators, etc.), which are delivered as new targets are identified, emergent requirements for new aircraft T/M/S, stores and weapons are approved by N78, and new flight clearances and flight restrictions issued by NAVAIRSYSCOM. WASP components are being delivered on an annual basis starting with v1.0 in December FY03.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 2311, WASP

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.333	.386	1.039	
RDT&E Articles Qty				

WASP Modeling and Simulation Support - Acquire GFI safe escape and guided weapon components for integration into WASP. Acquire aircraft performance models and unguided weapon flyout models for integration into WASP. Develop updates to the NAVAIR Aircraft Target Area Maneuvers Simulation (ATAMS), Common Unguided Weapons Computational Engine (CUWCE), Safe Escape Automation Layer (SEAL), and the Probability of Aircraft Tactical Hazard (PATH) models. Develop updates to the joint owned Guided Weapons Trajectory Software (GWTS).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.570	3.190	3.306	
RDT&E Articles Qty				

Test and Evaluation - Provide test and evaluation for unit and system level testing; functional qualification testing; safety of flight certification testing; integration and standards compliance testing for WASP versions (WASP V1.1, V2.0, V2.1 and WASP V3.0). Provide T&E support for guided weapons and Joint Munitions Effectiveness Manual (JMEME) accreditation.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.807	.889	.889	
RDT&E Articles Qty				

Systems Engineering - Provide Systems Engineering support to the Weaponeering and Stores Planning (WASP) development effort. Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing, safe escape for application to WASP. Provide for WASP Help Desk Support at SPAWAR. Provide government Joint Munitions Effectiveness Manual (JMEM) engineering support (JMEM Subject Matter Experts) for integration for new JMEM capabilites into WASP. Provide analysis of new requirements, allocation of requirements, design oversight, and life cycle management of the WASP program.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 2311, WASP	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.232	.243	.256	
RDT&E Articles Qty				

Compliance with external directives - Provide Weaponeering and Stores Planning (WASP) components with the means to ensure all software (to include internally developed software, externally developed GOTS components and COTS products) complies with DoN and DoD Software mandates and directives. These include ISNS (IT-21), DITSCAP C&A, NMCI, DII COE, D-30 and FAM. All FLeet released software must comply with DoN and DoD software directives or will not be allowed to run on ship LANs or NMCI.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.103	4.703	4.839	
RDT&E Articles Qty				

Software Development - Develop new software for WASP components V1.1, V2.0, V2.1 and V3.0 to support additions of F/A-18EF, AV-8B and JSF. Integrate WASP components into the Joint Mission Planning System (JMPS). Develop new aircraft configuration, aircraft loading, weapon optimization, store release and delivery planning components for F/A-18 A-F, AV-8B and JSF. Provide NMCI seats and software licenses for development. Provide CM, Sys Admin, QA, documentation, metrics and Risk Management for WASP. Integrate new JMEM methodologies into WASP; Bridge Analysis System (BAS), Building Analysis Module (BAM). Integrate new guided weapon (GBU) detection and flyout models into WASP. Integrate WASP with JSOW/JDAM/SLAM-ER mission planning systems.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.529	1.500	1.028	
RDT&E Articles Qty				

Program Management - In FY05 Performed Weaponeering and Stores Planning (WASP) project management, which includes contracting support (providing contract administration, preparing contract package for award) and providing financial support (accept, obligate, commit, and track funding). Provided travel for WASP Government personnel. Provided on-site contractor occupancy fees, fee for service/direct contract processing fees, SBIR. Continue performing project management support for this program throughout the FYDP.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604215N, STANDARDS DEVELOPMENT**	2311, WASP

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	9.349	11.077	13.450
Current President's Budget:	10.574	10.911	11.357
Total Adjustments	1.225	-0.166	-2.093
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.008	-0.116	
Congressional Increases	0.002		
Economic Assumptions		-0.050	0.054
Miscellaneous Adjustments	1.231		-2.147
Subtotal	1.225	-0.166	-2.093

Schedule: V1.1 delivered 1Q FY05 and V2.0 to field in 3Q FY06. Slip in WASP V2 release from 1Q 2006 to 3Q 2006:
Late GFI (safe Escape comopnent) delivery will delay delivery of WASP V2 components until 3Q FY06. WASP components must then be integrated into JMPS 1.2.3 framework.
WASP V2 release must also align with JMPS F/A-18 H-4E MPE release. JMPS H-4E MPE scheduled to enter DT/OT in Jan 2007.
V2.0 experiencing a 6 month delay in fielding due to late delivery of GFI Safe Escape components critical to the performance of the F/A-18 E/F platform.

Technical: Not applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 2311, WASP	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 287600 TAC A/C Mission Planning System (OPN)	9.035	7.753	8.316	8.648	8.842	9.006	9.151	Continuing	Continuing
PE2806F Air Force Mission Support System	136.701	143.154	196.749	148.541	96.314	Continuing	Continuing	Continuing	Continuing

E. ACQUISITION STRATEGY: Weaponeering and Stores Planning (WASP) products, delivered annually, are developed in-house by NAVAIR (NAWCAD and NAWCWD) engineers. NAWCAD provides expertise in areas of management, sytems engineering, software engineering and aircraft safety-of-flight (air-vehicle stores compatibility, weapons separation, aircraft aerodynamic flutter, ground/flight loads, authorized fuze arm times, aircraft safe escape). NAWCAD also provides weapons separation test pilots as WASP operational advisors. NAWCWD provides expertise in areas of guided weapons employment and weapons effects against targets. The various government teams (software development, functional qualification testing and certification/accreditation test) are supplemented with contract labor procured predominately through fixed-price GSA or BPA contracts.

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604215N, STANDARDS DEVELOPMENT				PROJECT NUMBER AND NAME 2311, WASP							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
PRODUCT DEVELOPMENT	WX	NAWCAD, PATUXENT RIVER MD	13.476	1.301	11/30/2004	1.532	11/30/2005	1.596	11/30/2006	Continuing	Continuing	
SYSTEMS ENG	WX	NAWCAD, PATUXENT RIVER MD	5.484	.807	11/30/2004	.889	11/30/2005	.889	11/30/2006	Continuing	Continuing	
VARIOUS/CONTRACTS	VARIOUS	VARIOUS	15.314	2.782	11/30/2004	3.171	11/30/2005	3.243	11/30/2006	Continuing	Continuing	
SUBTOTAL PRODUCT DEVELOPMENT			34.274	4.890		5.592		5.728		Continuing	Continuing	
Remarks:												
SUPPORT												
SUBTOTAL SUPPORT												
Remarks:												
TEST & EVALUATION												
TEST & EVALUATION	WX	NAWCAD, PATUXENT RIVER MD	7.034	2.570	11/30/2004	3.190	11/30/2005	3.306	11/30/2006	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			7.034	2.570		3.190		3.306		Continuing	Continuing	
Remarks:												
MANAGEMENT												
GOVERNMENT ENG SUP	WR	NAWCAD, PATUXENT RIVER MD	1.167	.232	11/30/2004	.243	11/30/2005	.256	11/30/2006	Continuing	Continuing	
GOVERNMENT ENG SUP	WX	NAWCWD, CHINA LAKE CA	.627	.333	11/30/2004	.386	11/30/2005	1.039	11/30/2006	Continuing	Continuing	
MANAGEMENT SUP	WX	NAWCAD, PATUXENT RIVER MD	2.561	2.529	11/30/2004	1.460	11/30/2005	.988	11/30/2006	Continuing	Continuing	
TRAVEL	TO	NAVAIRHQ, PATUXENT RIVER MD	1.028	.020	Various	.040	Various	.040	Various	Continuing	Continuing	
SUBTOTAL MANAGEMENT			5.383	3.114		2.129		2.323		Continuing	Continuing	
Remarks:												
Total Cost			46.691	10.574		10.911		11.357		Continuing	Continuing	
Remarks:												

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	2311 Navy Stores Planning and Weaponeering Module

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3		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																												
WASP V.1 Release (F/A-18A/B/C/D)																												
WASP V.1.1 Release (F/A-18A/B/C/D)	△																											
WASP V.2 Release (F/A-18A/B/C/D/E/F)/JMPS Integration							△																					
WASP V2.1 Release (F/A18A/B/C/D/E/F)											△																	
WASP V3 Release (F/A18A/B/C/D/E/F & AV-8B)																△												
WASP V3.1 Release (F/A18A/B/C/D/E/F & AV-8B)																			△									
WASP V4 Release (F/A18A/B/C/D/E/F, AV-8B, JSF)																									△			
Test & Evaluation Milestones																												
WASP V.1.1 Cert Test (F/A-18A/B/C/D)																												
WASP V.2 FQT & Cert Test (F/A-18A/B/C/D/E/F)					▭	▭																						
WASP V2.1 FQT & Cert Test (F/A-18A/B/C/D/E/F)									▭	▭																		
WASP V3 FQT & Cert Test (F/A-18A/B/C/D/E/F)													▭	▭														
WASP V3.1 FQT & Cert Test (F/A-18A/B/C/D/E/F & AV-8B)																	▭	▭										
WASP V4 FQT & Cert Test (F/A-18A/B/C/D/E/F, AV-8B, JSF)																					▭	▭						
Production Milestones																												
WASP V.1.1 Dev (F/A-18A/B/C/D)																												
WASP V.2 Development (F/A-18A/B/C/D/E/F)	▭	▭	▭	▭																								
WASP V2.1 Development (F/A-18A/B/C/D/E/F)				▭	▭	▭	▭																					
WASP V3 Development (F/A-18A/B/C/D/E/F)							▭	▭	▭	▭	▭	▭																
WASP V3.1 Development (F/A-18A/B/C/D/E/F & AV-8B)													▭	▭	▭	▭												
WASP V4 Development (F/A-18A/B/C/D/E/F, AV-8B, JSF)																	▭	▭	▭	▭	▭	▭	▭	▭				
Deliveries																												

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	**PROGRAM ELEMENT** **Standard Development**			PROJECT NUMBER AND NAME 2311 Navy Stores Planning and Weaponeering Module			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acquisition Milestones							
WASP V.1 Release (F/A-18A/B/C/D)							
WASP V.1.1 Release (F/A-18A/B/C/D)	1Q						
WASP V.2 Release (F/A-18A/B/C/D/E/F)JMPS Integration		3Q					
WASP V2.1 Release (F/A-18A/B/C/D/E/F)			3Q				
WASP V3 Release (F/A-18A/B/C/D/E/F & AV-8B)				4Q			
WASP V3.1 Release (F/A-18A/B/C/D/E/F & AV-8B)					3Q		
WASP V4 Release (F/A-18A/B/C/D/E/F,AV-8B, JSF)							1Q
Technical Evaluation (TECHEVAL)							
WASP V.1.1 Cert Test (F/A-18A/B/C/D)							
WASP V.2 FQT & Cert Test(F/A-18A/B/C/D/E/F)		1Q-2Q					
WASP V2.1 FQT & Cert Test(F/A-18A/B/C/D/E/F)			1Q-2Q				
WASP V3 FQT & Cert Test(F/A-18A/B/C/D/E/F & AV-8B))				2Q-3Q			
WASP V3.1 FQT & Cert Test(F/A-18A/B/C/D/E/F & AV-8B)					1Q-2Q		
WASP V4 FQT & Cert Test(F/A-18A/B/C/D/E/F,AV-8B, JSF)						3Q-4Q	
Production Milestones							
WASP v1.1 Dev (F/A-18A/B/C/D)							
WASP V.2 Dev (F/A-18A/B/C/D/E/F)	1Q-4Q						
WASP V2.1 Dev (F/A-18A/B/C/D/E/F)	4Q	1Q-4Q					
WASP V3 Dev (F/A-18A/B/C/D/E/F & AV-8B)		4Q	1Q-4Q	1Q			
WASP V3.1 Dev (F/A-18A/B/C/D/E/F & AV-8B)				1Q-4Q			
WASP V4 Dev (F/A-18A/B/C/D/E/F & AV-8B)					1Q-4Q	1Q-2Q	

R-1 SHOPPING LIST - Item No. 85

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604215N, STANDARDS DEVELOPMENT**	PROJECT NUMBER AND NAME 2312 COMMON HELICOPTERS	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
A2312 COMMON HELOS	.757	.750	.936	.953	.973	.995	1.016
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 2312, 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 analysis. The following type/model/series aircraft are supported by PE: AH1-W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R/S, and V-22. The developed common helicopter functionally 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604215N, STANDARDS DEVELOPMENT**	2312 COMMON HELICOPTERS

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.757	.750	.936
RDT&E Articles Qty			

Continue development of Common Helicopter functionality and implementation in PFPS, PFPS Version 4.0 and JMPS, JMPS Version 1.2.4 and 1.5.

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.759	0.761	0.945
Current President's Budget:	0.757	0.750	0.936
Total Adjustments	-0.002	-0.011	-0.009
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions		-0.008	
Congressional Increases			
Economic Assumptions		-0.003	0.004
Miscellaneous Adjustments	-0.002		-0.013
Subtotal	-0.002	-0.011	-0.009

Schedule: Not Applicable

Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604215N, STANDARDS DEVELOPMENT**	2312 COMMON HELICOPTERS

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 287600 TAC A/C Mission Planning System (OPN)	9.035	7.753	8.316	8.648	8.842	9.006	9.151	Continuing	Continuing
PE2806F Air Force Mission Support System	136.701	143.154	196.749	148.541	96.314	Continuing	Continuing	Continuing	Continuing

E. ACQUISITION STRATEGY:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development				PROJECT NUMBER AND NAME 9999, Congressional Adds			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			**8.200**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the DOD and Joint Services Metrology Research and Development program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

Project 9770N , AVITS: The principal functions of AVITS is to provide the military maintainer: the capability to configure multiple, programmable virtual instruments into a portable, light weight, single-standard, multiple protocol packaging scheme; a capability that provides an interface to distance support assistance and training applications; and a system that reduces total ownership costs within the military. In addition, AVITS shall provide: "plug-and-play" instrument functionality along with self-test and self-system/on-line verification (calibration); one control/display with multiple virtual control/display panels; an integrated test executive engine that allows for automated maintenance procedure applications; and the ability to collect/transmit test data in a format and language compatible with maintenance data management software currently in use by the military.

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Project 9771N, SCRAMscreen Display: New, innovative, conformal projection display screen technologies are now emerging that enhance optical performance, promise improved supportability, and reduce development costs for airborne displays. Such displays are easily size-scalable and exhibit customizable viewing angles, selective ambient light rejection, and extremely high contrast ratios. They also hold the potential for reduced weight, lower unit cost, and increased reliability. A new and innovative means to provide illumination to the projection screen is required for the military to take advantage of potential performance improvements. Current commercially based light engines will not meet the necessary optical performance requirements while operating in the military environment, therefore a solid-state light engine is required. At present, such an approach does not exist within industry. A solid state light engine, in concert with the new conformal display screen technology, provides an innovative approach to improving the state of the art for military displays.

Current AMLCD and CRT technology based displays have cost, optical performance, reliability, and weight shortcomings that reduce mission effectiveness in airborne applications while existing projection based displays have yet to provide a simple but effective solution. A more innovative light engine is needed to fully utilize projection technology's enhanced features. Advanced projection display technology using LED solid-state lighting can mitigate the limitations of other approaches while meeting the airborne display requirements for a variety of different applications.

The inherent conformal scalability of this technology will significantly reduce the development costs for different size displays. Low material costs will reduce maintenance costs. Common display solutions will also significantly reduce the logistics infrastructure requirements.

CLASSIFICATION:		
EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	9999, Congressional Adds

CONGRESSIONAL PLUS-UPS:

1857	FY 05	FY 06	FY 07
Identify Project Number: S1857 Calibration Satandarc			
Title of Congressional Add		2.000	

Project S1857, Calibration Standards: FY 2006 Plan: (U) ($ 2.000) S1857C Commence development of Navy-wide program to develop calibration standards (hardware) in support of Navy Weapons systems, ground and air, throughout the Fleet. Verify the military requirement performance of all test systems used to validate the operation of Navy Weapon Systems with the National Institute of Standards and Technology calibration standards.

9770	FY 05	FY 06	FY 07
Identify Project Number: 9770N - AVITS			
Title of Congressional Add		1.700	

Project 9770N , AVITS: FY 2006 Plan: (U) ($ 1.700) 9770N Commence development to provide the military maintainer: the capability to configure multiple, programmable virtual instruments into a portable, light weight, single-standard, multiple protocol packaging scheme; a capability that will provide an interface to distance support assistance and training applications; and a system that reduces total ownership costs within the military.

CLASSIFICATION:		
EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	9999, Congressional Adds

CONGRESSIONAL PLUS-UPS:

9771N	FY 05	FY 06	FY 07
Accomplishments / Effort / Sub-total Cost		4.500	
RDT&E Articles Qty			

Project 9771N, SCRAM Screen Display: FY 2006 Plan: (U) 9771N New, innovative, conformal projection display screen technologies are now emerging that enhances optical performance, promise improved supportability, and reduce development costs for airborne displays. Such displays are easily size-scalable and exhibit customizable viewing angles, selective ambient light rejection, and extremely high contrast ratios. They also hold the potential for reduced weight, lower unit cost, and increased reliability. A new and innovative means to provide illumination to the projection screen is required for the military to take advantage of potential performance improvements. Current commercially based light engines will not meet the necessary optical performance requirements while operating in the military environment, therefore a solid-state light engine is required. At present, such an approach does not exist within industry. A solid state light engine, in concert with the new conformal display screen technology, provides an innovative approach to improving the state of the art for military displays.

Current AMLCD and CRT technology based displays have cost, optical performance, reliability, and weight shortcomings that reduce mission effectiveness in airborne applications while existing projection based displays have yet to provide a simple but effective solution. A more innovative light engine is needed to fully utilize projection technology's enhanced features. Advanced projection display technology using LED solid-state lighting can mitigate the limitations of other approaches while meeting the airborne display requirements for a variety of different applications.

The inherent conformal scalability of this technology will significantly reduce the development costs for different size displays. Low material costs will reduce maintenance costs. Common display solutions will also significantly reduce the logistics infrastructure requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N Standards Development	9999, Congressional Adds

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Controls)	0.000	0.000	0.000
Current President's Budget:	0.000	8.200	0.000
Total Adjustments	0.000	8.200	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		8.200	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	0.000	8.200	0.000

Schedule:

Not applicable

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604215N Standards Development	9999, Congressional Adds	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY:

Not Applicable

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604216N, MULTI-MISSION HELICOPTER UPGRADE		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	80.105	49.122	19.259	14.483	.542	.845	.227	
1707 MH-60R DEVELOPMENT	76.866	47.422	19.259	14.483	.542	.845	.227	
9548 AQS-22 AIRBORNE LOW-FREQUENCY SONAR	1.594							
9549 MULTI-MISSION HELICOPTER UPGRADE DEV	1.645							
9999 CONGRESSIONAL ADD		1.700						

(U) 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.

1707 - The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in 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) which 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. Integration of Common Data Link (CDL) will be incorporated into the MH-60R as part of Block-I.

9548 - The MH-60R Multi-Mission Helicopter AQS-22 Airborne Low Frequency Sonar(ALFS), (Congressional Add). ALFS is the primary Undersea Warfare (USW) sensor of the Multi-Mission Helicopter.

9549 - The MH-60R Multi-Mission Helicopter Legacy Subsystems Improvement, (Congressional Add).

9999 - Congressional Add.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 1707, MH-60R DEVELOPMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
1707 MH-60R DEVELOPMENT	76.866	47.422	19.259	14.483	.542	.845	.227
RDT&E Articles Qty							

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.

1707 - 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. Integration of Common Data Link (CDL) , will be incorporated into the MH-60R as part of Block-I.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 1707, MH-60R DEVELOPMENT	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	15.918	8.032	11.041	
RDT&E Articles Qty				

MH-60R Mission Avionics testing. Avionics Mission Block I Upgrade Testing and Evaluation efforts. Operational Test and Evaluation, Developmental Testing, Live Fire Testing, Testing for Manned Flight Simulator and Acoustics Processor development, integration and testing.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.798	2.787	1.459	
RDT&E Articles Qty				

Engineering specialists, integrated logistics support, Government Furnished Equipment (GFE), Contractor Services Support, System Engineering, Program Management, Travel as required to support the MH-60R development program, test activities (TECHEVAL), and Small Business Innovation Research (SBIR) as required.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	9.016	2.500		
RDT&E Articles Qty				

Avionics Block-1 Upgrade for the Common Data Link (CDL), reversability between C-Band and Ku Band upgrades.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.555	6.440	1.602	
RDT&E Articles Qty				

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

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	42.579	27.663	5.157	
RDT&E Articles Qty				

Avionics hardware and software development and integration to include: 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604216N, MULTI-MISSION HELICOPTER UPGRADE**	1707, MH-60R DEVELOPMENT

C. PROGRAM CHANGE SUMMARY

Funding:		FY 2005	FY 2006	FY 2007
Previous President's Budget:		78.005	48.144	18.920
Current President's Budget:		76.866	47.422	19.259
Total Adjustments		-1.139	-0.722	0.339
Summary of Adjustments				
Congressional Reductions				
Congressional Rescissions				
Congressional Undistributed Reductions		-1.467	-0.503	
Congressional Increases		0.016		
Economic Assumptions			-0.219	0.532
Miscellaneous Adjustments		0.312		-0.193
	Subtotal	-1.139	-0.722	0.339

*Numbers may not add due to rounding

Technical: Not applicable

Schedule: Not applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 1707, MH-60R DEVELOPMENT	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
									0.000
APN-1 BLI-018200	359.386	551.006	915.742	951.064	1,144.480	1,198.116	1,205.622	2,760.793	9,086.209
APN-6 Initial Spares BLI: 0605-10	58.979	77.069	22.576	1.078	1.795	0.507	0.535		162.539
APN-5 Aircraft Modifications OSIP 001-06		4.375	4.932	3.326	3.925	2.983	3.040	16.575	39.156

Related RDT&E
0604507N Enhanced Modular Signal Processor
0604212N ASW & Other Helo Development LAMPS MK-IIData Link
0604261N Acoustics Search Sensors
0604216N AN/SQ-22 Airborne Low Frequency Sonar (ALFS) H9548
0604216N Multi-Mission Helicopter Legacy Sub-System, H9459

E. ACQUISITION STRATEGY: 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 and Initial Operating Capability (IOC) in FY2005. The program includes an evolutionary acquisition Block-I Upgrade effort which began in FY2004.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604216N, MULTI-MISSION HELICOPTER UPGRADE				PROJECT NUMBER AND NAME 1707, MH-60R DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development, Airframe (SAC)	SS-CPAF	SIKORSKY, STRATFORD, CT	63.415	4.555	10/6/2004	6.440	2/6/2006	1.602	2/6/2007		76.012	76.012
Primary Hdw Development, Avionics (LMSI)	SS-CPAF	LOCKHEED MARTIN, OWEGO, NY	611.061	42.579	12/30/2004	27.663	2/6/2006	5.157	2/6/2007		686.460	686.460
Primary Hdw Development, Avionics TCDL	845 OTA	NSWC, PANAMA CITY FL		9.016	10/30/2004	2.500					11.516	
All Product Cost from FY90-04		VARIOUS	153.316								153.316	
SUBTOTAL PRODUCT DEVELOPMENT			827.792	56.150		36.603		6.759			927.304	
Remarks: Of award fees in past award fee periods, Lockheed Martin was awarded 63% and Sikorsky Aircraft Corporation was awarded 79%.												
SUPPORT												
Government Eng Technical Services	WX	NAWCAD, PATUXENT RIVER MD	.030							3.945	3.975	
Government Eng Technical Services	WX	OASN (FM&C) FMA, WASH DC		.250	11/30/2004						.250	
All Product Cost from FY90-04		VARIOUS	123.014								123.014	
SUBTOTAL SUPPORT			123.044	.250						3.945	127.239	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	72.346	12.056	11/30/2004	7.009	11/30/2005	11.041	11/30/2006	12.152	114.604	
Dev Test & Eval	WX	NUWC DET, NEWPORT RI	.388	.207	11/30/2004	.523	11/30/2005				1.118	
Live Fire Test & Eval	WX	NAWCWD, CHINA LAKE CA	.312	.025	11/30/2004						.337	
Oper Test & Eval	WX	NAVAIR PAC FLT, SAN DIEGO CA		.450	11/30/2004						.450	
Oper Test & Eval	WX	COMOPTEVFOR, NORFOLK VA	1.244	3.180	11/30/2004	.500	11/30/2005				4.924	
All Product Cost from FY90-04		VARIOUS	13.143								13.143	
SUBTOTAL TEST & EVALUATION			87.432	15.918		8.032		11.041		12.152	134.575	
Remarks:												
MANAGEMENT												
Contractor Engr Sup - ETS (NON-FFRDC)	VARIOUS	NAWCAD, PATUXENT RIVER MD	1.575	2.705	12/30/2004	1.627	12/30/2005				5.907	
Contractor Engr Sup - ETS (NON-FFRDC)	VARIOUS	VARIOUS	12.620	.903	VARIOUS	.110	VARIOUS	.579	VARIOUS		14.212	
Program Mgmt Sup - MSS (NON-FFRDC)	RX	NAWCAD, PATUXENT RIVER MD				.320	10/30/2005	.200	10/30/2006		.520	
Travel	TO	NAVAIRHQ, PATUXENT RIVER MD	1.770	.940	10/30/2004	.730	10/1/2005	.680	10/30/2006		4.120	
All Product Cost from FY90-04		VARIOUS	11.695								11.695	
SUBTOTAL MANAGEMENT			27.661	4.548		2.787		1.459			36.455	
Remarks:												
Total Cost			1,065.929	76.866		47.422		19.259		16.097	1,225.574	

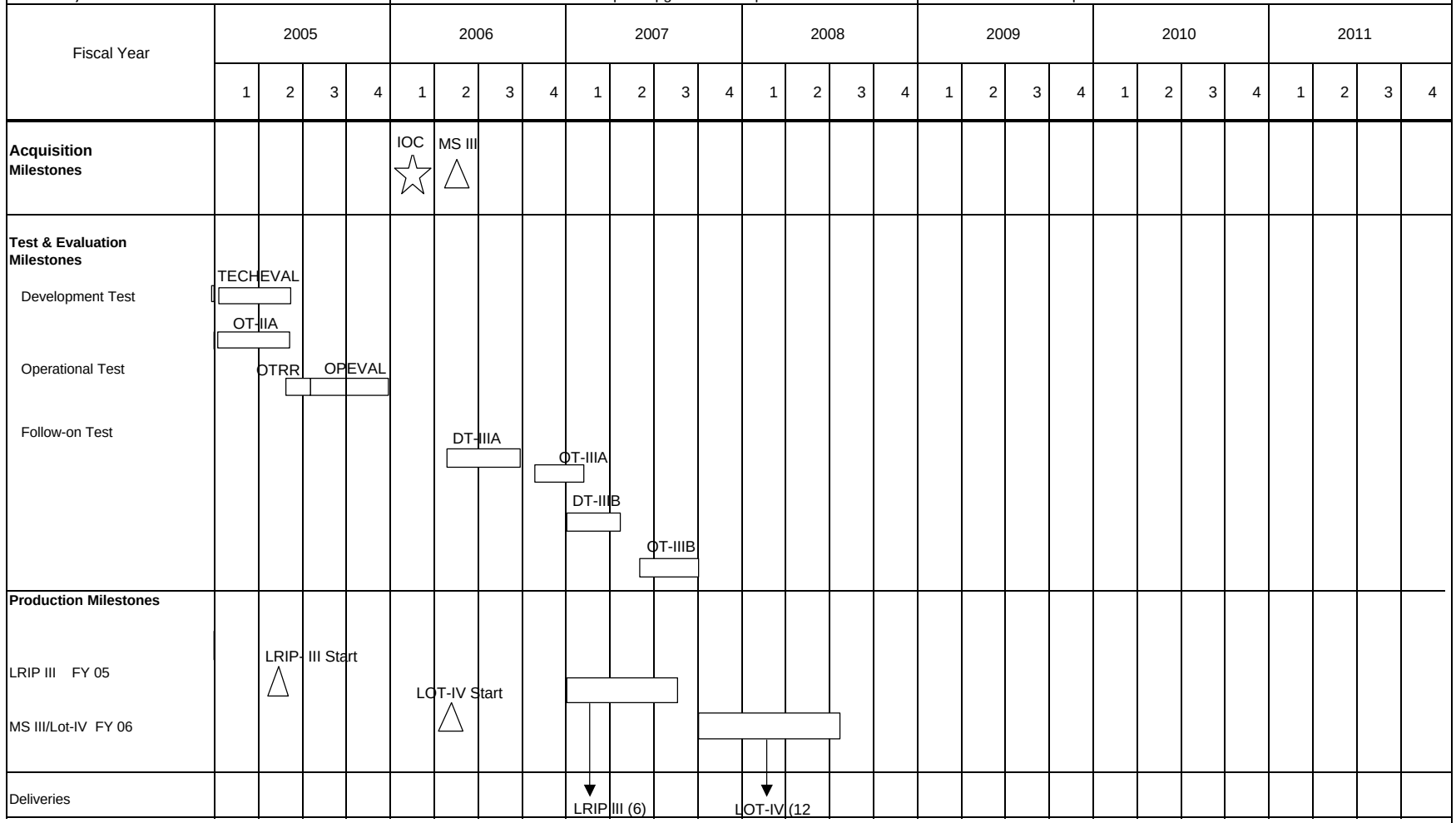
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604216N Multi-Mission Helicopter Upgrade Development

PROJECT NUMBER AND NAME: 1707 MH-60R Development



R-1 SHOPPING LIST - Item No. 87

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N BA-5**				PROJECT NUMBER AND NAME 1707 MH-60R DEVELOPMENT			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OTIIA	1Q - 2Q						
TECHEVAL	1Q - 2Q						
OTRR (OPEVAL)	2Q - 3Q						
OPEVAL	3Q - 4Q						
IOC		1Q					
Milestone III (MS-III)		2Q					
Block-I							
Block 1 Upgrade DTIIIA		2Q - 3Q					
Block 1 Upgrade OTIIIA		4Q	1Q				
Block 1 Upgrade DTIIIB			1Q - 2Q				
Block 1 Upgrade OTIIIB			2Q -3Q				
Production Milestone							
LRIP-III FY05	2Q						
Lot-IV FY06		2Q					

R-1 SHOPPING LIST - Item No. 87

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**						PROJECT NUMBER AND NAME 9548, AQS-22 AIRBORNE LOW-FREQUENCY SONAR (ALFS)
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9548 AQS-22 AIRBORNE LOW-FREQUENCY SONAR	1.594						
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The An/AQS-22 Airborne Low Frequency Sonar (ALFS) is the primary Undersea Warfare (USW) sensor of the MH60R Multi-Mission Helicopter. Congressional Add.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9548, AQS-22 AIRBORNE LOW-FREQUENCY SONAR (ALFS)	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.594			
RDT&E Articles Qty				

H9548 AQS-22 Airborne Low Frequency Sonar (ALFS). Provide resources required to establish a U.S. based production capability for the ALFS wet end subsystem. Acquire, test and validate a U.S. based manufacture of the Reeling Machine Control Unit (RMUC) and the Reeling Machine Interface Unit (RMIU) for the ALFS system.

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.632		

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0604216N, MULTI-MISSION HELICOPTER UPGRADE**		9548, AQS-22 AIRBORNE LOW-FREQUENCY SONAR (ALFS)

Current President's Budget:	1.594	0.000	0.000
Total Adjustments	-0.038	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.038		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.038	0.000	0.000

Schedule:

Not applicable.

Technical:

Not applicable.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-1 BLI-018200	359.386	551.006	915.742	951.064	1,144.480	1,198.116	1,205.622	2,760.793	9,086.209
APN-6 Initial Spares BLI: 0605-10	58.979	77.069	22.576	1.078	1.795	0.507	0.535		162.539
APN-5 Aircraft Modifications OSIP 001-06		4.375	4.932	3.326	3.925	2.983	3.040	16.575	39.156

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /**	**BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9548, AQS-22 AIRBORNE LOW-FREQUENCY SONAR (ALFS)

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

E. ACQUISITION STRATEGY:

Establish a U.S. based production capability for the ALFS wet end subsystem

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**						PROJECT NUMBER AND NAME 9549, MULTI-MISSION HELICOPTER UPGRADE DEV	
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9549 MULTI-MISSION HELICOPTER UPGRADE DEV	1.645							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Legacy Subsystems Improvement is for the research, design, and development of improved subsystems on the MH-60R Multi-Mission Helicopter. Congressional Add.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9549, MULTI-MISSION HELICOPTER UPGRADE DEV

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.645			
RDT&E Articles Qty				

Multi-Mission Helicopter Legacy Subsystems Improvement to include: research, design and development of improved subsystems on the MH-60R program. Requirements include removal of flotation bag provisions and introduction of center console manufacturing innovations.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9549, MULTI-MISSION HELICOPTER UPGRADE DEV	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.684	0.000	0.000
Current President's Budget:	1.645	0.000	0.000
Total Adjustments	-0.039	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.039		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.039	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9549, MULTI-MISSION HELICOPTER UPGRADE DEV	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
APN-1 BLI-018200	359.386	551.006	915.742	951.064	1,144.480	1,198.116	1,205.622	2,760.793	9,086.209
APN-6 Initial Spares BLI: 0605-10	58.979	77.069	22.576	1.078	1.795	0.507	0.535		162.539
APN-5 Aircraft Modifications OSIP 001-06		4.375	4.932	3.326	3.925	2.983	3.040	16.575	39.156

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

E. ACQUISITION STRATEGY:

Multi-Mission Helicopter Legacy Subsystems Improvement to include: research, design and development of improved subsystems on the MH-60R program. Requirements include removal of flotation bag provisions and introduction of center console manufacturing innovations.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**						PROJECT NUMBER AND NAME 9999, Congressional Add	
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9549 MULTI-MISSION HELICOPTER UPGRADE DEV		1.700						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

9999 - Congressional Add: The Legacy Subsystems Improvement is for the research, design, and development of improved subsystems on the MH-60R Multi-Mission Helicopter. Congressional Add.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9999, Congressional Add	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost				
9549 Multi-mission Helicopter Legacy Subsystem Improve		1.700		

Multi-Mission Helicopter Legacy Subsystems Improvement to include: research, design and development of improved subsystems on the MH-60R program. Requirements include removal of flotation bag provisions and introduction of center console manufacturing innovations.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9999, Congressional Add

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.000	0.000	0.000
Current President's Budget:	0.000	1.700	0.000
Total Adjustments	0.000	1.700	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		1.700	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	0.000	1.700	0.000

Schedule:

Not applicable

Technical:

Not applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604216N, MULTI-MISSION HELICOPTER UPGRADE**	PROJECT NUMBER AND NAME 9999, Congressional Add	

D. OTHER PROGRAM FUNDING SUMMARY:	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
APN-1 BLI-018200	359.386	551.006	915.742	951.064	1,144.480	1,198.116	1,205.622	2,760.793	9,086.209
APN-6 Initial Spares BLI: 0605-10	58.979	77.069	22.576	1.078	1.795	0.507	0.535		162.539
APN-5 Aircraft Modifications OSIP 001-06		4.375	4.932	3.326	3.925	2.983	3.040	16.575	39.156

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

E. ACQUISITION STRATEGY:

Multi-Mission Helicopter Legacy Subsystems Improvement to include: research, design and development of improved subsystems on the MH-60R program. Requirements include removal of flotation bag provisions and introduction of center console manufacturing innovations.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**				R-1 ITEM NOMENCLATURE 0604218N Air/Ocean Equipment Engineering				
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	**4.325**	**4.491**	**5.578**	**5.731**	**5.830**	**5.837**	**5.961**	
2345 Fleet METOC Equipment	3.038	3.127	3.967	4.088	4.165	4.176	4.265	
2346 METOC Sensor Engineering	1.287	1.364	1.611	1.643	1.665	1.661	1.696	
Quantity of RDT&E Articles								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Air/Ocean Equipment Engineering (AOEE) Program Element provides future mission capabilities to support Naval combat forces. This program engineers and developmentally tests organic and remote sensors, communication interfaces, and processing and display devices. These equipments are engineered to measure, ingest, store, process, distribute and display conditions of the physical environment that are essential to the optimum employment and performance of Naval warfare systems. AOEE also engineers capabilities for shipboard and shore-based tactical systems. A major thrust area for the AOEE program is to provide the engineering development of specialized equipment and measurement capabilities that are intended to monitor specific conditions of the physical environment in hostile and remote areas. With such capabilities, the war fighters' situational awareness of the operational effects of the physical environment are made more certain.

This budget reflects changes in investment line description beginning in FY07. This change supports acquisition and development investment lines that support the vision, operations concept, and capability requirements. Changes consolidate and better define RDT&E efforts as well as better reflect the new Commander Naval Meteorological and Oceanographic Command (CNMOC) reorganization.

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

R-1 SHOPPING LIST - Item No. 88

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5**	R-1 ITEM NOMENCLATURE 0604218N Air/Ocean Equipment Engineering

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	4.461	4.558	5.690
FY07 President's Budget	4.325	4.491	5.578
Total Adjustments	(0.136)	(0.067)	(0.112)
Summary of Adjustments			
Small Business Innovation Research (SBIR)	(0.050)		
Nuclear Physical Security (OSD-09)	0.001		
Trusted Foundary	0.004		
Department of Energy Transfer	(0.003)		
Execution Realignments	(0.088)		
Sec 8125: Revised Economic Assumptions		(0.020)	
Congressional Action 1% Reduction		(0.047)	
Contract Support Reduction			(0.127)
NWCF CIVPERS Efficiencies			(0.018)
Inflation			0.025
CIVPERS Pay Raise Change			0.008
Subtotal	(0.136)	(0.067)	(0.112)

(U) Schedule:

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air/Ocean Equipment Engineering					PROJECT NUMBER AND NAME 2345 Fleet METOC Equipment		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**3.038**	**3.127**	**3.967**	**4.088**	**4.165**	**4.176**	**4.265**	
RDT&E Articles Qty								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of sensors, communication interfaces, and processing and display equipment. This equipment is designed to provide future mission capabilities for warfighters 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 data receiver/recorder, shipboard weather radar capabilities, and the development of new sensors such as active and passive atmospheric profilers. 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 operational effects of the physical environment on the performance of platforms, weapons and sensor systems.

This project reflects changes in investment line description beginning in FY07. This change supports acquisition and development investment lines that support the vision, operations concept, and capability requirements. Changes consolidate and better define RDT&E efforts as well as better reflect the new Commander Naval Meteorological and Oceanographic Command (CNMOC) reorganization.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA 5	0604218N Air Ocean Equipment Engineering	2345 Fleet METOC Equipment	

(U) B. Accomplishments/Planned Program

Object Oriented Database Management/ MetOc in IT Enterprise Environment	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.050	0.420	1.600	
RDT&E Articles Quantity				

FY05 - Completed transition and delivered final version to web-enabled high-speed battlegroup data server. Development of Object Oriented Database Management engineering for next generation data server employing expert system techniques.
FY06: - Complete and deliver Object Oriented Database Management system for next generation data server employing expert system techniques.
FY07 - Integrate Object Oriented Database Management system for the next generation data server into the Network infrastructure. Deliver associated documentation. Deliver initial report detailing huge dataset transfer capability into Tactical Environmental Data Services (TED Services).

Fleet System Engineering/ TDA/Mission Planning	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.050	0.420	2.367	
RDT&E Articles Quantity				

FY05: - Delivered Alternatives Study for the Next Generation Meteorological Mobile Facility.
FY06 - Deliver final study on Next Generation Mini-Rawin System (MRS). Begin development of NITES NG.
FY07 - Deliver Alternatives Study for the Next Generation mobile Met Sensors. Continue development of NITES NG. Continue Lead Laboratory support.

Lead Laboratory/ TDA/Mission Planning	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.050	0.487		
RDT&E Articles Quantity				

FY05-07 - Lead laboratory conducts annual software integration, assists model developers, and provides technical assistance to other activities.
FY05 - Delivered Quarterly Reports.
FY06 - Deliver Quarterly Reports.
FY07 - Effort rolled into the "TDA/Mission Planning" investment line.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA 5	0604218N Air Ocean Equipment Engineering	2345 Fleet METOC Equipment	

(U) B. Accomplishments/Planned Program

Off-the-Shelf Technology/ MetOc in IT Enterprise Environment	FY 05	FY 06	FY07	
Accomplishments/Effort/Subtotal Cost	0.057	0.400		
RDT&E Articles Quantity				

FY05 - Delivered Evaluation Report for COTS Database.
FY06 - Deliver SMQ-11 antenna Analysis of Alternatives study.
FY07 - Efforts rolled into the "InteMetOc in IT Enterprise Environment" investment line.

USMC Acquisition	FY 05	FY 06	FY07	
Accomplishments/Effort/Subtotal Cost	2.831	1.400		
RDT&E Articles Quantity				

FY05 - Conducted Alternative Analysis for prototype development of the Meteorological Mobile Environmental Facility (Replacement) Next Generation (METMF(R) NG) including radar and communications integration.
FY06 - Development of METMF(R) NG Variant I EDM, Variant II prototype.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME 2345 Fleet METOC Equipment

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPN 4226 METEOROLOGICAL EQUIPMENT	19.996	22.486	15.037	19.101	23.306	26.203	26.781

Related RDT&E: PE 0603207N, Air/Ocean Tactical Applications

(U) D. ACQUISITION STRATEGY:

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 the Program Executive Officer for Command, Control, Communications, Computers and Intelligence and Space (PEO C4I & Space).

(U) E. MAJOR PERFORMERS:

N/A

(U) F. METRICS:

Earned Value Management (EVM) is used for metrics reporting and risk management.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604218N Air Ocean Equipment Engineering				PROJECT NUMBER AND NAME 2345 Fleet METOC Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	NRL	7.249	1.110	NA	1.165	NA	1.488	NA	CONT	CONT	
	WX	SSCs	3.291	0.446	NA	0.467	NA	0.590	NA	CONT	CONT	
	CP	RAYTHEON	1.502	0.224	NA	0.234	NA	0.296	NA	CONT	CONT	
	NA	MISC	10.722	1.228	NA	1.261	NA	1.592	NA	CONT	CONT	
Subtotal Product Development			22.764	3.008	0.000	3.127	0.000	3.967		CONT	CONT	
Remarks:												
Development Support	CP	SSA/CSC	1.312									
Subtotal Support			1.312							CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604218N Air Ocean Equipment Engineering			PROJECT NUMBER AND NAME 2345 Fleet METOC Equipment							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	PD	OPTEVFOR	0.364	0.030	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
Subtotal T&E			0.364	0.030	0.000	0.000	0.000	0.000	0.000	CONT	CONT	
Remarks: Increased funding in FY07 for testing to support delivery of the Next Generation Meteorological Mobile Facility prototypes.												
Subtotal Management												
Remarks:												
Total Cost			24.440	3.038		3.127		3.967		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

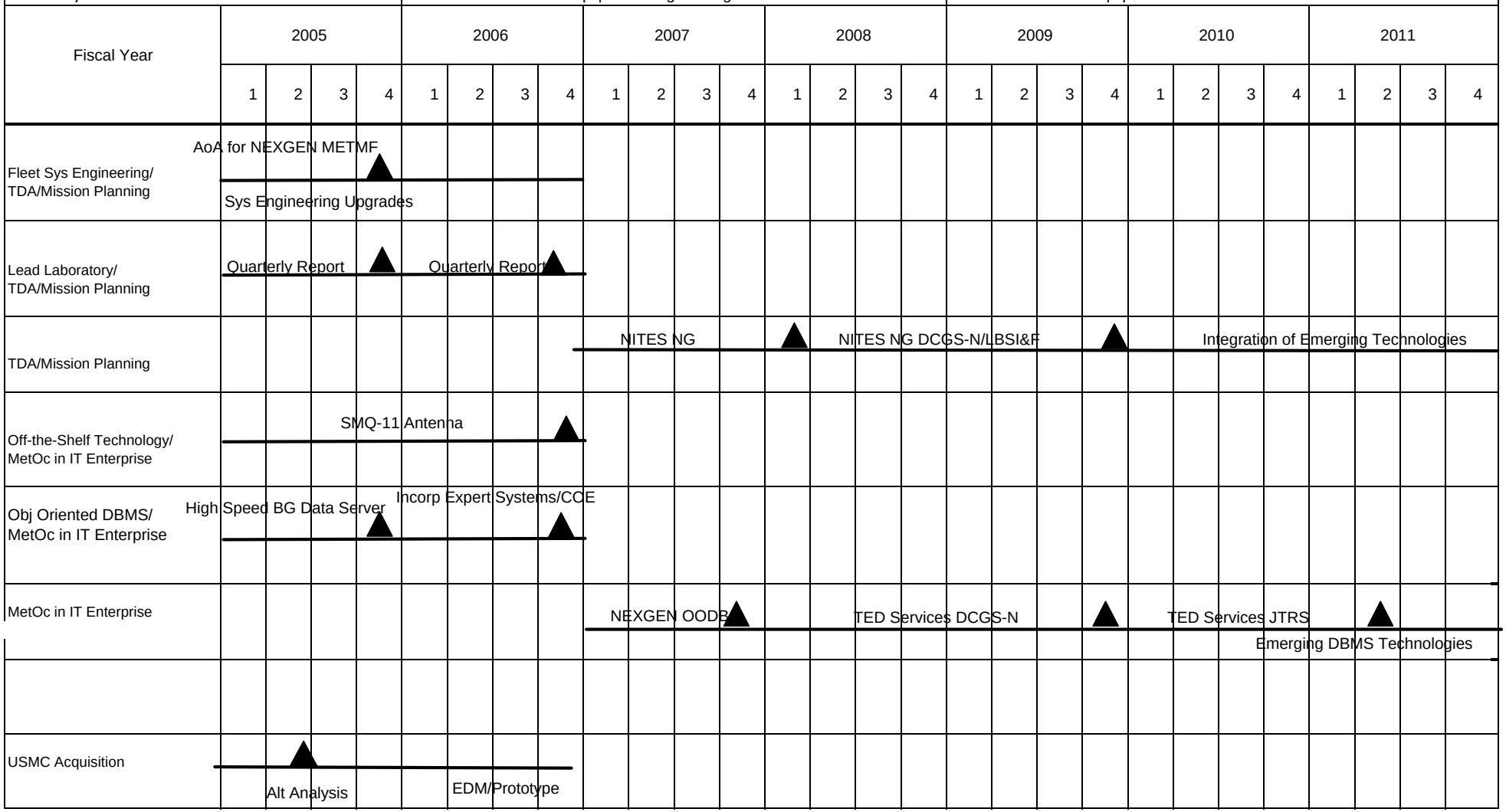
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604218N Air Ocean Equipment Engineering

PROJECT NUMBER AND NAME: 2345 Fleet METOC Equipment



R-1 SHOPPING LIST - Item No. 88

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**				PROJECT NUMBER AND NAME 2345 Fleet METOC Equipment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Fleet Sys Engineering/TDA/Mission Planning	4Q						
Lead Laboratory/TDA/Mission Planning	4Q	4Q					
TDA/Mission Planning				1Q	4Q		
Off-the-Shelf Technology/METOC in IT Enterprise		4Q					
Obj Oriented DBMS/METOC in IT Enterprise	4Q	4Q					
METOC in IT Enterprise			4Q		4Q		2Q
USMC Acquisition	2Q						

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air/Ocean Equipment Engineering				PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**1.287**	**1.364**	**1.611**	**1.643**	**1.665**	**1.661**	**1.696**	
RDT&E Articles Qty								

(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 capabilities for obtaining near real-time, in-situ meteorological and oceanographic (METOC) data in hostile, remote, and denied areas. The project's objectives are to provide near-term future mission capabilities that are intended to ruggedize and package systems, sensors and instruments to survive the harsh littoral and deep-strike environments 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 project engineers and integrates sensor capabilities that are intended to obtain unique METOC data that will provide important inputs for predictive models in areas of potential interest.

This project reflects changes in investment line description beginning in FY07. This change supports acquisition and development investment lines that support the vision, operations concept, and capability requirements. Changes consolidate and better define RDT&E efforts as well as better reflect the new Commander Naval Meteorological and Oceanographic Command (CNMOC) reorganization.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604218N Air Ocean Equipment Engineering	2346 METOC Sensor Engineering

(U) B. Accomplishments/Planned Program

Unmanned Aerial Vehicle METOC Sensors/ Sensors/Observing Systems	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.183	0.200	1.611	
RDT&E Articles Quantity				

FY05 - Resumed Meteorological Sensor engineering development to include micro-miniature temperature, pressure, and humidity sensors.
FY06 - Flight test for first generation micro-miniature sensors in operational Unmanned Aerial Vehicles (UAVs). Development of follow-on Meteorological sensors using evolving techniques.
FY07 - Develop and demonstrate sensor integration and compatibility with Network. Development of follow-on UAV Meteorological sensors using evolving technologies. Deliver initial engineering plan including Total Ownership Cost (TOC) estimates. Development of sensor -Unmanned Underwater Vehicle Sensor (UUVs) engineering plans. Flight test air-deployed micro-sensors and deliver Final Report. Begin investigating Network integration. Deliver Technical Reports on Buoy.

Clandestine Sensors/ Sensors/Observing Systems	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.185	0.200		
RDT&E Articles Quantity				

FY05 - Delivered Initial Sensor Development Execution Plan.
FY06 - Deliver Final Technical Report on air-deployed micro-sensors.
FY07 - Efforts incorporated into the "Sensors/Observing Systems" investment line.

Tactical Battlespace Sensors (formerly MEASURE)/ Sensors/Observing Systems	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.740	0.772		
RDT&E Articles Quantity				

FY05: Delivered Technical Reports to include post demonstration Lessons Learned. Performed end-to-end Battlespace Sensor Data Acquisition Demonstration, from sensor data acquisition through tactical application. Development of Metoc Air, Surface, Undersea Reporting Equipment (MEASURE) including sensors and processing/distribution devices that detect, characterize and distribute meteorological and oceanographic data from the battlespace.
FY06 - Deliver Technical Reports. Development of next generation sensors.
FY07 - Efforts incorporated into the "Sensors/Observing Systems" investment line.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604218N Air Ocean Equipment Engineering	2346 METOC Sensor Engineering

(U) B. Accomplishments/Planned Program

Unmanned Underwater Vehicle Sensors/ Sensors/Observing Systems	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.179	0.192		
RDT&E Articles Quantity				

FY05 - Delivered Technical Reports. Development of Unmanned Underwater Vehicle Sensors engineering for tactical acoustic measurement buoy.
FY06 - Deliver Technical Reports. Demonstrate prototype sensors to include Post Demonstration Lessons Learned.
FY07 - Efforts incorporated into the "Sensors/Observing Systems" investment line.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604218N Air Ocean Equipment Engineering	2346 METOC Sensor Engineering

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011

Not applicable

Related RDT&E: PE 0603207N, Air/Ocean Tactical Applications

(U) D. ACQUISITION STRATEGY:

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 the Program Executive Officer for Command, Control, Communications, Computers and Intelligence and Space (PEO C4I & Space).

(U) E. MAJOR PERFORMERS:

N/A

(U). F. METRICS:

Earned Value Management (EVM) is used for metrics reporting and risk management.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604218N Air Ocean Equipment Engineering			PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	NRL	1.314	0.053	NA	0.056	NA	0.067	NA	CONT	CONT	
	NA	MISC	6.321	1.234	NA	1.308	NA	1.544	NA	CONT	CONT	
Subtotal Product Development			7.635	1.287		1.364		1.611		CONT	CONT	
Remarks:												
Total Cost			7.635	1.287		1.364		1.611		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604218N Air Ocean Equipment Engineering

PROJECT NUMBER AND NAME: 2346 METOC Sensor Engineering

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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/ Sensors/Observing Systems	Micro-Sensor Development **DEM/VAL**																											
Clandestine Sensors/ Sensors/Observing Systems	Autonomous Sensor Engineering **DEM/VAL**																											
Tactical Battlespace Sensors/ Sensors/Observing Systems	End-to-End Integrated Demo																											
UUV Sensors/ Sensors/Observing Systems	UUV Sensor Development **DEM/VAL**																											
Sensors/Observing Systems									Network Integration UAV Integration Air Deployed Micro-sensors UUV Integration				LBSI&F				Wave Buoy Upgrades				NEXGEN Sensor Development				Next Generation UVs			

R-1 SHOPPING LIST - Item No. 88

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**				PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
UAV METOC Sensors/Sensors/Observing Systems		2Q					
Clandestine Sensors/Sensors/Observing Systems	4Q						
Tactical Battlespace Sensors/Sensors/Observing Systems	4Q						
UUV Sensors/Sensors/Observing Systems		1Q					
Sensors/Observing Systems				3Q	4Q		4Q

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604221N, P-3 MODERNIZATION PROGRAM		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	11.838	10.637	16.139	8.638	3.572	3.563	3.610	
1152 P-3 SENSOR INTEGRATION	5.855	4.319	14.036	6.493	1.422	1.343	1.316	
3016 FATIGUE LIFE MANAGEMENT PROGRAM	2.120	2.968	2.103	2.145	2.150	2.220	2.294	
9368 ALR-95 SEI NETWORKING PROGRAM	2.898							
9551 PERSONAL DIGITAL ASSISTANT MAINTENANCE	.965							
9999, CONGRESSIONAL ADDS		3.350						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for P-3C aircraft systems development in subsurface and surface surveillance, search, detection, localization, classification, attack and communications in support of Sea Shield/Sea Power 21. The P-3C Sensor Integration project integrates advanced and future ASW and ASuW sensors, weapons systems, and supporting technology into legacy P-3C systems and phased capabilities upgrades. Also, P-3 Sensor Integration will expand software and hardware technology of P-3 systems to integrate additional sensor and processing capabilities, environmental prediction tools, tactical decision aides, color capabilities and communications to improve aircrew tactical proficiency and battlespace awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW and ASuW technologies such as Analyzer Sub-Unit and System Controller Technology Insertions, "Extended Echo Ranging" (EER) family of Multi-Static active systems, Acoustic Rapid Cots Insertion (ARCI), Non-acoustic ASW sensors and systems, and future Technical Refresh insertions for obsolescence and processing improvements. Develop interface control for ASW weapon improvement solutions. The Over the Horizon (OTH) Wideband system will provide the P-3C AIP aircraft the capability to conduct OTH Satellite communications which will allow the on-station aircraft to transmit real time sensitive acoustic intelligence data which will maximize enemy detections, tracking, and engagement opportunities.

Fatigue Life Management Program is required to manage P-3/EP-3 inventory fatigue life and includes ongoing structural analysis, analyzing emergent structural issues, conducting engineering studies, assessing Fleet impact, and applying new technologies such as Non-Destructive Inspection (NDI) techniques.

ALR-95 SEI Networking Program will provide Specific Emitter Identification (SEI) connectivity to common tactical networks. The ALR-95 Radio Frequency Distribution (RFD) will upgrade the system of the ALR-95 with fiber optic cable to reduce losses and improve performance. The ALR-95 electronic support measures (ESM) system specific emitter identification (SEI) networking and performance enhancement upgrade.

The Personal Digital Assistant Maintenance Application Program (PDA MAP) will reduce paper data collection and manual data entry process associated with scheduled maintenance inspections. PDA MAP will improve efficiency, increase data collection accuracy, and reduce Naval Aviation Logistics Command Management Information System (NALCOMIS) data entry time.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
1152 P-3 SENSOR INTEGRATION	5.855	4.319	14.036	6.493	1.422	1.343	1.316	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for P-3C aircraft systems development in subsurface and surface surveillance, search, detection, localization, classification, attack and communications in support of Sea Shield/Sea Power 21. The P-3C Sensor Integration project integrates advanced and future ASW and ASuW sensors, weapons systems, and supporting technology into legacy P-3C systems and phased capabilities upgrades. The program also advances Air ARCI efforts by replacing legacy MIL-SPEC UYS-1 with increasingly open, COTS-based architecture. Also, P-3 Sensor Integration will expand software and hardware technology of P-3 systems to integrate additional sensor and processing capabilities, environmental prediction tools, tactical decision aides, color capabilities and communications to improve aircrew tactical proficiency and battlespace awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW and ASuW technologies such as Analyzer Sub-Unit (ASU) and System Controller (SC) Technology Insertions, "Extended Echo Ranging" (EER) family of Multi-Static active systems, Acoustic Rapid Cots Insertion (ARCI), Non-acoustic ASW sensors and systems, and future Technical Refresh insertions for obsolescence and processing improvements. Develop interface control for ASW weapon improvement solutions. The Over the Horizon (OTH) Wideband system will provide the P-3C AIP aircraft the capability to conduct OTH Satellite communications which will allow the on-station aircraft to transmit real time sensitive acoustic intelligence data which will maximize enemy detections, tracking and engagement opportunities.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost			11.000	
RDT&E Articles Qty				

The OTH Wideband program will provide P-3C AIP aircraft the capability to conduct OTH Satelitte communications. Specifically, this program will design, develop, integrate and evaluate this capability on the P-3C AIP aircraft.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.844			
RDT&E Articles Qty				

P-3 Critical Obsolescence Program (COP): Integration, prototyping, testing, aircraft support, logistics, contracting, engineering, and program management of the five COP systems (HF Radio, Data Link, Infrared Detection, Tactical ASW Auto-Pilot, and Inter Communications).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.011	4.319	3.036	
RDT&E Articles Qty				

This program provides for P-3C aircraft systems development in subsurface and surface surveillance, search, detection, localization, classification, attack and communications in support of Sea Shield/Sea Power 21. The P-3C Sensor Integration project integrates advanced and future ASW and ASuW sensors, weapons systems, and supporting technology into legacy P-3C systems and phased capabilities upgrades. Also, P-3 Sensor Integration will expand software and hardware technology of P-3 systems to integrate additional sensor and processing capabilities, environmental prediction tools, tactical decision aides, color capabilities and communications to improve aircrew tactical proficiency and battlespace awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW and ASuW technologies such as Analyzer Sub-Unit (ASU) and System Controller (SC) Technology Insertions, "Extended Echo Ranging" (EER) family of Multi-Static active systems, Acoustic Rapid Cots Insertion (ARCI), Non-acoustic ASW sensors and systems, Digital Sono Receiver, and future Technical Refresh insertions for obsolescence and processing improvements. Develop interface control for ASW weapon improvement solutions.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	6.124	4.387	3.215
Current BES / President's Budget:	5.855	4.319	14.036
Total Adjustments	-0.269	-0.068	10.821
Summary of Adjustments			
Congressional Reductions		-0.002	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.027	-0.046	
Congressional Increases			
Economic Assumptions		-0.020	0.067
Miscellaneous Adjustments	-0.242		10.754
Subtotal	-0.269	-0.068	10.821

Schedule:
The P-3 ARCI program and Future Fleet Technology Insertion milestone moved from 2Q/06 to 2Q/05 to meet an emergent priority requirement for implementing improvements into the USQ-78.

Technical:
N/A

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 0538 P-3 Critical Obsolescence Program (COP) (OSIP 04-04)	24.267	34.169	43.697	42.120	46.174	39.698	35.462	264.718	530.305

E. ACQUISITION STRATEGY:

The Air Deployable Active Receiver/Improved Extended Echo Ranging (IEER) Operational Requirements Document (Ser# 297(1)-05-97)) for 1152 was approved on 29 December 1997. The P-3 ASUW Improvement Program (AIP) ORD (Ser#355-88-94) for 2417 was approved on 30 March 1994. The Acquisition Plan (AIR-93-08A Rev 2) was approved on 30 March 1998.
The ASR (AIR-ASR-26A Rev 3) was approved 29 Nov 1999 which includes Over the Horizon (OTH) Wideband system.

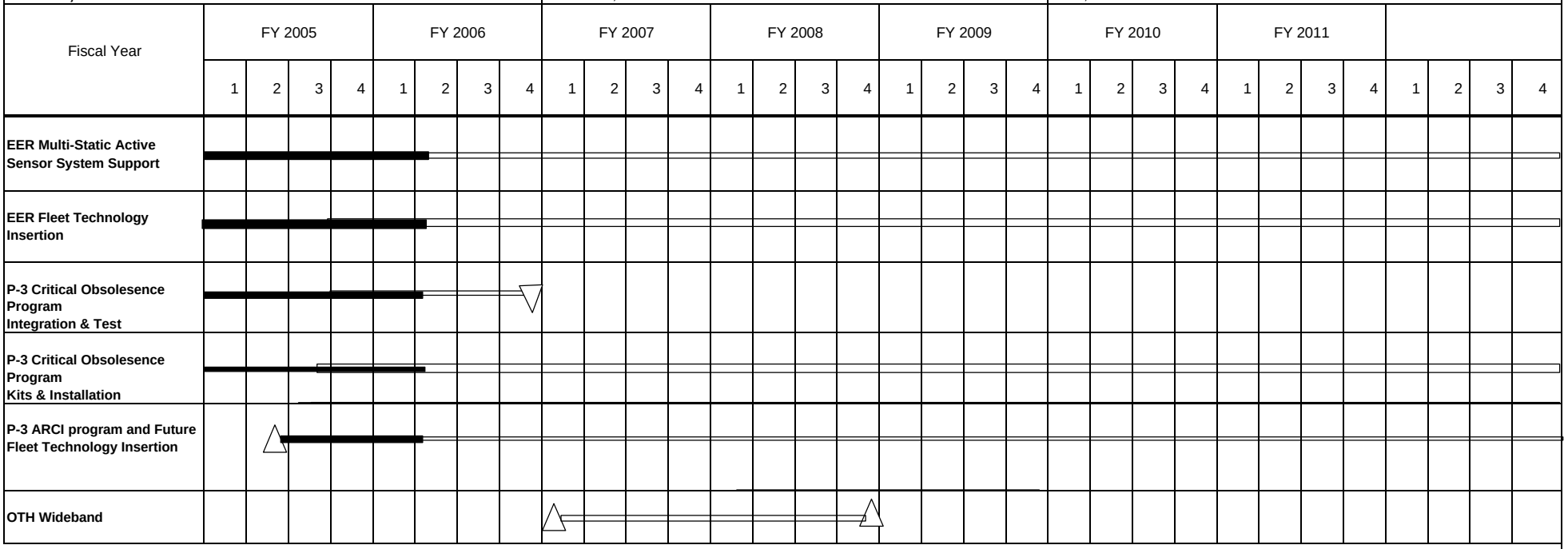
Exhibit R-3 Cost Analysis (page 1)						02/06			DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604221N, P-3 MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development-LM Eagan	C-FP	LOCKHEED MARTIN CORP, EAGAN, MN						5.700	10/31/2006	.799	6.499	6.499
Systems Eng - LM Eagan	SS-CPFF	LOCKHEED MARTIN CORP, EAGAN, MN						2.850	10/31/2006	1.300	4.150	4.150
Systems Eng - LOCKHEED-MARTIN	SS-CPFF	LOCKHEED MARTIN CORP, MANASSAS, VA		1.741	2/15/2005			1.436	1/30/2007		3.177	3.177
Systems Eng - VARIOUS	VARIOUS	VARIOUS	30.440	.050	1/15/2005	2.132	1/8/2006			Continuing	Continuing	
All other PY Product Development Cost			6.425									6.425
SUBTOTAL PRODUCT DEVELOPMENT			36.865	1.791		2.132		9.986		Continuing	Continuing	
Remarks:												
SUPPORT												
OTH Software Development-NAWC PAX	WX	NAWCAD, PATUXENT RIVER MD						.850	10/31/2006	.400	1.250	
Software Development -NAWC PAX	WX	NAWCAD, PATUXENT RIVER MD	2.897	.200	1/19/2005	.500	1/8/2006	1.600	1/8/2007	Continuing	Continuing	
All other PY Support Cost			22.340								22.340	22.340
SUBTOTAL SUPPORT			25.237	.200		.500		2.450		Continuing	Continuing	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval -NAWC PAX	WX	NAWCAD, PATUXENT RIVER MD	2.241	1.642	1/8/2005	.650	1/8/2006			Continuing	Continuing	
OTH Test Support	WX	NAWCAD, PATUXENT RIVER MD						.350	10/31/2006	.150	.500	
SUBTOTAL TEST & EVALUATION			2.241	1.642		.650		.350		Continuing	Continuing	
Remarks:												
MANAGEMENT												
Government Program Management Suppo	WX	NAWCAD, PATUXENT RIVER MD	.794	.988	1/8/2005	.400	1/8/2006			Continuing	Continuing	
Government Tech Support	WX	NAWCAD, PATUXENT RIVER MD	.366	.500	1/8/2005	.450	1/8/2006			Continuing	Continuing	
Government Tech Support - MITRE	MIPR	THE MITRE CORPORATION, MCLEAN VA		.070	2/10/2005						.070	
Logistics Support	WX	NAWCAD, PATUXENT RIVER MD	.370	.664	1/8/2005	.187	1/8/2006			Continuing	Continuing	
OTH Government Eng Sup-NAWC PAX	WX	NAWCAD, PATUXENT RIVER MD						.500	10/31/2006	.250	.750	
OTH Government Tech Support	WX	NAWCAD, PATUXENT RIVER MD						.250	10/31/2006	.100	.350	
OTH Logistics Support	WX	NAWCAD, PATUXENT RIVER MD						.250	10/31/2006	.100	.350	
OTH Program Management Support	WX	NAWCAD, PATUXENT RIVER MD						.250	10/31/2006	.100	.350	
All other PY Management Cost			13.060								13.060	
SUBTOTAL MANAGEMENT			14.590	2.222		1.037		1.250		Continuing	Continuing	
Remarks:												
Total Cost			78.933	5.855		4.319		14.036		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604221N, P-3 MODERNIZATION PROGRAM	1152, P-3 SENSOR INTEGRATION



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **BA-5**	PROGRAM ELEMENT 0604221N, P-3 MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 1152, P-3 SENSOR INTEGRATION			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
EER Multi-Static Active Sensor System Support	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
EER Multi-Static Fleet Technology Insertion	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
P-3 Critical Obsolescence Program (COP) Test/Integration	1Q-4Q	1Q-4Q						
P-3 Critical Obsolescence Prog. APN Procurement	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
P-3 ARCI and Future Fleet Technology Insertion	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
P-3 OTH Wideband			1Q-4Q	1Q-4Q				

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3016 FATIGUE LIFE MANAGEMENT PROGRAM	2.120	2.968	2.103	2.145	2.150	2.220	2.294	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Fatigue Life Management Program is required to manage P-3/EP-3 inventory fatigue life and includes ongoing structural analysis, analyzing emergent structural issues, conducting engineering studies, assessing Fleet impact, and applying new technologies such as Non-Destructive Inspection (NDI) techniques.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.120	2.968	2.103	
RDT&E Articles Qty				

Fatigue Life Management Program : Manage P-3/EP-3 inventory fatigue life including conducting structural analysis, analyzing structural issues, conducting engineering studies, assessing Fleet impact. Research, test and apply new Fatigue Inspection techniques to the P-3/EP-3 Fleet.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.954	3.014	2.030
Current BES / President's Budget:	2.120	2.968	2.103
Total Adjustments	-0.834	-0.046	0.073
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.059	-0.032	
Congressional Increases			
Economic Assumptions		-0.014	0.084
Miscellaneous Adjustments	-0.775		-0.011
Subtotal	-0.834	-0.046	0.073

Schedule:
Not Applicable

Technical:
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

E. ACQUISITION STRATEGY:
The Fatigue Life Management Program leverages off of prior work done under P-3 SLAP (2451). The ASUW Improvement Program (AIP) ORD 355-88-94 was approved 30 March 94. PMP #0526 Ser 902D1/6U324405 was approved on 6 Feb 1986. Navy Decision Coordination Paper W-0484-AS was signed 23 Jun 1984. Work will be performed by LMAS and other industry participants along with the NAVAIR Structural Engineering Dept, AIR-4.3. This program supports the 7 June 2003 CNO approved P-3/EP-3 Sustainment Bridge to MMA.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604221N, P-3 MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
SYSTEMS ENGINEERING -LOCKHEED	C-CPIF	LOCKHEED MARTIN CORPORATION, MARIE		.401	1/4/2005	2.268	1/4/2006	1.403	1/4/2007	6.009	10.081	10.081
SUBTOTAL PRODUCT DEVELOPMENT				.401		2.268		1.403		6.009	10.081	
Remarks:												
SUPPORT												
SUBTOTAL SUPPORT												
Remarks:												
TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												
Remarks:												
MANAGEMENT												
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD		1.719	12/30/2004	.700	12/5/2005	.700	12/31/2006	2.800	5.919	
SUBTOTAL MANAGEMENT				1.719		.700		.700		2.800	5.919	
Remarks:												
Total Cost				2.120		2.968		2.103		8.809	16.000	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604221N P-3 Modernization Program	3016, FATIGUE LIFE MANAGEMENT PROGRAM

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
Inventory Fatigue Life Management/Sustainment																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **BA-5**	PROGRAM ELEMENT 0604221N, P-3 MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3016, FATIGUE LIFE MANAGEMENT PROGRAM			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Inventory Fatigue Life Management/Sustainment	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9368, ALR-95 SEI NETWORKING PROGRAM	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9368 ALR-95 SEI NETWORKING PROGRAM	2.898							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The U.S. Navy P-3C “Orion” is increasingly being tasked to conduct long-endurance standoff maritime surveillance operations. In support of these missions, the P-3C is being upgraded with the Anti-Surface Warfare Improvement Program (AIP). AIP incorporates a number of sensor system additions to the aircraft. Among these enhancements are a SAR/ISAR radar for high resolution target identification, a long range electro-optical surveillance system, communications and survivability enhancements and the new ALR-95 electronic support measures (ESM) system. Phased Capability Upgrade (PCU), encompasses improvements to the aircraft including Link 16, Global Command and Control System-Maritime (GCCS-M), Integrated Tactical Picture (ITP) Precision Targeting Workstation (PTW), Architecture Upgrade, ALR 95 Geo-Location, ALR 95 Networking, and Tactical Common Data Link (TCDL). PCU will provide sensor and C4I modernization which will enhance the Carrier Strike Group/ Expeditionary Strike Group (CSG/ESG) integration and a bridge to the Multi-Mission Maritime Aircraft (MMA) architecture. The new ESM System includes Specific Emitter Identification (SEI) capability that permits the P-3 to passively detect, identify and track high interest targets at extremely distant ranges. Currently, the P-3 shares intelligence associated with SEI contacts only with ground-based Tactical Support Center. There is an urgent fleet requirement to ensure the P-3 can connect with other fleet and ISR platforms to exchange SEI contact information in real time. The FY05 Congressional Add of $1.5M provides ALR-95 electronic support measures (ESM)system specific emitter identification (SEI) networking and performance enhancement upgrade. The FY05 Congressional Add of $1.5M for the ALR-95 RFD will upgrade the Radio Frequency Distribution system of the ALR-95 with fiber optic cable to reduce losses and improve performance.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9368, ALR-95 SEI NETWORKING PROGRAM	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.898			
RDT&E Articles Qty				

The SEI system as deployed is not equipped to handle the large increase of high interest targets that have resulted from the wide-ranging war on terrorism. These shortcomings can be addressed with upgrades to the system. The system will be upgraded to conform to the Navy's standard tactical message format. In addition, upgraded CPU cards and SEI card sets will be selected and tested to change significantly the ability to handle many targets in a single area. The FY05 Congressional Add of $1.5M provides ALR-95 electronic support measures (ESM)system specific emitter identification (SEI) networking and perforamance enhancement upgrade. The FY-05 Congressional Add for the ALR-95 RFD will upgrade the Radio Frequency Distribution system of the ALR-95 with fibre optic cable to reduce losses and improve performance.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604221N, P-3 MODERNIZATION PROGRAM**	9368, ALR-95 SEI NETWORKING PROGRAM

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.971		
Current BES / President's Budget:	2.898		
Total Adjustments	-0.073		

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.073		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.073		

Schedule:
Not Applicable

Technical:
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9368, ALR-95 SEI NETWORKING PROGRAM	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

E. ACQUISITION STRATEGY:
Existing Sole Source FFP contract to EDO

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9551, PERSONAL DIGITAL ASSISTANT MAINTENANCE APP	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9551 PERSONAL DIGITAL ASSISTANT MAINTENANCE	.965							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Personal Digital Assistant Maintenance Application Program (PDA MAP) will reduce paper data collection and manual data entry process associated with scheduled maintenance inspections. PDA MAP will improve effiency, increase data collection accuracy, and reduce Naval Aviation Logistics Command Management Information System (NALCOMIS) data entry time.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9551, PERSONAL DIGITAL ASSISTANT MAINTENANCE APP

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.965			
RDT&E Articles Qty				

The Personal Digital Assistant Maintenance Application Program (PDA MAP) will reduce paper data collection and manual data entry process associated with scheduled maintenance inspections. PDA MAP will improve effiency, increase data collection accuracy, and reduce Naval Aviation Logistics Command Management Information System (NALCOMIS) data entry time.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604221N, P-3 MODERNIZATION PROGRAM**	9551, PERSONAL DIGITAL ASSISTANT MAINTENANCE APP

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.989	0.000	0.000
Current BES / President's Budget:	0.965	0.000	0.000
Total Adjustments	-0.024	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.024		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.024	0.000	0.000

Schedule:
Not Applicable

Technical:
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9551, PERSONAL DIGITAL ASSISTANT MAINTENANCE APP	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

E. ACQUISITION STRATEGY:
Sole source contract to Computer Products, Inc for the engineering and manufacturing development of the Personal Digital Assistant Maintenance Application.

:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**					PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9999 CONGRESSIONAL ADDS		3.350						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604221N, P-3 MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

9368	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.350		
RDT&E Articles Qty				

ALR-95 ESM SYSTEMS SEI NETWORKING AND PERFORMANCE UPGRADE

The SEI system as deployed is not equipped to handle the large increase of high interest targets that have resulted from the wide-ranging war on terrorism. These shortcomings can be addressed with upgrades to the system. The system will be upgraded to conform to the Navy's standard tactical message format. In addition, upgraded CPU cards and SEI card sets will be selected and tested to change significantly the ability to handle many targets in a single area.

9551	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.000		
RDT&E Articles Qty				

PERSONAL DIGITAL ASSISTANT MAINTENANCE APPLICATION

The Personal Digital Assistant Maintenance Application Program (PDA MAP) will reduce paper data collection and manual data entry process associated with scheduled maintenance inspections. PDA MAP will improve effiency, increase data collection accuracy, and reduce Naval Aviation Logistics Command Management Information System (NALCOMIS) data entry time.

9772	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.000		
RDT&E Articles Qty				

P-3C HIGH RESOLUTION DIGITAL RECORDER

Engineering, development, and test and evaluation of the AIMS EO/IR Sensor System Recorder. The sensor systems are capable of providing the warfighter with higher quality real-time intelligence. The current recorders are capable of recording.

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: **February 2006**					
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5**					R-1 ITEM NOMENCLATURE 0604230N Naval Support System					
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total
Total PE Cost		**5.092**	**2.241**	**2.203**	**2.358**	**1.422**	**1.452**	**1.487**		**16.255**
3140 Sea Eagle ACTD		**2.000**	**1.724**	**0.688**	**0.939**	**0.000**	**0.000**	**0.000**		**5.351**
4011 Naval Coastal Warfare		**3.092**	**0.517**	**1.515**	**1.419**	**1.422**	**1.452**	**1.487**		**10.904**
Quantity of RDT&E Articles										

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

The Naval Coastal Warfare (NCW) community consists of 22 Mobile Inshore Undersea Warfare (MIUW) units and 8 Harbor Defense Command (HDC) units operating Mobile Ashore Support Terminal IIIs (MAST IIIs). NCW also includes 14 Inshore Boat Units (IBU) comprised of 6 small craft (boats) each on which are installed C4I systems .

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 MAST III is the C4ISR hub for the NCW Commander. MAST IIIs 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 area of responsibility (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. Future NCW forces will develop into 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.

Sea Eagle is an FY05 Advanced Concept Technology Demonstration (ACTD) with USN as lead service and USSOCOM as the Combatant Command sponsor. Sea Eagle will provide integrated and enhanced technologies in order to provide persistent, clandestine, and unattended monitoring of denied and sensitive maritime, littoral, and harbor areas. These sensors and systems will be deliverable by Special Operational Forces (SOF) and networked in a multi-media (sea, air, land) system of systems approach. Sea Eagle will focus on close access networking, both wireless through air and underwater, to support networked tactical sensors. The special operations warfighter will tactically emplace Sea Eagle systems to provide targeted, tactical information that complements national and theater intelligence assets to enable a layered intelligence collection strategy.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	**FY 07 DON Submission ($M)**				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDTEN / BA-4**	PROGRAM ELEMENT NUMBER AND NAME **PE 0604230N WARFARE SUPPORT SYSTEMS**				PROJECT NUMBER AND NAME **3140 Sea Eagle ACTD**			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**2.000**	**1.724**	**0.688**	**0.939**	**0.000**	**0.000**	**0.000**
3140 Sea Eagle ACTD	**0.000**	**2.000**	**1.724**	**0.688**	**0.939**	**0.000**	**0.000**	**0.000**

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
Sea Eagle is an FY05 Advanced Concept Technology Demonstration (ACTD) with USN as lead service and USSOCOM as the Combatant Command sponsor. Sea Eagle will provide integrated and enhanced technologies in order to provide persistent, clandestine, and unattended monitoring of denied and sensitive maritime, littoral, and harbor areas. These sensors and systems will be deliverable by Special Operational Forces (SOF) and networked in a multi-media (sea, air, land) system of systems approach. Sea Eagle will focus on close access networking, both wireless through air and underwater, to support networked tactical sensors. The special operations warfighter will tactically emplace Sea Eagle systems to provide targeted, tactical information that complements national and theater intelligence assets to enable a layered intelligence collection strategy.

(U) B. PROJECT UNIT EFFORT is as follows:
Demonstrates and transitions technologies to provide persistent, clandestine, unattended monitoring of maritime, littoral and harbor areas in a Special Operations Forces (SOF) deliverable "system of systems" These funds will be used to support technical downselect, systems integration, and demonstration for the first spiral of the Sea Eagle ACTD and for ongoing technical assessments of sensor and communication technologies for future spirals. The funds will support Johns Hopkins University Applied Physics Lab (the technical integrator for Sea Eagle), Operational Managers support and demonstration costs, and procurement and integration of components for the demonstrations. Systems will be demonstrated when a new capability can be demonstrated to allow an incremental transition strategy. USSOCOM is the CoCom/User Sponsor.

FY 2005 - Demonstrate an end to end systems solution. Demonstrate a land based electro-optic and infra-red sensor suite, triggered by land based triggers and from a clandestine maritime gateway device. Link land-based equipment together via a close access network. Send the output of the sensors through air via a gateway communications device to a Sea Eagle information handling server at the Mission Support Center (MSC) in Coronado, CA. Link the Sea Eagle server at the MSC to the Global Command and Control System - Maritime (GCCS-M). From the sea, demonstrate a clandestine device, perhaps a buoy, to be used as a multi-media gateway to breach the sea-air interface to communicate a trigger signal to the land based sensors. Additionally, use the gateway to trigger national technical means. Continue technical evuation of underwater communications technologies. Transition capabilities with military utility.

FY 2006 - Demonstrate an underwater communications and close access networking capability, and communicate through the clandestine maritime device to land-based systems and/or to the MSC. Demonstrate additional communications alternatives from underwater and from land based sensors to the MSC. Develop CONOPS and TTPS. Transition capabilities with military utility. Evalaute underwater sensors for detecting maritime vessels. Evaluate alternatives for other sensor technologies such as chemical, biological, nuclear, and radiological sensors. Transition capabilities with military utility.

FY 2007 - For already demonstrated capabilities, iterate and demonstrate a second spiral with enhanced capability. Demonstrate improved networking capability. Demonstrate underwater acoustic sensors to detect and classify maritime vessels, and communicate via underwater close access network through clandestine maritime device with land based sensors and the MSC. Refine CONOPS and TTPs. Transition capabilities with military utility. Complete the Navy funded portion of the Sea Eagle ACTD.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	**FY 07 DON Submission ($M)**	**DATE: February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTEN / BA-4	**PE 0604230N WARFARE SUPPORT SYSTEMS**	**3140 Sea Eagle ACTD**

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	**FY 2005**	**FY 2006**	**FY 2007**
FY 2006 President's Budget	0.000	0.000	0.000
FY 2007 Budget Estimate	2.000	1.724	0.688
Total Adjustments	2.000	1.724	0.688
Programmatic Adjustments			
ADJ TO SEA EAGLE ACTD	2.000	1.724	0.688
Total Adjustment	2.000	1.724	0.688

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

(U) D. Other Program Funding Summary

FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
0.000	0.000	0.000	0.000	0.000	0.000	0.000		

(U) E. Acquisition Strategy:

FY05 - Technical assessments, Spiral One technical downselect and demonstration, FY07 Technical assessments, Spiral Two technical downselect and demonstration, FY08-09 final

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Budget Item Justification	**FY 07 DON Submission ($M)**	**DATE:** **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTEN / BA-4	**PE 0604230N WARFARE SUPPORT SYSTEMS**	**3140 Sea Eagle ACTD**

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.000	1.724	0.688
RDT&E Articles Quantity		3	2	2

The Sea Eagle ACTD effort supports development of technical, programmatic and contractual documentation required for analysis of technologies and downselect, procurement of residuals, and demonstration of Sea Eagle systems.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**			PROGRAM ELEMENT **PE 0604230N WARFARE SUPPORT SYSTEMS**						PROJECT NUMBER AND NAME **3140 Sea Eagle ACTD**						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost		Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Technical Assessment						0.100		0.100		0.000			0.200		
Systems Engineering						0.135		0.150		0.000			0.285		
Sensor procurement						0.500		0.300		0.100			0.900		
Network integration						0.200		0.224		0.050			0.474		
Network procurement						0.200		0.250		0.100			0.550		
Training Development						0.050		0.050		0.038			0.138		
Subtotal Product Development						1.185		1.074		0.288		0.000	2.547		
Remarks: Funding required for selecting technologies to demonstrate in various ACTD spirals. Includes procurement of sensors and network components.															
Interface Definition						0.000		0.100		0.000			0.100		
Configuration Management						0.000		0.050		0.000			0.050		
Technical Data						0.050		0.050		0.050			0.150		
Subtotal Support			0.000	0.000		0.050		0.200		0.050		0.000	0.300		
Remarks: Logistics support and technical documentation generation. Includes development of interfaces and standards to support contracting and integration.															

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**		PROGRAM ELEMENT **PE 0604230N WARFARE SUPPORT SYSTEMS**						PROJECT NUMBER AND NAME **3140 Sea Eagle ACTD**						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost		Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation						0.100		0.150		0.050			0.300	
Downselect support						0.125		0.050						
Military Utility Assessment Support						0.015		0.050		0.050			0.115	
Subtotal T&E			0.000	0.000		0.240		0.250		0.100			0.590	
Remarks:														
Contractor Engineering Support						0.000							0.000	
Government Engineering Support						0.050				0.050			0.100	
University laboratory support						0.400		0.100		0.100				
Program management Support						0.050		0.050		0.050			0.150	
Travel						0.025		0.050		0.050			0.125	
Subtotal Management			0.000	0.000		0.525		0.200		0.250			0.975	
Remarks:														
Total Cost			0.000	0.000		2.000		1.724		0.688			4.412	
Remarks:														

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**									PROGRAM ELEMENT NUMBER AND NAME **PE 0604230N WARFARE SUPPORT SYSTEMS**														PROJECT NUMBER AND NAME **3140 Sea Eagle ACTD**									
Fiscal Year					2005				2006				2007				2008				2009				2010				2011			
	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																																
Demo 1										△																						
Demo 2													△																			
Demo 3																	△															

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT **PE 0604230N WARFARE SUPPORT SYSTEMS**				PROJECT NUMBER AND NAME **3140 Sea Eagle ACTD**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DEMO 1			2Q					
DEMO 2				1Q	1Q			
DEMO 3								

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System	PROJECT NUMBER AND NAME 4011 Naval Coastal Warfare	

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	To Complete	Total
Project Cost		**3.092**	**0.517**	**1.515**	**1.419**	**1.422**	**1.452**	**1.487**		**10.904**
RDT&E Articles Qty										

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

The Naval Coastal Warfare (NCW) community consists of 22 Mobile Inshore Undersea Warfare (MIUW) units and 8 Harbor Defense Command (HDC) units operating Mobile Ashore Support Terminal IIIs (MAST iiis). NCW also includes 14 Inshore Boat Units (IBU) comprised of 6 small craft (boats) each on which are installed C4I systems .

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 MAST III is the C4ISR hub for the NCW Commander. MAST IIIs 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. Future NCW forces will develop into 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.

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604230N Naval Support System	4011 Naval Coastal Warfare

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.640	0.000	0.000
RDT&E Articles Quantity				

FY05: Perform systems engineering analysis and integration activities associated with development of an Integrated Anti-Diver System (IADS) for Expeditionary Harbor Defense Operations.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.041	0.307	1.305
RDT&E Articles Quantity				

FY05: Begin IADS analysis, architectural design, and design review processes. Conduct requirements tractability analysis to ensure operational requirements are adequately captured in performance and design specifications. Develop IADS acquisition strategy based on requirements. Conduct Preliminary Design Review (PDR) on hardware and software components. Test a prototype IADS against operational NCW scenarios and threats. Beginning in FY05 and continuing thru FY07, NCW will seek to leverage ongoing Home Land Security (HLS)/US Coast Guard, and Navy Shipboard Protection System (SPS) efforts in diver defense, to develop an integrated anti-diver system or IADS, tailored to the expeditionary NCW harbor defense mission. Perform systems engineering analysis and integration activities associated with development of an Integrated Anti-Diver System (IADS) for Expeditionary Harbor Defense Operations.

FY06: Perform systems engineering analysis and integration activities to integrate IADS into the NCW C4ISR architecture. Research and develop next generation NCW surveillance and C4I systems capabilities, to include new or improved Tactical Command and Control system, Electronic Systems Management, Anti-Submarine Warfare, Data Fusion, Autonomous Sensors, Small Craft Situational Awareness/Combat ID, improved IR cameras, auto detect and track software, and improved data recording technologies.

FY07: Provide system engineering and software/system integration activities with next generation C4ISR systems and sensors with an emphasis on Undersea Warfare capabilities.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.411	0.210	0.210
RDT&E Articles Quantity				

FY05: Perform initial development testing of hardware and software components.
FY06/07: Development testing of hardware and software components, with emphasis on integration of new NCW technologies into Navy and Ashore AT/FP C4ISR architecture.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604230N Naval Support System	4011 Naval Coastal Warfare

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	5.152	2.275	2.285
FY 2007 Budget Estimate	3.092	0.517	1.515
Total Adjustments	-2.060	-1.758	-0.770
Summary of Adjustments			
SBIR	-0.060		
Program Adjustments			-0.020
Sea Eagle 3140	-2.000	-1.758	-0.750
Subtotal	-2.060	-1.758	-0.770

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604230N Naval Support System	4011 Naval Coastal Warfare

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPN 8120 Naval Coastal Warfare	25.745	30.468	10.172	12.970	12.755	13.017	13.295
Related RDT&E:							
	0.000	0.000	0.000	0.000	0.000	0.000	0.000

(U) E. ACQUISITION STRATEGY:

Not Applicable

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA 5**

PROGRAM ELEMENT: 0604230N Naval Support System

PROJECT NUMBER AND NAME: 4011 Naval Coastal Warfare

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WX	SSC CH/SSC SD		1.242	02/05	0.192	10/05	0.500	10/06	Continuing	Continuing	
Systems Engineering	WX	SSC CH/SSC SD		1.200	02/05	0.150	10/05	0.552	10/06	Continuing	Continuing	
Training Development	WX	SSC CH/SSC SD		0.200	02/05	0.075	10/05	0.240	10/06	Continuing	Continuing	
Subtotal Product Development			0.000	2.642		0.417		1.292		Continuing	Continuing	

Remarks:

Technical Data	WX	SSC CH/SSC SD		0.100	02/05	0.050	10/05	0.100	10/06	Continuing	Continuing	
Subtotal Support			0.000	0.100		0.050		0.100		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT 0604230N Naval Support System				PROJECT NUMBER AND NAME 4011 Naval Coastal Warfare							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Program Management Support	WX	SSC CH/SSC SD		0.300	02/05			0.073	10/06	Continuing	Continuing		
Travel	Various	Various		0.050	02/05	0.050	10/05	0.050	10/06	Continuing	Continuing		
Subtotal Management			0.000	0.350		0.050		0.123		Continuing	Continuing		
Remarks:													
ILS Support													
Subtotal ILS													
Total Cost			0.000	3.092		0.517		1.515		Continuing	Continuing		
Remarks:													

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																													DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**									PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System												PROJECT NUMBER AND NAME 4011 Naval Coastal Warfare											
Fiscal Year					2005				2006				2007				2008				2009				2010				2011			
					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																																
Engineering Milestones						PDR	CDR		PDR			CDR	PDR			CDR	PDR			CDR	PDR			CDR	PDR			CDR	PDR			CDR
Prototype Phase																																
Development																																
Delivery																																
Test & Evaluation Milestones																																
Development Test							DT				DT				DT				DT				DT				DT				DT	
Operational Test																																

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT 0604230N Naval Support System				PROJECT NUMBER AND NAME 4011 Naval Coastal Warfare			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Preliminary Design Review (PDR)		2Q	1Q	1Q	1Q	1Q	1Q	1Q
Critical Design Review (CDR)		3Q	4Q	4Q	4Q	4Q	4Q	4Q
Developmental Test and Evaluation		3Q	3Q	3Q	3Q	3Q	3Q	3Q

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**				R-1 ITEM NOMENCLATURE 0604231N - TACTICAL COMMAND SYSTEM			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	63.916	64.003	74.225	85.773	85.221	71.313	55.243
2213 MISSION PLANNING	14.627	9.221	35.279	37.627	32.013	20.473	9.560
0486 TACTICAL/MOBILE (TACMOBILE) SYSTEMS	1.163	1.121	1.478	1.516	1.549	1.554	1.598
0521 SHIPBOARD TACTICAL INTEL/GCCS-M INTELLIGENCE APPLICATIONS	2.939	2.945	1.139	3.717	3.789	3.845	3.914
0709 GCCS-M MARITIME APPLICATIONS	5.984	7.059	12.016	13.206	15.340	13.414	7.547
2009 TRUSTED INFORMATION SYSTEMS/JOINT CROSS DOMAIN EXCHANGE (JCDX)	1.464	2.116	1.690	1.562	1.379	0.385	0.396
2305 GCCS-M COMMON APPLICATIONS	9.721	9.632	4.285	5.719	6.952	7.177	7.414
2307 SHIPBOARD LAN/WAN/INTEGRATED SHIPBOARD NETWORK SYSTEMS	2.309	3.006	3.112	3.260	3.322	3.331	3.408
3032 NTCSS ENTERPRISE DATABASE AND MLDN	3.923	0.047	0.045	0.052	0.050	0.050	0.051
9123 FORCENET	15.234	15.256	15.181	19.114	20.827	21.084	21.355
9999 CONGRESSIONAL INCREASES	6.552	13.600	0.000	0.000	0.000	0.000	0.000

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

The Tactical Command System (TCS) upgrades the Navy's Command, Control, Computer and Intelligence (C3I) systems and processes C3I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises.

GCCS-M: 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 FORCEnet Command, Control, Communications, Computers, Intelligence and Reconnaissance (C4ISR) 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 Command, Control, Communications , Computers and Intelligence (C4I) capabilities for GCCS-M Afloat and GCCS-M Ashore TacMobile and Trusted Information Systems (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 Universal Network Information Exchange (UNIX)/personal computer (PC)/commercial-off -the-shelf (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. In FY05, GCCS-M will begin migration to Joint Command and Control (JC2) development in coordination with the Joint Command and Control (JC2) Program.

Tactical/Mobile (TacMobile) Systems, formerly Tactical Support Center/GCCS-M TACMOBILE: The TacMobile program provides evolutionary systems and equipment upgrades to support Maritime Surveillance 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), the Mobile Operations Control Centers (MOCCs), the Joint Mobile Ashore Support Terminals (JMASTs), and their equivalents. 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.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	R-1 ITEM NOMENCLATURE 0604231N - TACTICAL COMMAND SYSTEM

Trusted Information Systems (TIS): Trusted Information Systems (TIS) is a combination of the Joint Cross Domain eXchange (JCDX) system (formerly Ocean Surveillance Information System (OSIS) Evolutionary Development (OED)) and Radiant Mercury (RM), incorporating Multi-Level Security (MLS) web technologies and Multiple Levels of Security technologies in order to successfully provide accredited Cross Domain Solutions (CDS). Provides the core on-line, automated, near-real time, multi-level secure, information analysis, dissemination, and receipt capabilities that enable Combatant Commanders 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. JCDX 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.

Shipboard Local Area Network (LAN)/Wide Area Network (WAN) - Integrated Shipboard Network Systems (ISNS): The Integrated Shipboard Network Systems (ISNS) provides Navy ships with reliable, high-speed SECRET and UNCLASSIFIED Local Area Networks (LANs), providing the network infrastructure (switches and drops to the PC), Basic Network Information Distribution Services (BNIDS) and access to the Defense Information Security Network (DISN) Wide Area Network (WAN) (Secure and Nonsecure Internet Protocol Router Network (SIPRNET and NIPRNET) which are used by other hosted applications or systems such as Naval Tactical Command Support System (NTCSS), Global Command and Control System - Maritime (GCCS-M), Defense Messaging System (DMS), Navy Standard Integrated Personnel System (NSIPS), Navy/Marine Corps Portal (NMCP), Naval Mission Planning System (NAVMPS), Theater Battle Management Core Systems (TBMCS), and Tactical Tomahawk Weapons Control System (TTWCS) . It enables real-time information exchange within the ship and between afloat units, Component Commanders, and Fleet Commanders and is a key factor in the implementation of the Navy's portion of Joint Vision 2020. Funding supports the design, development and testing of the ISNS LAN for surface ships.

CENTRIXS - The Combined Enterprise Regional Information Exchange System (CENTRIXS) program provides Navy ships with a reliable, high-speed Local Area Network (LAN) that will provide access to the coalition (Coalition Four-Eyes (CFE), Global Counter Terrorism Task Force (GCTF), NATO Information Data Transfer System, Multinational Coalition Force Iraq (MCFI), CENTRIXS J and K, and all other bilateral and Community of Interest (COI)) Wide Area Network (WAN). It provides real-time information exchange between afloat units, Component Commanders, numbered Fleet Commanders and Commanders Atlantic (LANT)/Pacific (PAC) Fleet through the migration of existing legacy systems into the ISNS 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 capability. The CENTRIXS program maximizes the use of both COTS software and hardware resulting in dependence of commercial support. Engineering and technical support is provided so that existing systems will be upgraded/modified to keep pace with the commercial community.

Project funding supports the development of acquisition documentation essential to the program. The goal for the CENTRIXS program is to provide a cost-efficient operationally effective network that dramatically reduces the infrastructure requirements, while maximizing operational flexibility in a coalition environment. Multi-Level Tactical Coalition (MLTC) initiatives include Server Virtualization Development, which provides the ability to run multiple virtual servers on a single server. Additionally, this funding provides design, developing and testing of the Unit level Multi-Level Security (MLS)/MLTC system that will reduce drop requirements while minimizing server and client footprint and migration testing with the existing Force level design from Citrix software to Microsoft software baseline will reduce software costs.

Submarine Local Area Network (SubLAN): The SubLAN program provides Navy submarines, with reliable, high-speed SECRET and UNCLASSIFIED Local Area Networks (LANs). When the SubLAN network is combined with other subsystems, it will deliver an end to end network-centric warfare capability. The SubLAN program is comprised of two increments - SubLAN 1 and SubLAN 2. SubLAN 1 provides network infrastructure including an Unclassified Wireless Local Area Network (UWLAN), servers, and the Common PC Operating System Environment (COMPOSE), which provides the server and operating system environment for other applications such as Non Tactical Data Processing System (NTDPS) and Navy/Marine Corps Portal (NMCP). SubLAN 2 provides a full complement of SIPRNET drops, Special Compartmented Information (SCI) drops, additional switch/backbone capacity, and improved reliability upgrades to SubLAN 1. Funding supports the design, development and testing of the SubLAN for submarines.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-5**	R-1 ITEM NOMENCLATURE 0604231N - Tactical Command System

Navy Tactical Command Support System (NTCSS) Enterprise Database and Maritime Logistics Data Network (MLDN): This RDT&E Project funding supports design, development and testing of two components of the NTCSS web initiative, NTCSS Enterprise Database and 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-centrically 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.

Mission Planning: The goal of the Naval Mission Planning System (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 United States Navy (USN), United States Air Force (USAF), United States Army (USA), and United States Special Operations Command (USSOCOM) 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.

Congressional Increases:

FY 05 includes Congressional increases for 3D Common Operational Picture (COP) and AN/UYQ-70 Based IT-21 C4ISR upgrades.

FY06 includes Congressional increases for Tactical 3D Common Operational Picture (COP), AN/UYQ-70 Based IT-21 C4ISR upgrades, ACETEF upgraded RDT&E capability, Advanced Technology Sensor Payloads, and Naval Special Warfare UUV Sensors and C2 STTR.

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APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NA BA-5**	R-1 ITEM NOMENCLATURE 0604231N - Tactical Command System

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	59.499	51.177	50.640
FY07 President's Budget	63.916	64.003	74.225
Total Adjustments	4.417	12.826	23.585
Summary of Adjustments			
FORCEnet-A20-RP-Realign TacMobile Funding from PE 0204660N (O&M,N) to correct appropriation			0.421
FORCEnet Joint Mission Planning System			27.200
Global Command and Control - Maritime (GCCS-M)			1.000
Contract Support Reduction			-2.852
Navy Working Capital Fund (NWCF) Civilian Personnel (CIVPERS) Efficiencies			-0.168
UHF SATCOM Integrated Waveform			-2.500
Navy Tactical Command Support System (NTCSS) Enterprise Database	6.000		
Small Business Innovation Research (SBIR)	-1.254		
Nuclear Physical Security	0.012		
FY05 Omnibus Reprogramming of funds	-2.000		
Trusted Foundry	0.086		
Inflation Rate Change			0.418
Civilian Personnel Pay Raise Rate Changes			0.064
Section 8026(f): Federally Funded Research and Development Centers		-0.004	
Section 8125: Revised Economic Assumptions		-0.235	
Section 8122: Assumed Management Improvements	-0.018		
Section 8131: Non-Statutory Funding Set Asides	-0.035		
Department of Energy Transfer	-0.050		
Congressional Adds		13.600	
Congressional Action 1% Reduction		-0.535	
Miscellaneous Navy Adjustments	1.676		0.002
Subtotal	4.417	12.826	23.585

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-5**	R-1 ITEM NOMENCLATURE 0604231N - Tactical Command System

(U) B. PROGRAM CHANGE SUMMARY (Continued):

(U) Schedule:

Mission Planning (project 2213)

Schedule: Acquisition Milestones from President's Budget FY05 (JV1=JMPS V1.0 and JC1=JMPS V1.1 to follow software configuration naming convention)

GENERAL INFORMATION:

TEST AND EVALUATION MILESTONES
Unique Planning Component (UPC) changed to Mission Planning Environment (MPE). MPE System Test and Integration/Validation dates changed to 1Q-4Q FY04.
JMPS V1.1 Operational Test Readiness Review (OTRR) was completed 2Q FY05.

PRODUCTION MILESTONES
JMPS V1.1 official Initial Operating Capability (IOC) date, as a result of a formalized OTRR event, for the fielding of the F/A-18 19C/JMPS MPE, is scheduled for 1Q FY06. JMPS V1.1 was approved for a very limited fielding release with the E-2C MPE after an Operational Assessment in September 04 (4Q FY04).

JMPS V1.2.3 and related milestones are identified
JMPS V1.2.3/1.2.4 FQT is planned for 2Q/3Q FY05, respectively. OTRR is planned for 2Q/3Q FY06 respectively.
JMPS V1.5 to 1.8 and related milestones are identified.

TacMobile Systems (project 0486)

Schedule updated to reflect reactivation of the TacMobile program as a post-milestone C Acquisition Category (ACAT) III program, separate but related to the GCCS-M program.

ShipBoard Tactical Intel/GCCS-M Intelligence Applications (project 0521)/GCCS-M Maritime Applications (project 0709), and GCCS-M Common Applications (project 2305)

Schedule reflects planned convergence with Joint Command and Control (JC2), Full Rate Production (FRP) for GCCS-M software version 4.0 and Milestone B for version 4.1.

(U) Technical: Not applicable

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604231N, TACTICAL COMMAND SYSTEM**	PROJECT NUMBER AND NAME 2213 MISSION PLANNING (NavMPS)	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2213 MISSION PLANNING	14.627	9.221	35.279	37.627	32.013	20.473	9.560	
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 is 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/XP core/framework, a mission-planning infrastructure of basic databases, management tools, and framework services, as well as common mission planning components. An individual JMPS mission-planning environment (MPE) is a combination of the JMPE together with platform/service unique planning components and the necessary system hardware to meet user mission planning needs.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604231N, TACTICAL COMMAND SYSTEM**	PROJECT NUMBER AND NAME 2213 MISSION PLANNING (NavMPS)	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost			1.830	
RDT&E Articles Qty				

Common Capabilities (CC) software augments core mission planning capabilities with capabilities common among a group of planners. CC is a software module, installable into the Mission Planning Environment (MPE) that contains an extension of the basic mission planning capability, which is useful to more than one aircraft platform. CC will be developed as common software tools to automate mission planning in the expeditionary operations and maritime environments. CC such as Mission Rehearsal, Collaboration, Query and Process Imagery, Intel, Communications Planning, Asset Management, Anti-Submarine Warfare (ASW), etc. Portable Flight Planning Seat (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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost			1.500	
RDT&E Articles Qty				

JMPS Framework Version 1.6 will overlap with Framework Version 1.5. The contract award date for FW Version 1.6 is scheduled for early 2007. Navy MPEs will be continuing their development efforts to capture additional common capabilities, as well as, developing to a potential new operating system (Longhorn). The increase in funding for FW 1.6 will be used to support the Navy's DT/OT support, integration and systems of systems testing of MPEs to capture planned common capabilities.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604231N, TACTICAL COMMAND SYSTEM**	PROJECT NUMBER AND NAME 2213 MISSION PLANNING (NavMPS)	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost			10.500	
RDT&E Articles Qty				

JMPS Framework Version 1.5 is scheduled for contract award early in 2006 and its development timeframe will overlap with FW Version 1.6. Previous funding constraints prohibited the current Navy MPEs from migrating to FW. Versions 1.3 and 1.4 with the AF MPEs. The increase in funding for FW 1.5 will be used to support the Navy's DT/OT support , integration and systems of systems testing of MPEs to capture planned common capabilities. Additionally, the Navy's UPCs will be faced with migrating to a ".net" environment post AF MPEs' migration effort during FW 1.3/1.4 timeframe. Scheduled capabilities for this framework include battle space net centric environment functionality, and Global Information Grid - Enterprise Services (GIG-ES). Additional common capabilities will also include Dynamic Replanning and retargeting efforts.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	8.801	7.862	20.249	
RDT&E Articles Qty				

JMPS 1.0 and 1.1 Development Effort-JMPS 1.0 and 1.1 effort will include DT/OT support for JMPS Mission Planning Environments (MPEs) fielding, assessment of JMPS 1.1, builds to correct discrepancies discovered during systems of systems integration testing, and contract incentive fee. All JMPS 1.1 efforts, including engineering assessments, logistics and management support will be ending in CY 2005. Post CY 2005, subsequent MPEs will ultimately be migrating to FW 1.5.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	5.826	1.359	1.200	
RDT&E Articles Qty				

JMPS Version 1.2.3 efforts, DOD/CIO mandate for IPV6 with the migration to XP operating system, will be complete by end of 2006. Future framework and MPE efforts will be developed on framework 1.5 and subsequent frameworks, i.e., 1.6, 1.7, 1.8.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604231N, TACTICAL COMMAND SYSTEM**	PROJECT NUMBER AND NAME 2213 MISSION PLANNING (NavMPS)	

C. OTHER PROGRAM FUNDING SUMMARY	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 287600 TAC A/C Mission Planning System (OPN)	9.035	7.753	8.316	8.648	8.842	9.006	9.151	Continuing	Continuing
PE 0208006F Air Force Mission Support System (Total)	105.003	138.475	130.626	102.900	96.489	98.685	99.822	Continuing	Continuing

D. ACQUISITION STRATEGY: The Joint Mission Planning System (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. Phase I was a combined USAF/USN effort that obtained various studies, segment architect concept, design to cost estimates, and an architecture development statement of work. The Program's Phase I was planned to identify reduced costs strategies through software reuse from both USN Tactical Automated Mission Planning System (TAMPS) and USAF Air Force Mission Support System (AFMSS) legacy mission planning programs. Additionally, this phase provided a risk reduction plan by identifying the most effective migration of existing mission planning systems. Phase I was awarded to two contractors. Post Phase I, during the down select process, one contractor was selected to develop the JMPS architecture work and Version 1.0 mission planing components. After Version 1 components have been developed, Version 1.1 component development will commence. Version 1.1 component development is required to retire TAMPS for the USN and meet F-15 planning requirements for the AF. Version 1.1 will be developed under a separate architect framework contract. All other combat and force level components will be acquired through a mission planning enterprise and open competition.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA 5 | PROGRAM ELEMENT: 0604231N, TACTICAL COMMAND SYSTEM | PROJECT NUMBER AND NAME: 2213 MISSION PLANNING

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Common Capabilities	MIPR	DEPARTMENT OF THE AIR FORCE, Hanscor						1.830	11/15/2006	Continuing	Continuing	
Framework 1.5	MIPR	DEPARTMENT OF THE AIR FORCE, Hanscor						10.500	11/15/2006	Continuing	Continuing	
Framework 1.6	MIPR	DEPARTMENT OF THE AIR FORCE, Hanscor						1.500	11/15/2006	Continuing	Continuing	
Primary Software Dev JMPS 1.2.3	SS/CPIF	NGIT, VA	76.697	5.826	11/15/2004	1.359	11/15/2005	1.200	11/15/2006		12.222	
SUBTOTAL PRODUCT DEVELOPMEN			76.697	5.826		1.359		15.030			12.222	
Remarks:												
SUPPORT												
Integrated Logistics Support	WX/RX	SPAWAR, Phila, PA	6.440	1.189	11/15/2004	1.189	11/15/2005	6.189	11/15/2006	Continuing	Continuing	
SUBTOTAL SUPPORT			6.440	1.189		1.189		6.189		Continuing	Continuing	
Remarks:												
TEST & EVALUATION												
Test and Evaluation	WX	NAWCWD, Pt. Mugu, CA	3.515	4.097	11/15/2004	4.040	11/15/2005	10.802	11/15/2006	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			3.515	4.097		4.040		10.802		Continuing	Continuing	
Remarks:												
MANAGEMENT												
Management	WX	NAWCAD, Pax River, MD	15.704	3.515	11/15/2004	2.633	11/15/2005	3.258	11/15/2006	Continuing	Continuing	
SUBTOTAL MANAGEMENT			15.704	3.515		2.633		3.258		Continuing	Continuing	
Remarks:												
Total Cost			102.356	14.627		9.221		35.279		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	0604231N Tactical Command System	2213 MISSION PLANNING

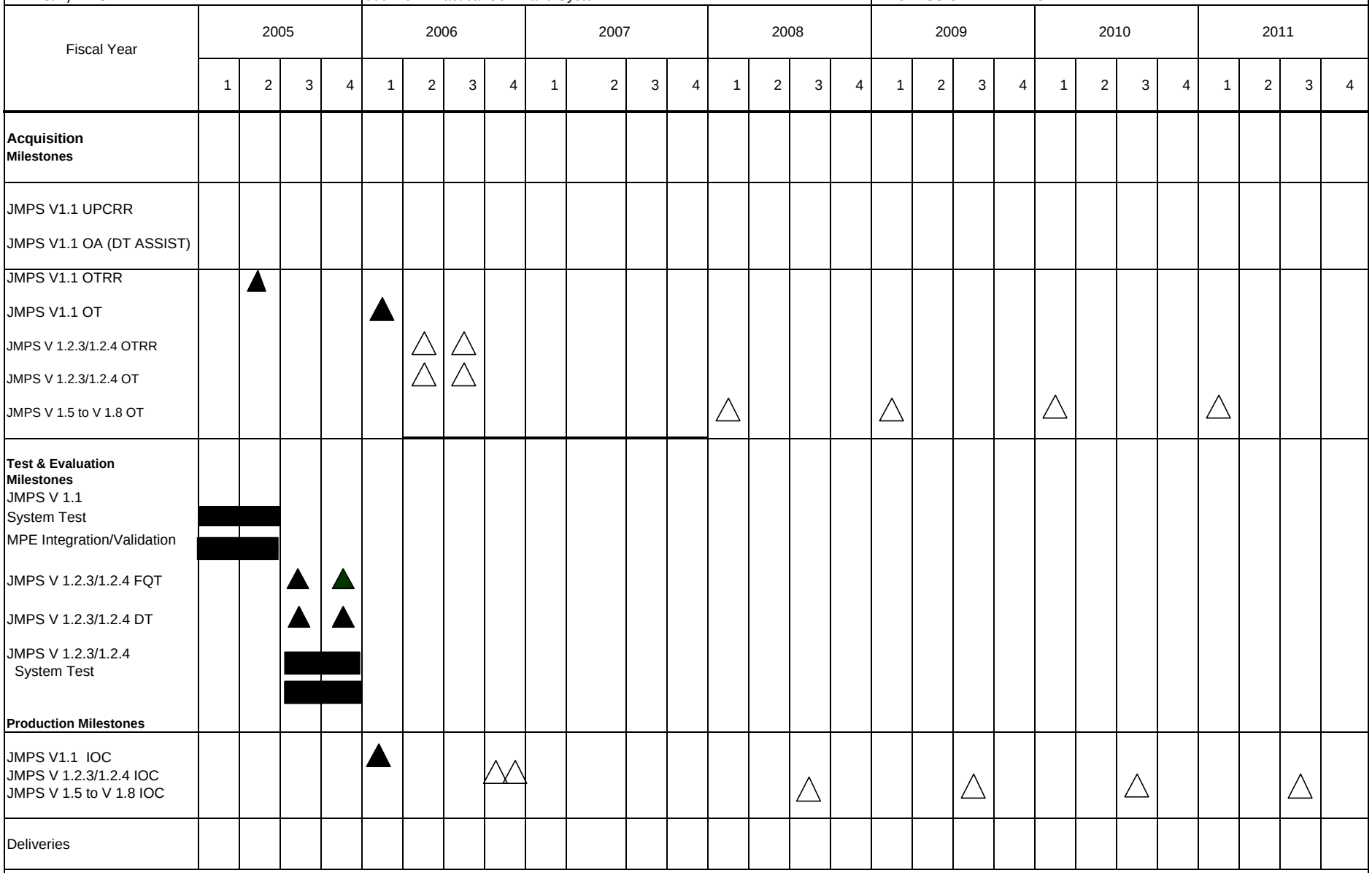

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Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**				PROJECT NUMBER AND NAME 2213 MISSION PLANNING			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acquisition Milestones							
JMPS V 1.1							
JMPS 1.1 UPCRR							
JMPS 1.1 OA (DT ASSIST)							
JMPS 1.1 OTRR	2Q						
JMPS 1.1 OT		1Q					
JMPS V1.2.3/1.2.4							
JMPS V 1.2.3/1.2.4 OTRR		2Q/3Q					
JMPS V 1.2.3/1.2.4 OT		2Q/3Q					
JMPS V 1.5 to 1.8							
JMPS V 1.5 to 1.8 OT				1Q	1Q	1Q	1Q
Test & Evaluation Milestones							
JMPS V 1.1							
System Test	1Q-2Q						
MPE Integration/Validation	1Q-2Q						
JMPS 1.2.3/1.2.4							
JMPS 1.2.3/1.2.4 FQT	3Q/4Q						
JMPS DT	3Q/4Q						
System Test JMPS V 1.2.3/1.2.4	3Q-4Q						
JMPS V 1.5 to 1.8 FQT			3Q	3Q	3Q	3Q	
Production Milestones							
JMPS V 1.1 IOC		1Q					
JMPS V 1.2.3/1.2.4 IOC		4Q/4Q					
JMPS V 1.5 to 1.8 IOC				3Q	3Q	3Q	3Q

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EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604231N - TACTICAL COMMAND SYSTEM			0486 Tactical/Mobile (TacMobile) Systems			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**1.163**	**1.121**	**1.478**	**1.516**	**1.549**	**1.554**	**1.598**
RDT&E Articles Qty							

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

Tactical/Mobile (TacMobile) Systems, formerly Tactical Support Center/GCCS-M TACMOBILE: The 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), the Mobile Operations Control Centers (MOCCs), and the Joint Mobile Ashore Support Terminal (JMAST). 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 and their equivalents provide C4I capability, air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MOCCs and their equivalents are scalable and mobile versions 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 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 Maritime Aircraft (MMA) and Broad Area Maritime Surveillance Unmanned Aerial Vehicle (BAMS UAV).

The Joint Mobile Ashore Support Terminal (JMAST) supports the Fleet Commanders, Joint Task Force (JTF) Commanders, deployed Components, and other military commanders from forward deployed bases or operational sites ashore that are not equipped with C4I facilities. It provides the JTF, Navy Component, and other military commanders with the mobile ability to command, control and communicate with assigned forces via voice, video, and data media forms, during all aspects of military operations, including joint, combined, and coalition operations.

The TacMobile program has been designated as an Acquisition Category (ACAT) III weapons system program by Program Executive Office (PEO) C4I and Space and is no longer directly associated with the GCCS-M program. The TacMobile program follows an Evolutionary Acquisition approach, which provides a mechanism for adding a series of future capabilities that maintain and enhance the operational relevance of the systems provided.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0486 Tactical/Mobile (TacMobile) Systems

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.199	0.205	0.140
RDT&E Articles Quantity			

Develop interface documentation based on joint and coalition Satellite Communications (SATCOM) and line of sight radios, cryptographic units and antenna technology. Continued development activities necessary to stay current with joint and coalition SATCOM and line of sight radios, cryptographic units, antenna technology and the USN/DoD satellite replacement programs. Perform necessary analysis and update TacMobile technical Roadmap documentation to ensure compliance with Navy and Joint communications interoperability requirements (Forcenet, Global Information Grid (GIG), etc) and implementations that support network-centric (NetCentric), Internel Protocol (IP) addressing. Conduct testing of air platform support systems and data exchange devices for incorporation into baseline systems for deployment.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.453	0.350	0.350
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. Developed a detailed set of requirements for follow-on system to include NetCentric, IP addressable functionality. Continued development of new capabilities to support post-flight analysis of acoustic data collected from similar capabilities development for Maritime Patrol and Reconnaissance Aircraft (MPRA).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0486 Tactical/Mobile (TacMobile) Systems

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.355	0.338	0.217
RDT&E Articles Quantity			

Develop new capabilities to support emerging aircraft weapons and non-acoustic sensors on P-3C Anti-Submarine Warfare (ASW) Improvement Program (AIP)/ASW Maritime Improvement Program (AMIP), P-3C Baseline Modification Upgrade Program (BMUP), and other derivative aircraft. Analyze Broad Area Maritime Surveillance Unmanned Aerial Vehicles (BAMS UAV) and Multi-mission Maritime Aircraft (MMA) specifications and concept documents for impact on TSC and MOCC systems. Developed Aircraft Tape Operating System (ATOS) interfaces for emerging aircraft data transport devices. Develop new ground support capabilities concurrently with related, new capabilities developed for Maritime Patrol and Reconnaissance Aircraft (MPRA).

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.156	0.228	0.350
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. Continued to develop interfaces for emerging aircraft data transport devices. Performed testing on new software and hardware components. Perform necessary analysis and update TacMobile Roadmap documentation to ensure compliance with Navy and Joint sensor interoperability requirements (Forcenet, GIG, etc.) and implementations that support NetCentric, IP addressable capabilities.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0486 Tactical/Mobile (TacMobile) Systems

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.421
RDT&E Articles Quantity			

Investigate and initiate transition to Service Oriented Architecture (SOA) and NCES elements for TacMobile capabilities. Perform necessary analysis and update TacMobile Roadmap and documents in support of FORCEnet, GiG and other architectures (Net Ready Key - Performance Parameters (NR-KPP), Internet Service Provider (ISP), etc). Develop detailed requirements linking TacMobile systems and development directly to Forcenet, GiG and next generation communications systems. Perform necessary analysis for GiG repository capabilities for existing legacy and future Maritime Patrol and Reconnaissance Aircraft (MPRA) operations. Investigate and initiate requisite level of support for Distributed Common Ground System-Navy (DCGS-N) capabilities in TacMobile community. Perform necessary analysis to plan and implement network enabled MPRA required components of Undersea Warfare Decision Support System (USW DSS).

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - TACTICAL COMMAND SYSTEM	0486 Tactical/Mobile (TacMobile) Systems

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TacMobile (OPN - BLI 2246)	5.066	5.200	5.238	5.418	17.684	22.374	22.824
TacMobile (OPN - BLI 2608)	10.707	12.139	5.856	6.014	12.683	15.955	16.852

(U) D. ACQUISITION STRATEGY:

Evolutionary acquisition. Increment 1 supports Fleet introduction of GCCS-M 4.0 and aircraft systems upgrades. Future increments will support the GCCS-M /JC2 migration, and introduction of the P-8A Multi-mission Maritime Aircraft (MMA).

(U) E. MAJOR PERFORMERS:

Space and Naval Warfare Systems Command (SPAWAR) Systems Center Charleston (SSC-CH) performs all design, development and integration of new capabilities into the Tactical/Mobile systems.

(U) G. METRICS:

Earned Value Management is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	WX	SSC CH	19.328	0.308	VARIOUS	0.290	VARIOUS	0.521	VARIOUS	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			19.328	0.308		0.290		0.521		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	WX	SSC CH	34.620	0.595	VARIOUS	0.581	VARIOUS	0.627	VARIOUS	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			34.620	0.595		0.581		0.627		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604231N - Tactical Command System				PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR	3.225	0.060		0.040		0.060		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			3.225	0.060		0.040		0.060		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	WX	SSC CH	10.731	0.200	VARIOUS	0.210	VARIOUS	0.270	VARIOUS	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			10.731	0.200		0.210		0.270		Continuing	Continuing	
Remarks:												
Total Cost			67.904	1.163		1.121		1.478		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

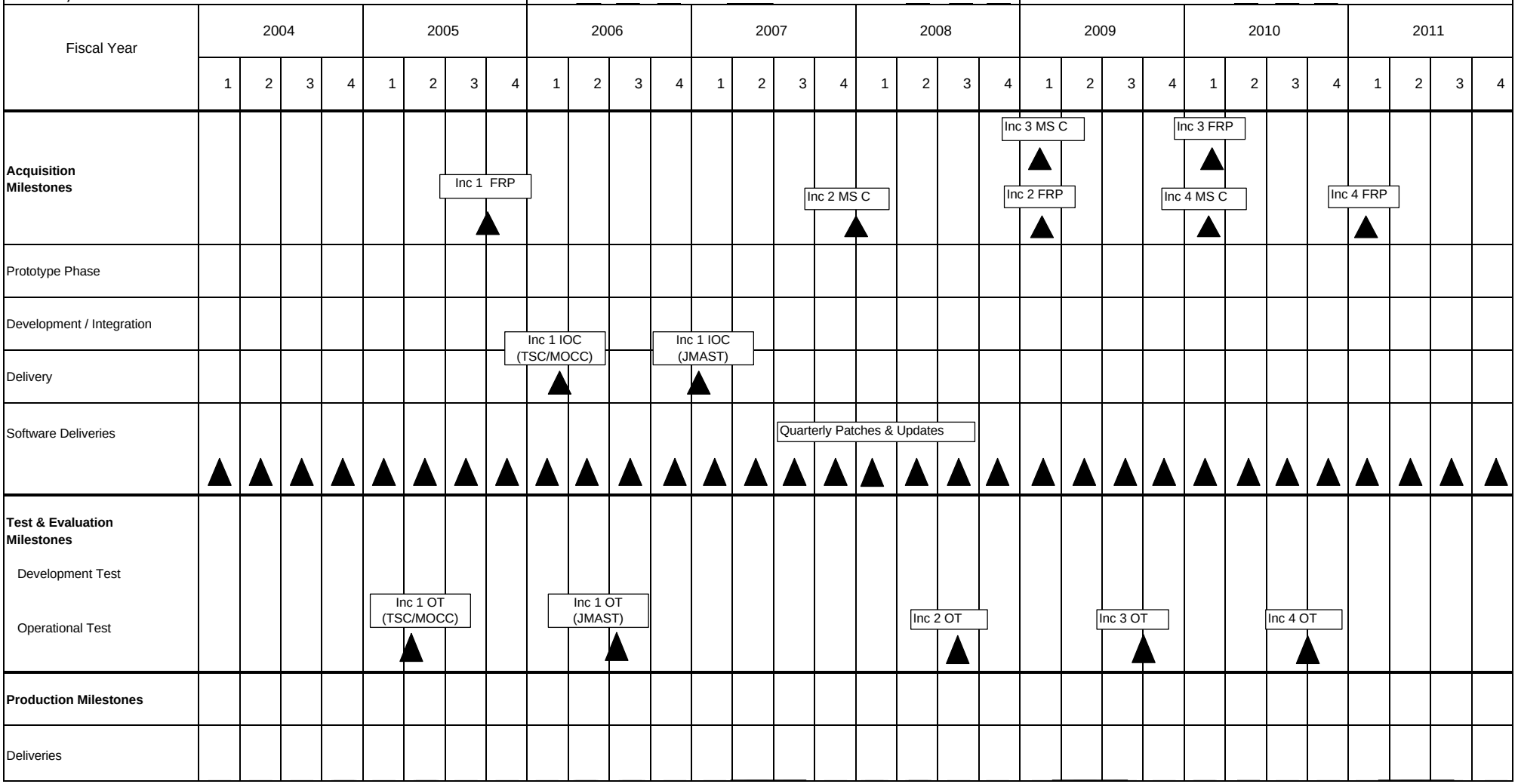
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N - TACTICAL COMMAND SYSTEM

PROJECT NUMBER AND NAME: 0486 Tactical/Mobile (TacMobile) Systems, formerly Tactical Support Center/GCCS-M TACMOBILE



R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems, formerly Tactical Support Center/GCCS-M TACMOBILE			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software Delivery (quarterly)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4
Operational Test (Increment 1) (TSC/MOCC)		Q2						
Full Rate Production (Increment 1)		Q4						
Initial Operational Capability (Increment 1) (TSC/MOCC)			Q1					
Developmental Test (Increment 1) (JMAST)			Q2					
Operational Test (Increment 1) (JMAST)			Q3					
Initial Operational Capability (Increment 1) (JMAST)				Q1				
Developmental Test (Increment 2)				Q4				
Milestone C (Increment 2)					Q1			
Operational Test (Increment 2)					Q3			
Full Rate Production (Increment 2)						Q1		
Developmental Test (Increment 3)					Q4			
Milestone C (Increment 3)						Q1		
Operational Test (Increment 3)						Q3		
Full Rate Production (Increment 3)							Q1	
Developmental Test (Increment 4)						Q4		
Milestone C (Increment 4)							Q1	
Operational Test (Increment 4)							Q3	
Full Rate Production (Increment 4)								Q1

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**2.939**	**2.945**	**1.139**	**3.717**	**3.789**	**3.845**	**3.914**
RDT&E Articles Qty							

(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 the Modernized Integrated Database (MIDB) 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. In FY05, GCCS-M will begin migration to the Joint Command and Control (JC2) architectural framework in coordination with the Joint Command and Control (JC2) Program. Efforts in FY06-07 will support the continued migration of capabilities as the JC2 architecture is further refined.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications

(U) B. Accomplishments/Planned Program

C2 Fires Integration	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.850	0.849	0.328
RDT&E Articles Quantity			

FY05 - Command and Control (C2)/Intelligence, Surveillance and Reconnaissance (ISR) Integration: Provided a standard set of integrated, linked, tools and services that access existing National, Theater, Service, and Coalition imagery and intelligence resources. Accomplishments included a successful Operational Evaluation (OPEVAL) of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - C2/ISR Integration : Provide for the continued migration of standardized, linked intelligence and imagery software tools and services to the Joint Command and Control architectural framework.

FY07 - C2/ISR Integration : Continue to provide for the migration of standardized, linked intelligence and imagery software tools and services to the Joint Command and Control architectural framework.

Imagery/Video Processing	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.631	0.661	0.217
RDT&E Articles Quantity			

FY05 - Imagery Exploitation: Provided the capability to access and perform manual and automated correlation of national, organically collected, and other imagery and full motion imagery with multiple, dissimilar sources. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Imagery Exploitation: Provide the capability for Commanders, their battle staffs, and supporting intelligence analysts to exploit ISR from current/next generation UAV platforms and national sensors within the Joint Command and Control architectural framework.

FY07 - Imagery Exploitation: Continue to provide the capability for Commanders, their battle staffs, and supporting intelligence analysts to exploit ISR from current/next generation UAV platforms and national sensors within the Joint Command and Control architectural framework.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications

(U) B. Accomplishments/Planned Program

Threat OOB and C&P	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.458	1.435	0.594
RDT&E Articles Quantity			

FY05 - Intelligence Data & Display: Provided the capability to develop, manage and disseminate the Order of Battle and weapons systems characteristics and performance parameters including integration of tactical and near real-time revisions to the Order of Battle. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from Naval Center for Tactical Systems Ineroperability (NCTSI) and Joint Interoperability Test Command (JITC) and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Enhanced intelligence related production tools such as Candidate Target List and Order of Battle Reports (OBREP). Provide intelligence data and tools in a service-oriented architecture necessary to transition to the JC2 architecture, including enhanced dissemination tools such as sending intelligence data directly to the Common Operational Picture (COP), nominating a unit or facility as a target, sending email, posting, and exporting data to eXtensible Markup Language (XML) or Microsoft (MS) Excel.

FY07 - Enhanced intelligence related production tools such as Candidate Target List and Order of Battle Reports (OBREP). Continue to provide intelligence data and tools in a service-oriented architecture necessary to transition to the JC2 architecture, including enhanced dissemination tools such as sending intelligence data directly to the COP, nominating a unit or facility as a target, sending email, posting, and exporting data to XML or MS Excel.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GCCS-M (OPN - BLI 2608)	35.224	64.115	38.804	68.938	69.134	93.991	88.093

(U) D. ACQUISITION STRATEGY:

N/A

(U) E. Major Performers:

Northrop Grumman Mission Systems (NGMS) is the prime contractor that provides software development and integration for GCCS-M. SPAWAR System Center San Diego provides support as the Government testing facility.

(U) F. METRICS:

Earned Value Management is used for metrics reporting and risk management.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	19.011	0.381	VARIOUS	0.380	VARIOUS	0.250	VARIOUS	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			19.011	0.381		0.380		0.250		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	26.733	2.523	VARIOUS	2.530	VARIOUS	0.859	VARIOUS	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			26.733	2.523		2.530		0.859		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR	2.056	0.000		0.000		0.000		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			2.056	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.149	0.035	VARIOUS	0.035	VARIOUS	0.030	VARIOUS	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			2.149	0.035		0.035		0.030		Continuing	Continuing	
Remarks:												
Total Cost			49.949	2.939		2.945		1.139		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

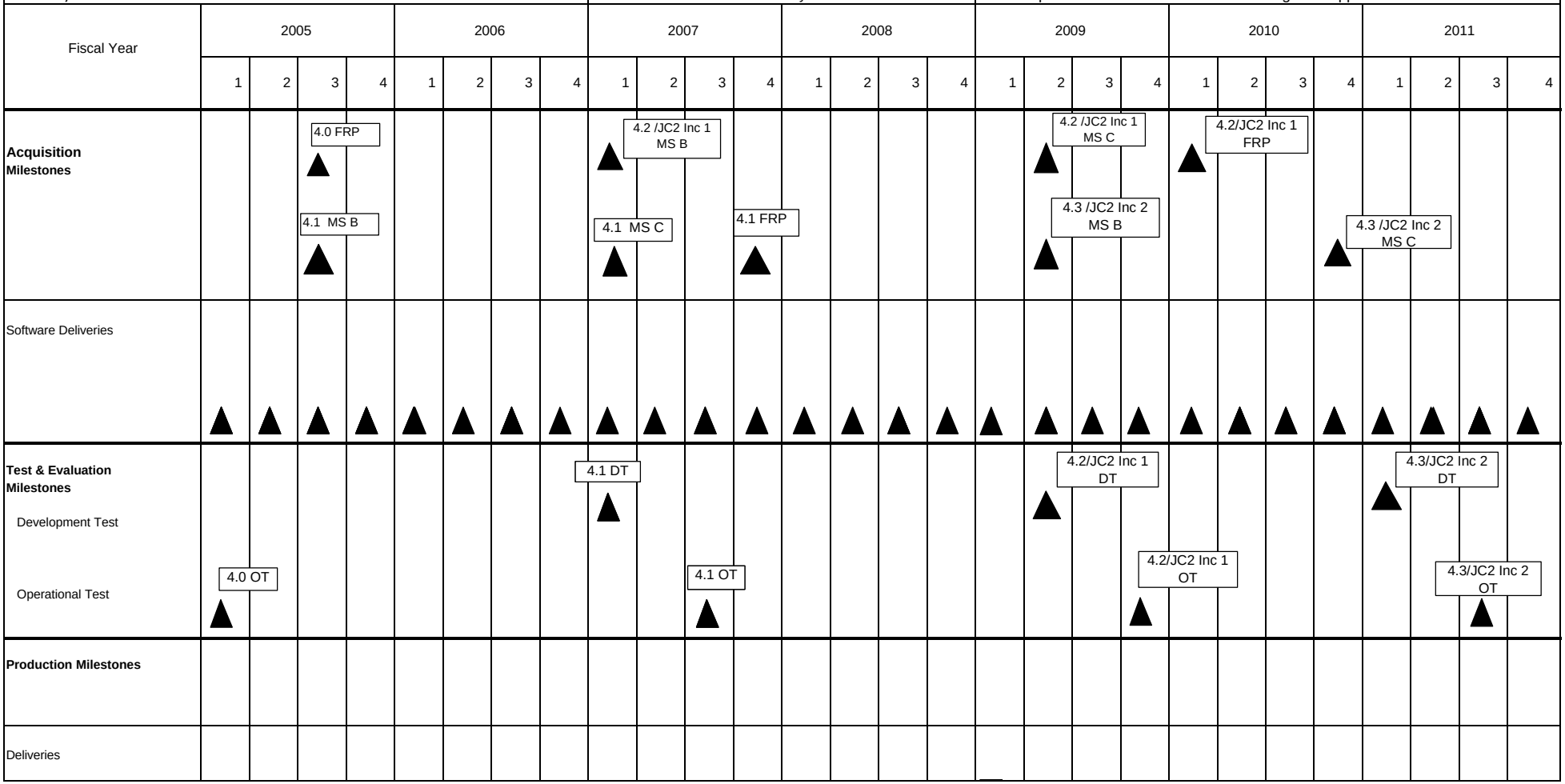
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N - Tactical Command System

PROJECT NUMBER AND NAME: 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications



R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Software Delivery (quarterly)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	
Operational Test 4.0	Q1							
Full Rate Production 4.0	Q3							
Milestone B 4.1	Q3							
Preliminary Design Review 4.1	Q4							
Critical Design Review 4.1		Q1						
Design Readiness Review 4.1		Q2						
Integrated Logistics Assessment 4.1		Q4						
Milestone B 4.2 (JC2 Inc 1)			Q1					
Milestone C 4.1			Q1					
Development Test 4.1			Q1					
Operational Test 4.1			Q3					
Full Rate Production 4.1			Q4					
Preliminary Design Review 4.2				Q1				
Critical Design Review 4.2				Q2				
Design Readiness Review 4.2				Q3				
Integrated Logistics Assessment 4.2					Q1			
Milestone C 4.2 (JC2 Inc1)					Q2			
Milestone B 4.3 (JC2 Inc 2)					Q2			
Development Test 4.2 (JC2 Inc 1)					Q2			
Operational Test 4.2 (JC2 Inc 1)					Q4			
4.2 (JC2 Inc 1 Full Rate Production)						Q1		
Milestone C 4.3 (JC2 Inc 2)						Q4		
Development Test 4.3 (JC2 Inc 2)							Q1	
Operational Test 4.3 (JC2 Inc 2)							Q3	

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding ($000)							DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0521 Shipboard Tac Intel/GCCS-M Intel App		
Program Title	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
GCCS-M INTEL APPLICATIONS	-	-	-	-	-	-	-

GCCS-M software is developed under an engineering services based contract. Maximum Government liability is limited to the total obligated value of annually awarded task orders.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**5.984**	**7.059**	**12.016**	**13.206**	**15.340**	**13.414**	**7.547**
RDT&E Articles Qty							

(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 Commander in Chiefs (CINCs), 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. In FY05, GCCS-M will begin migration to Joint Command and Control (JC2) development in coordination with the Joint Command and Control (JC2) Program. Efforts in FY06-07 will support the continued migration of capabilities as the JC2 architecture is further refined.

Undersea Superiority: This effort will significantly enhance tactical units ability to perform precision engagements by consolidating the common operational and undersea tactical pictures into a single comprehensive C2 picture, addressing the requirement of Warfighters and significantly improving interoperability. This effort is necessary to address FORECEnet compliance requirements and transition operational capability currently dependent on standalone, stovepiped systems into a Service Oriented Architecture that will make data available and interoperable with other C4I systems. By combining situational awareness data with data derived from combat systems, the warfighter is provided with a single, integrated picture of the battlespace.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0709 GCCS-M Maritime Applications

(U) B. Accomplishments/Planned Program

Readiness/Scheduling/JPN/TADILS/Broadcasts	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.993	3.300	3.009
RDT&E Articles Quantity			

FY05 - Force Readiness/Mission Preparation/Maritime Execution Management/Undersea Warfare (UW): Facilitated access to and display of current ship readiness data including Aviation Maintenance Reports, Casualty Report (CASREP) and Status of Resources and Training Systems Reports (SORTSREP). Addressed the legislated requirement to access historical unit movement and status data. Provided the capability to report maritime readiness to the appropriate Joint Commander per the Joint Commander's instruction. Provided the capability to manage Maritime assets including deployment scheduling, pre-positioning and repositioning of units and stores, and allocation and reallocation of units to mission. Provided the capability to plan and manage the employment of undersea assets including water-space assignment, de-confliction and simultaneous monitoring of multiple undersea assets. Provided a bi-directional interface between the UW picture and the Common Operational Picture (COP) to facilitate Blue and Red force UW situational awareness. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Force Readiness/Maritime Mission Planning and Execution: Provide the capability to plan and manage, within a Joint C2 architectural framework, the prepositioning and repositioning of units and stores and the allocation and reallocation of units for next-generation Force Structure planning and execution management per Office of the Secretary of Defense (OSD) and Chief of Naval Operations (CNO) mandates. This capability includes the means for the assignment, deconfliction and monitoring of multiple undersea assets.

FY07 - Force Readiness/Maritime Mission Planning and Execution: Continue to provide the capability to plan and manage, within a Joint C2 architectural framework, the prepositioning and repositioning of units and stores and the allocation and reallocation of units for next-generation Force Structure planning and execution management per OSD and CNO mandates. This capability includes the means for the assignment, deconfliction and monitoring of multiple undersea assets.

Spectral and Environmental Analysis	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.526	0.664	0.717
RDT&E Articles Quantity			

FY05 - Electronic Warfare (EW): Provided EW analytical tools that can access, display and analyze inputs from relevant shipboard sensors. Managed and exploited the electromagnetic spectrum, including the development of electromagnetic exploitation plans using shipboard systems involved in operations against electromagnetic targets. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Provide the capability to develop, manage, and execute an Emission Control Plan within a Joint C2 framework in order to prevent exploitation of next-generation emitters by emergent/future hostile collection capabilities.

FY07 - Continue to provide the capability to develop, manage, and execute an Emission Control Plan within a Joint C2 framework in order to prevent exploitation of next-generation emitters by emergent/future hostile collection capabilities.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0709 GCCS-M Maritime Applications

(U) B. Accomplishments/Planned Program

Aircraft Mission Planning	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.850	0.886	1.020
RDT&E Articles Quantity			

FY05 - C2/Maritime Patrol Aircraft Ground Station Integration: Facilitated shared situational awareness by integrating information from maritime patrol aircraft sensors, emitters and real time event reporting networks into the Common Operational Picture (COP). Provided a bi-directional interface between the Maritime Patrol Aircraft (MPA) and the COP, as well as the capability to prepare aircrew briefings, show aircraft status and provide mission reconstruction. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Migrate MPRA unique shared situational awareness capabilities and systems interfaces into the JC2 architectural framework, including those brought by the next generation Multi-Mission Maritime Aircraft (MMA) and Unmanned Aerial Vehicles (UAVs). This capability will support the real-time prosecution of hostile targets identified and localized by MPRA/MMA/UAV assets.

FY07 - Investigate, initiate, and implement transition plans to future releases of GCCS-M 4.x/JC2. Perform necessary analysis and update TacMobile technical Roadmap documentation to ensure compliance with Navy and Joint command and control interoperability requirements (Force net, GIG, etc) and implementations. Conduct testing of air platform support systems to utilize take advantage of capabilities inherent in future GCCS-M 4.x increments. Ensure continued interoperability with GCCS-M planned increments.

Testing	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.082	2.209	2.270
RDT&E Articles Quantity			

FY05 - Testing: Provided for the conduct of holistic, end-to-end system testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Provide for the continued efforts of holistic, end-to-end systems engineering and testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies.

FY07 - Continue to provide for the continued efforts of holistic, end-to-end systems engineering and testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.533	0.000	0.000
RDT&E Articles Quantity			

FY05 - Architecture: Mine Counter Measures (MCM) / Naval Coastal Warfare (NCW) Command and Control: Facilitated MCM situational awareness through integration with shipboard mine warfare counter measure systems. Provided a bi-directional interface between the MCM picture and the COP as well as support to the planning, evaluation, and asset management required for MCM operations. Facilitated scaled, shared situational awareness by integrating information from visual observation and other sources into the COP. Provided a bi-directional interface between the visual observation and other sources and the COP. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	0709 GCCS-M Maritime Applications

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	5.000
RDT&E Articles Quantity			

FY 07 - Undersea Superiority: This effort will accelerate integration of undersea warfare (USW) tactical decision aids and data sources used by the Surface Combatant Commander (SCC) and USW users into a Service Oriented Architecture for transition to Joint Command and Control (JC2).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - Tactical Command System	0709 GCCS-M Maritime Applications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GCCS-M (OPN - BLI 2608)	35.224	64.115	38.804	68.938	69.134	93.991	88.093

(U) D. ACQUISITION STRATEGY:

N/A

(U) E. Major Performers:

Northrop Grumman Mission Systems (NGMS) is the prime contractor that provides software development and integration for GCCS-M. SPAWAR System Center San Diego provides support as the Government testing facility. Maxim Systems provides systems engineering support for GCCS-M.

(U) F. METRICS:

Earned Value Management is used for metrics reporting and risk management.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	12.762	0.500	VARIOUS	0.750	VARIOUS	2.657	VARIOUS	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			12.762	0.500		0.750		2.657		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	51.274	4.982	VARIOUS	5.718	VARIOUS	7.609	VARIOUS	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			51.274	4.982		5.718		7.609		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR	1.090	0.000		0.045		0.760		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			1.090	0.000		0.045		0.760		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS						0.200	VARIOUS	Continuing	Continuing	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	9.530	0.502	VARIOUS	0.546	VARIOUS	0.790	VARIOUS	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			9.530	0.502		0.546		0.990		Continuing	Continuing	
Remarks:												
Total Cost			74.656	5.984		7.059		12.016		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

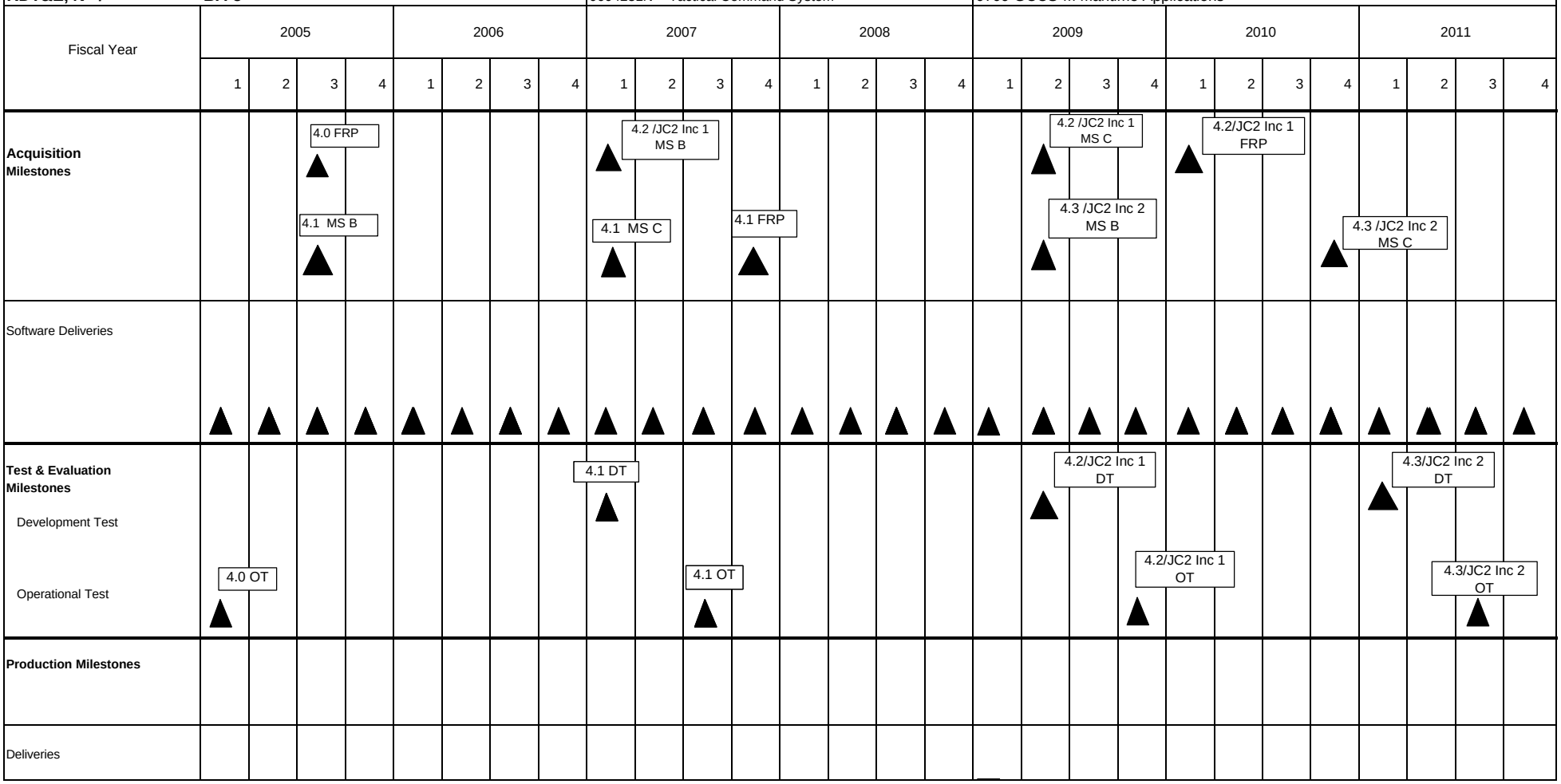
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N - Tactical Command System

PROJECT NUMBER AND NAME: 0709 GCCS-M Maritime Applications



R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604231N - Tactical Command System				PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Software Delivery (quarterly)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	
Operational Test 4.0	Q1							
Full Rate Production 4.0	Q3							
Milestone B 4.1	Q3							
Preliminary Design Review 4.1	Q4							
Critical Design Review 4.1		Q1						
Design Readiness Review 4.1		Q2						
Integrated Logistics Assessment 4.1		Q4						
Milestone B 4.2 (JC2 Inc 1)			Q1					
Milestone C 4.1			Q1					
Development Test 4.1			Q1					
Operational Test 4.1			Q3					
Full Rate Production 4.1			Q4					
Preliminary Design Review 4.2				Q1				
Critical Design Review 4.2				Q2				
Design Readiness Review 4.2				Q3				
Integrated Logistics Assessment 4.2					Q1			
Milestone C 4.2 (JC2 Inc1)					Q2			
Milestone B 4.3 (JC2 Inc 2)					Q2			
Development Test 4.2 (JC2 Inc 1)					Q2			
Operational Test 4.2 (JC2 Inc 1)					Q4			
4.2 (JC2 Inc 1 Full Rate Production)						Q1		
Milestone C 4.3 (JC2 Inc 2)						Q4		
Development Test 4.3 (JC2 Inc 2)							Q1	
Operational Test 4.3 (JC2 Inc 2)							Q3	

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding ($000)							DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications		
Program Title	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
GCCS-M MARITIME APPLICATIONS	-	-	-	-	-	-	-

GCCS-M software is developed under an engineering services based contract. Maximum Government liability is limited to the total obligated value of annually awarded task orders.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME 2009 TRUSTED INFORMATION SYSTEMS						
COST ($ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Project Cost			**$1.464**	**$2.116**	**$1.690**	**$1.562**	**$1.379**	**$0.385**	**$0.396**		
RDT&E Articles Qty											

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

(U) Trusted Information Systems (TIS) is a combination of the Joint Cross Domain eXchange (JCDX) system (formerly Ocean Surveillance Information System (OSIS) Evolutionary Development (OED)) and Radiant Mercury (RM), incorporating both Multi-Level Security (MLS) web technologies and Multiple Levels of Security technologies in order to successfully provide accredited Cross Domain Solutions (CDS). TIS is a critical component of network-centric warfare, supporting joint operations and coalition forces in the Global War on Terrorism (GWOT) and in Homeland Security operations. The ability to pass sensitive, yet critical, data across security domains and to our Coalition partners in a timely fashion can only be met by accredited CDS systems such as RM.

(U) **Joint Cross Domain eXchange (JCDX):** Provides the core on-line, automated, near-real time, multi-level secure, information analysis, dissemination, and receipt capabilities that enable Combatant Commanders 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. JCDX 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 simultaneously. In addition, it is required to provide near-real-time all-source fusion, correlation and analysis tools to include robust graphics presentation and geospatial analysis capabilities, directly feeding automated reporting capabilities. JCDX 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.

(U) JCDX is built on an evolutionary development strategy, which provides a mechanism for adding future capabilities including the incorporation of proven Fleet-initiated prototypes. TIS is the CDS foundation for transformational capabilities and functionalities required for the success of FORCEnet, Net-Centric Enterprise Services (NCES), Joint Command and Control (JC2), Multi-National Information Sharing (MNIS), and Global Information Grid (GIG). These transformational capabilities and functionalities include, but are not limited to, web services, CDS to single level and/or untrusted clients, conversion of legacy serial communications to Internet Protocol (IP) connectivity, vastly improved throughput to support increasingly larger files, and operating system (OS) migration in support of FORCEnet, NCES, JC2, MNIS, and GIG architectures.

(U) **Radiant Mercury:** RM provides a fully automated, bi-directional sanitization, transliteration and guarding capability for formatted and unformatted data between security enclaves. Radiant Mercury helps ensure critical Indications and Warning intelligence is provided quickly to operational decision-makers. RM is actively involved in the production and cross domain dissemination of information for operating forces worldwide, including the operating forces of key allies involved in the Global War On Terrorism (GWOT) and Operation Iragi Freedom (OIF). 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 critical operational information to intelligence and cryptologic analysts. Unformatted data is handled by the Information Review Process (IRP). The system provides cross domain services to a wide variety of customers including all Combatant Commanders , Shared Early Warning, Blue Force Tracking, the GCCS-M architecture, as well as numerous DoD and Intelligence agency sites.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - TACTICAL COMMAND SYSTEM	2009 TRUSTED INFORMATION SYSTEMS

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.964	1.426	1.284	
RDT&E Articles Quantity				

JCDX:

FY05: Developed, integrated, and tested Web service front-end to Multi-Level Security (MLS) Message Archive search, extended MLS search to Portable Data Files (PDF), processed Track Management messages from external C4I systems, provided cross domain Command and Control Personal Computer (C2PC) gateway services to DOD Intelligence Information System (DODIIS) Trusted Workstation (DTW) analyst tools to identify high-interest track candidates for downgrade/processing for coalition redistribution, connectivity to external Modernized Integrated Database (MIDB). Provided updates to JCDX message encoders, decoders and correlation algorithms in conjunction with security policies/requirements, formatted message standards, sensor data fields, and Cross Domain Solution (CDS) requirements of FORCEnet, NCES, JC2, Multinational Information Sharing (MINS), and GIG.

FY06: Operational feature enhancement to Hewlett Packard-UX (HP-UX) only JCDX server. Incorporate Horizontal Fusion (HF) Web Service Gateway features to deliver Service-Oriented Architecture (SOA) capabilities relying on Macintosh protection of JCDX HP server. Provide subset of JCDX CDS capability to DTW/Multi-Level Thin Client (MLTC), CENTRIX, and single level clients. Systems Engineering in support of JCDX migration to NCES/JC2/FORCENET architecture. Develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.

FY07: Implement message and PDF profiling to Web Service Gateway. Implement labeled posting for specified users. Systems Engineering in support of JCDX migration to NCES/JC2/FORCENET

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.500	0.690	0.406	
RDT&E Articles Quantity				

RM:

FY05: Developed, integrated and tested improvements for higher message and file throughput in support of Global War On Terrorism (GWOT), Common Operational Picture (COP) Synchronization Tool (CST) guarding and sanitization, and improved upon the ability to process greater file sizes to address very large imagery file throughput.

FY06: RM migration to Trusted Solaris 10 server from Trusted Solaris 8 in order to remain compatible with the operating system and hardware available. Integration of Radiant Mercury Information Guard components to a single server (currently 3 servers) to reduce space requirements. Research transition to Internet Protocol version 6 (IPv6). Improve socket communications throughput. Design solutions to facilitate RM regionalization.

FY07: Develop, integrate, and test additional unformatted file types, secure remote maintenance, and enhanced audit management. Enhance support for emerging cross domain Web service requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - TACTICAL COMMAND SYSTEM	2009 TRUSTED INFORMATION SYSTEMS

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GCCS-M (TIS/JCDX) (OPN - BLI 2608)	1.624	1.746	0.572	0.209	2.166	2.242	2.300

(U) D. ACQUISITION STRATEGY:

N/A

(U) E. Major Performers:

SPAWAR System Center San Diego provides support as the Government testing facility.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME 2009 TRUSTED INFORMATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	9.540	0.134	VARIOUS	0.216	VARIOUS	0.195	VARIOUS	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			9.540	0.134		0.216		0.195		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	49.647	1.248	VARIOUS	1.836	VARIOUS	1.441	VARIOUS	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			49.647	1.248		1.836		1.441		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME 2009 TRUSTED INFORMATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR	0.630	0.050		0.000		0.000		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			0.630	0.050		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.185	0.032	VARIOUS	0.064	VARIOUS	0.054	VARIOUS	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			2.185	0.032		0.064		0.054		Continuing	Continuing	
Remarks:												
Total Cost			62.002	1.464		2.116		1.690		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - TACTICAL COMMAND SYSTEM	2009 TRUSTED INFORMATION SYSTEMS/JOINT CROSS DOMAIN EXCHANGE (JCDX)

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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															MILESTONE "C" - JCDX Version 6.0					△									MILESTONE "C" - JCDX Version 6.2			△	
Prototype Phase																																
Development																																
Delivery																																
Software OED 5.X / 6.X SW Delivery				DELIVERY JCDX Version 5.0		△				DELIVERY JCDX Version 5.1		△			DELIVERY JCDX Version 6.0	△							Delivery JCDX Version 6.1	△							DELIVERY JCDX Version 6.2	△			
Test & Evaluation Milestones																																
Development Test											FOT&E - JCDX Version 5.1		△				DT/OT - JCDX Version 6.0	△				FOT&E JCDX Version 6.1	△							DT/OT - JCDX Version 6.2	△		
Operational Test																																
Production Milestones																																
Deliveries																																

NOTES:

1) RM DEEMED POST-MILESTONE C

2) JCDX V5 POST-MILESTONE C

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail			DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM		PROJECT NUMBER AND NAME 2009 TRUSTED INFORMATION SYSTEMS/JOINT CROSS DOMAIN EXCHANGE (JCDX)				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software Delivery JCDX Version 5.0	Q2						
Software Delivery JCDX Version 5.1		Q4					
FOT&E JCDX Version 5.1			Q1				
Software Delivery JCDX Version 6.0			Q4				
Developmental/Operational Test JCDX Version 6.0				Q1			
Milestone C JCDX Version 6.0				Q3			
Software Delivery JCDX Version 6.1					Q2		
FOT&E JCDX Version 6.1					Q3		
Software Delivery JCDX Version 6.2							Q1
Developmental/Operational Test JCDX Version 6.2							Q2
Milestone C JCDX Version 6.2							Q3

R-1 SHOPPING LIST - Item No. 90

Notes:
JCDX 5 post milestone C

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**9.721**	**9.632**	**4.285**	**5.719**	**6.952**	**7.177**	**7.414**
RDT&E Articles Qty							

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

The GCCS-M Common Applications 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 (COE) program is a core function of the GCCS-M Common Applications 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. In FY05, GCCS-M will begin migration to Joint Command and Control (JC2) development in coordination with the Joint Command and Control (JC2) Program. Efforts in FY06-07 will support the continued migration of capabilities as the JC2 architecture is further refined.

GCCS-M Common Applications 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	2305 GCCS-M Common Applications

(U) B. Accomplishments/Planned Program

Aircraft Mission Planning	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.697	0.691	0.330
RDT&E Articles Quantity			

FY05 - Aerospace Operations: Integrated organic situational awareness capabilities with National, theater, and shipboard aerospace operations management systems to plan and execute aerospace operations and promote shared situational awareness. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Provide the capability to process and disseminate aircraft mission planning and execution data for disparate sources and platforms within the Joint C2 architectural construct. Required to execute near-real time strike, deep interdiction and power projection missions by current and next-generation manned and unmanned air assets.

FY07 - Continue to provide the capability to process and disseminate aircraft mission planning and execution data for disparate sources and platforms within the Joint C2 architectural construct. Required to execute near-real time strike, deep interdiction and power projection missions by current and next-generation manned and unmanned air assets.

Web-Enabling/Readiness	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.843	1.351	0.638
RDT&E Articles Quantity			

FY05 - Web-Enabling/Readiness: User Help and Documentation: Provided an embedded documentation and individual/team user help capability that emphasizes performance of mission capabilities. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 is the near future.

FY06 - Provide the continued migration of web-enabled, task-oriented documentation and help capability emphasizing execution of missions within the Joint Command and Control construct.

FY07 - Continue to provide the continued migration of web-enabled, task-oriented documentation and help capability emphasizing execution of missions within the Joint Command and Control construct.

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Testing/Usability	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.435	1.628	0.719
RDT&E Articles Quantity			

FY05 - Testing/Usability: Provided end-to-end system testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This included developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Provides continued end-to-end system testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies.

FY07 - Continue to provide end-to-end system testing of Maritime C4I capabilities within the emerging Joint C2 architectural framework. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	2305 GCCS-M Common Applications

(U) B. Accomplishments/Planned Program

Combat Systems Interface	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.729	0.687	0.377
RDT&E Articles Quantity			

FY05 - C2/Navigation Systems Integration / C2/ Meteorological and Oceanographic (METOC) Integration: Integrated with shipboard navigation systems to provide definitive ship location to the COP in support of shared situational awareness. Provided the capability to geo-register and render digital nautical charts/navigation quality map products. Integrated with shipboard meteorological systems to provide current and forecasted environmental data to execute maritime operations and promote shared situational awareness. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Migrate and integrate evolving organic shipboard systems to maritime implementations of the Joint C2 architecture.

FY07 - Continue migration and integration of evolving organic shipboard systems to maritime implementations of the Joint C2 architecture.

JPN/TADILS/BROADCASTS	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.413	3.786	1.827
RDT&E Articles Quantity			

FY05 - Situational Awareness (SA) / Battle Force Command and Control (BFC2): Facilitated shared situational awareness by integrating information from shipboard sensors, emitters and real time event reporting networks into the COP. Provided assured SA and BFC2 by integrating information systems spanning GENSER, SCI, and Coalition security domains. Exchanged shared situational awareness information via the COP with Joint and shipboard systems (e.g. combat, weapons control, navigation, cryptologic). Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 is underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - - Provide bi-directional shared situational awareness by integrating and exchanging information with disparate systems, sensors and real time event reporting networks (e.g. weapons/fire control, navigation, cryptologic, tactical data links and broadcasts) within the Joint C2 architectural construct. This is required to prevent fratricide and mutual interference of current (e.g. Tomahawk, Aegis, Standard Missile and Patriot) and future weapon systems/platforms (Joint Strike Fighter (JSF), Multi-Mission Aircraft (MMA), Predator/DD-21 ship class) during multi-platform strike operations. Leverages investment in new and upgraded sensors to further develop Situational Awareness and Command and Control throughout the extended Battlespace.

FY07 - Continue to provide bi-directional shared situational awareness by integrating and exchanging information with disparate systems, sensors and real time event reporting networks (e.g. weapons/fire control, navigation, cryptologic, tactical data links and broadcasts) within the Joint C2 architectural construct. This is required to prevent fratricide and mutual interference of current (e.g. Tomahawk, Aegis, Standard Missile and Patriot) and future weapon systems/platforms (JSF, MMA, Predator/DD-21 ship class) during multi-platform strike operations. Leverages investment in new and upgraded sensors to further develop Situational Awareness and Command and Control throughout the extended Battlespace.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	2305 GCCS-M Common Applications

(U) B. Accomplishments/Planned Program

Force Protection/Counter-terrorism	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.197	0.136	0.094
RDT&E Articles Quantity			

FY 05 - Emergent Capabilities: Provided the capability to rapidly incorporate emergent and transformational C2I capabilities that have been demonstrated through the experimentation process, and that satisfy Naval, Joint and Coalition C2I requirements. Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 in the near future.

FY 06 - Emergent Capabilities: Provide the continued migration of emergent and transformational command and control capabilities to the Joint C2 architectural construct such as C4I Web Services, Smart Common Operational Picture (SmartCOP), and Universal Chat Client.

FY 07 - Emergent Capabilities: Provide the continued migration of emergent and transformational command and control capabilities to the Joint C2 architectural construct such as C4I Web Services, SmartCOP, and Universal Chat Client.

C2 Fires Integration	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.407	1.353	0.300
RDT&E Articles Quantity			

FY05 - Maritime Mission Presentation of COP: Provided the capability to perform unique Shipboard Operations Execution Management tasks (e.g. maritime mission specific overlays/templates). Accomplishments included a successful OPEVAL of GCCS-M 4.0, over 2,200 hours of Operational Testing and follow-on Verification of Corrected Deficiencies (VCD) testing, successful interoperability certifications from NCTSI and JITC and the successful GCCS-M 4.0 Production Decision received in June 2005 from GCCS-M's Milestone Decision Authority. GCCS-M 4.1 also had a successful Milestone B decision in June 2005. Requirements analysis and system design for GCCS-M 4.1 in underway with the goal of transitioning capabilities to JC2 in the near future.

FY06 - Targeting/Strike: Provide the capabilities to plan and conduct targeting activities, such as tasking, assignment, and direction of weapons delivery platforms (e.g. Naval Fires Control System (NFCS), Tomahawk) and execute strike operations in near-real time using existing and emerging systems, sensors, and data sources (e.g. Joint Services Imagery Processing System-Navy (JSIPS-N), Distributed Common Ground Station (DCGS) within the Joint Command and Control framework. Required to ensure maximum lethality from weapon-target pairing while minimizing collateral damage and preventing fratricide during Joint and Coalition strike operations.

FY07 - Targeting/Strike: Continue development of capabilities to plan and conduct targeting activities, such as tasking, assignment, and direction of weapons delivery platforms (e.g. NFCS, Tomahawk) and execute strike operations in near-real time using existing and emerging systems, sensors, and data sources (e.g. JSIPS-N, DCGS) within the Joint Command and Control framework. Required to ensure maximum lethality from weapon-target pairing while minimizing collateral damage and preventing fratricide during Joint and Coalition strike operations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GCCS-M (OPN - BLI 2608)	35.224	64.115	38.804	68.938	69.134	93.991	88.093

(U) D. ACQUISITION STRATEGY:

N/A

(U) E. Major Performers:

Northrop Grumman Mission Systems (NGMS) is the prime contractor that provides software development and integration for GCCS-M. SPAWAR System Center San Diego provides support as the Government testing facility.

(U) F. METRICS:

Earned Value Management is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	VAR	VAR	8.010	0.883	VAR	1.212	VAR	0.683	VAR	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			8.010	0.883		1.212		0.683		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	VAR	VAR	50.393	7.424	VAR	6.432	VAR	2.468	VAR	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			50.393	7.424		6.432		2.468		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	VAR	6.432	0.719	VAR	1.013	VAR	0.547	VAR	Continuing	Continuing	
Operational Test & Evaluation	VAR	VAR	1.079	0.165	VAR	0.230	VAR	0.212	VAR	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			7.511	0.884		1.243		0.759		Continuing	Continuing	
Remarks:												
Contractor Engineering Support									VAR	Continuing	Continuing	
Government Engineering Support											0.000	
Program Management Support	VAR	VAR	3.452	0.530	VAR	0.745	VAR	0.375	VAR	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
											0.000	
Subtotal Management			3.452	0.530		0.745		0.375		Continuing	Continuing	
Remarks:												
Total Cost			69.366	9.721		9.632		4.285		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

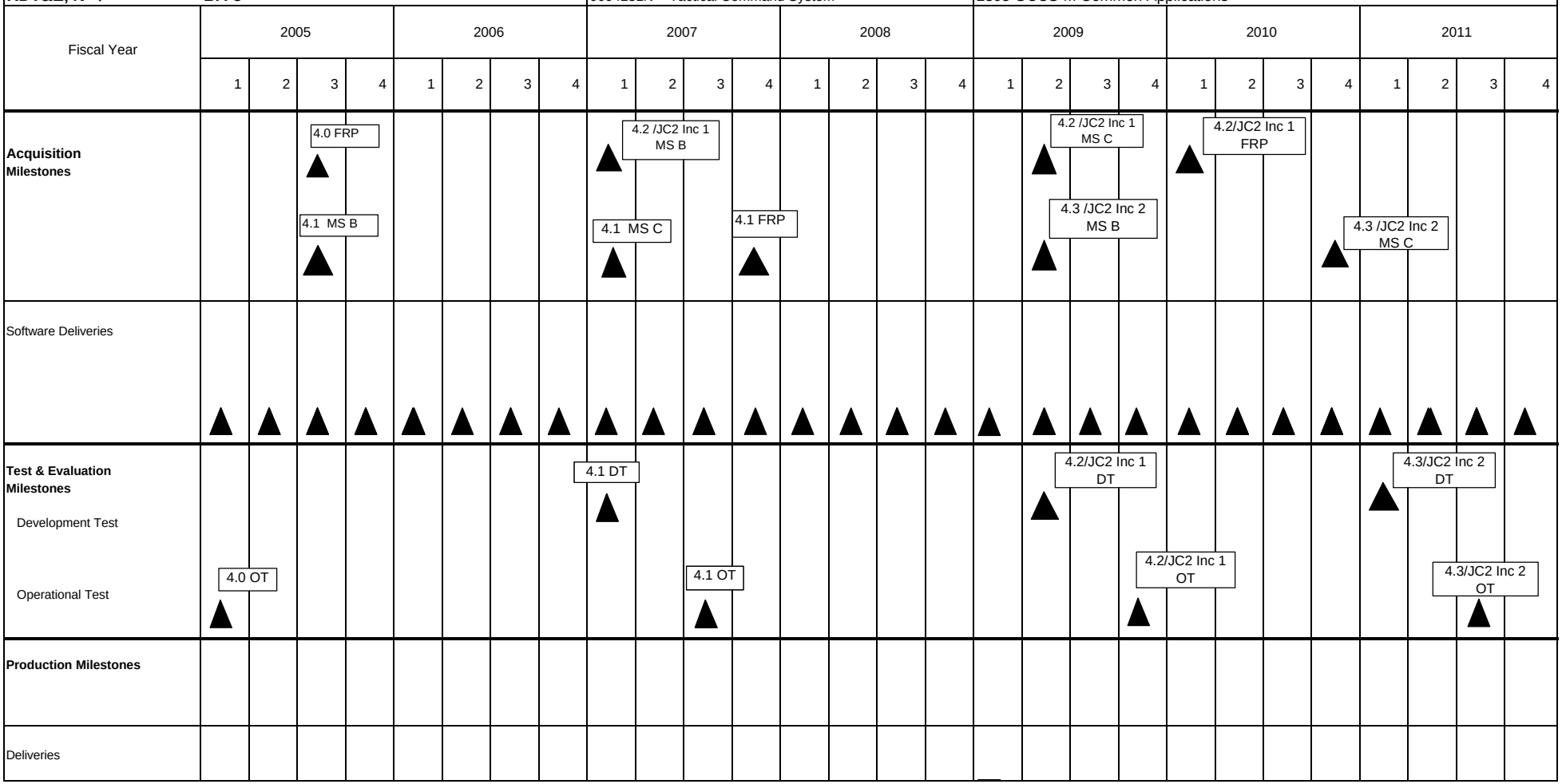
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N - Tactical Command System

PROJECT NUMBER AND NAME: 2305 GCCS-M Common Applications



R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604231N - Tactical Command System				PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Software Delivery (quarterly)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	
Operational Test 4.0	Q1							
Full Rate Production 4.0	Q3							
Milestone B 4.1	Q3							
Preliminary Design Review 4.1	Q4							
Critical Design Review 4.1		Q1						
Design Readiness Review 4.1		Q2						
Integrated Logistics Assessment 4.1		Q4						
Milestone B 4.2 (JC2 Inc 1)			Q1					
Milestone C 4.1			Q1					
Development Test 4.1			Q1					
Operational Test 4.1			Q3					
Full Rate Production 4.1			Q4					
Preliminary Design Review 4.2				Q1				
Critical Design Review 4.2				Q2				
Design Readiness Review 4.2				Q3				
Integrated Logistics Assessment 4.2					Q1			
Milestone C 4.2 (JC2 Inc1)					Q2			
Milestone B 4.3 (JC2 Inc 2)					Q2			
Development Test 4.2 (JC2 Inc 1)					Q2			
Operational Test 4.2 (JC2 Inc 1)					Q4			
4.2 (JC2 Inc 1 Full Rate Production)						Q1		
Milestone C 4.3 (JC2 Inc 2)						Q4		
Development Test 4.3 (JC2 Inc 2)							Q1	
Operational Test 4.3 (JC2 Inc 2)							Q3	

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding ($000)					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications		
Program Title	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
GCCS-M COMMON APPLICATIONS	-	-	-	-	-	-	-

GCCS-M software is developed under an engineering services based contract. Maximum Government liability is limited to the total obligated value of annually awarded task orders.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	2307 Shipboard LAN/WAN/Integrated Shipboard Network System (ISNS)

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**2.309**	**3.006**	**3.112**	**3.260**	**3.322**	**3.331**	**3.408**
RDT&E Articles Qty								

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

The Integrated Shipboard Network System (ISNS) program provides Navy ships, including submarines, with reliable, high-speed SECRET and UNCLASSIFIED Local Area Network (LAN)s. The LAN provides Basic Network Information Distribution Services (BNIDS) and access to the DISN Wide Area Network (WAN) (Secure and Nonsecure Internet Protocol Router Network -SIPRNet and NIPRNet). It provides the network infrastructure and services to enable real-time information exchange within the ship and between afloat units, Component Commanders, and Fleet Commanders. It is a key factor in the implementation of the Navy's portion of Joint Vision 2020 and the migration of existing legacy systems into the IT-21 strategy . Project funding supports the design, development and testing of the ISNS LAN for surface ships and SubLAN for submarines.

The ISNS program maximizes the use of both COTS software and hardware. Engineering and technical support is provided so that existing systems will keep pace with hardware and software that continues to be commercially supported. ISNS and SubLAN use a combination of high speed wired and wireless switches, routers, servers, workstations 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. Under the Navy's information modernization strategy, full synchronization of shipboard networks, mission and information applications, radio/satellite communications, and shore data dissemination infrastructure 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 over 460 different system configurations including the following: Global Command and Control System Maritime (GCCS-M) and Navy Tactical Command Support System (NTCSS), Navy Standard Integrated Personnel System (NSIPS), Theatre Medical Information Program – Maritime (TMIP-M), Defense Messaging System (DMS), Digital Wideband Transmission System (DWTS), Advanced Digital Network System (ADNS), Global Broadcasting System (GBS), Video Information Exchange System (VIXS), Advanced Tomahawk Weapons Control System (ATWCS) and Information Security (INFOSEC) programs. The ISNS program provides the infrastructure to support implementation/fielding of programs listed above. The LAN modernization rate must keep pace with hardware and software that is supported commercially in order to provide a supportable and secure FORCEnet infrastructure.

CENTRIXS - The Combined Enterprise Regional Information Exchange System (CENTRIXS) program provides Navy ships with a reliable, high-speed Local Area Network (LAN) that will provide access to the coalition (CFE, Global Counter Terrorism Task Force (GCTF), NATO Information Data Transfer System, Multinational Coalition Force Iraq (MCFI), CENTRIXS J and K, and all other bilateral and Community of Interest (COI)) Wide Area Network (WAN). It provides real-time information exchange between afloat units, Component Commanders, numbered Fleet Commanders and Commanders LANT/PAC Fleet through the migration of existing legacy systems into the ISNS 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 capability. The CENTRIXS program maximizes the use of both COTS software and hardware resulting in dependence of commercial support. Engineering and technical support is provided so that existing systems will be upgraded/modified to keep pace with the commercial community.

Project funding supports the development of acquisition documentation essential to the program. The goal for the CENTRIXS program is to provide a cost-efficient operationally effective network that dramatically reduces the infrastructure requirements, while maximizing operational flexibility in a coalition environment. MLTC initiatives include Server Virtualization Development, which provides the ability to run multiple virtual servers on a single server. Additionally, this funding provides design, developing and testing of the Unit level MLS/MLTC system that will reduce drop requirements while minimizing server and client footprint and migration testing with the existing Force level design from CITRIXS Software to Microsoft software to reduce software costs.

Submarine Local Area Network (SubLAN): The SubLAN program provides Navy submarines, with reliable, high-speed SECRET and UNCLASSIFIED Local Area Networks (LAN)s. When the SubLAN network is combined with other subsystems, it delivers an end-to-end network-centric warfare capability. SubLAN I provides network infrastructure including an Unclassified Wireless Local Area Network (UWLAN), servers, and the Common PC Operating System Environment (COMPOSE), which provides the server and operating system environment in which other applications such as Non-Tactical Data Processing System (NTDPS) application suite can run.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	2307 Shipboard LAN/WAN/Integrated Shipboard Network System (ISNS)

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
ISNS		1.653	0.859	0.930
RDT&E Articles Quantity				

FY05: Performed developmental testing and operational testing on ISNS GiG-E LAN Increment I A(V)9 . The testing events supported a December 05 FRP decision for ISNS. Developed COMPOSE 2.X. and 3.X to transition out of Windows NT server/client environment. Continued to investigate, develop and test next generation LAN Protocols (including Wireless LAN, Network management and administration, Secure/Nonsecure Voice, Internet Protocol Video and IPv6 and Quality of Service protocols) for potential incorporation into the Shipboard LAN architecture. Investigated, integrated and test data prioritization, advanced data storage and management, next generation server/workstation operation systems and secure operating systems, server/workstation consolidation and fixes for security vulnerabilities. Performed studies to increase availability and survivability of networks and reduce network infrastructure footprint. Perform disaster recovery plan and develop incremental spiral to mitigate major data and service disasters. 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. Performed follow-on system developmental and operational testing on ISNS GIG-E LAN Increment I A(V)9.

FY06: Continue to investigate, develop and test major and minor data and service disaster improvements, and dual IPv4 and IPv6 routing architectures. Investigate and test Storage Attached Network (SAN) and Network Attached Storage (NAS) architectures in support of server consolidation. Design and test increased availability and survivability network solutions. Further investigate increasing availability and survivability of networks and reduction of network infrastructure footprint. Investigate increased security technologies that will monitor and control network and server data. Integrate wireless network technologies into shipboard networks. Perform developmental testing and operational testing on ISNS GiG-E LAN Increment I A(V)8. Work with COMOPTEVFOR and ISNS system engineers to determine the level of operational testing for A(V)1 nd A(V)2.

FY07: Develop COMPOSE 4.X. Investigate, develop and test server consolidation architectures using multi-Secure server Operating Systems. Continue to investigate, develop and test SAN, NAS, server consolidation, and IP telephony architectures. Develop and test security technologies that monitor and control network and server traffic. Develop and test IP telephony solutions and call management for unclassified and secret networks. Perform tailored operational testing on ISNS GiG-E LAN Increment I A(V)1 and A(V)2 and developmental testing on ISNS GiG-E LAN Increment 1 A(V)2. Successful operational testing will result in A(V)8 and A(V)2 fielding decision.

		FY 05	FY 06	FY 07
ISNS/CENTRIXS		0.000	1.779	1.784
RDT&E Articles Quantity				

FY06: Initiate the Server Virtualization Development that provides ability to run multiple virtual servers on one physical server reducing the server/rack footprint and creating a scalable Multi-Level Security (MLS) solution. Investigate Cross Domain Solutions (CDS) technology that will further reduce the network infrastructure. Develop acquisition documents in support of an MS C Decision. Conduct developmental testing.

FY07: Continue the Server Virtualization Development that provides ability to run multiple virtual servers on one physical server reducing the server/rack footprint and creating a scalable MLS solution. Continue the Cross Domain Solutions (CDS) security technology that will further reduce the network infrastructure. Investigate Voice over Internet Protocol (VoIP) technology for coalition enclaves.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	2307 Integrated Shipboard Network System SubLAN (ISNS/SubLAN)

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
ISNS/SubLAN		0.656	0.368	0.398
RDT&E Articles Quantity				

FY05: Investigated, developed and tested next generation LAN Protocols (including Wireless LAN, Network management and administration, Secure/Nonsecure Voice, Internet Protocol Video and IPv6 and Quality of Service protocols) for incorporation into the SubLAN architecture. Investigated, integrated and tested data prioritization, advanced data storage and management, next generation server/workstation operation systems and secure operating systems, server/workstation consolidation and fixes for security vulnerabilities. Performed studies to increase availability and survivability of networks and reduce network infrastructure footprint. Performed disaster recovery plan and developed incremental spiral to mitigate major data and service disasters. 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. Performed follow-on system developmental and operational testing. Performed developmental testing and operational testing of SubLAN Increment 1 architecture. Testing events supported a December 2005 FRP decision for SubLAN 1.

FY06: Continue to investigate, develop and test major and minor data and service disasters improvements, dual IPv4 and Ipv6 routing architectures. Investigate and test Storage Attached Network (SAN), Network Attached Storage (NAS) architectures in support of server consolidation. Design and test increased availability and survivability network solutions. Further investigate increasing availability and survivability of networks and reduction of network infrastructure footprint. Investigate increased security technologies that will monitor and control network and server data. Increase submarine wireless network throughput.

FY07: Investigate, develop and test server consolidation architectures using multi-Secure server Operating Systems. Continue to investigate, develop and test SAN, NAS, server consolidation, and IP telephony architectures.

		FY 05	FY 06	FY 07
		0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No.91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	2307 Shipboard LAN/WAN/Integrated Shipboard Network System (ISNS)

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete Cont	Total Cost Cont
3050 Ship Comms Auto (OPN)									
ISNS	47.391	77.678	78.098	159.931	189.654	179.425	174.875		
CENTRIXS	0.000	6.515	11.484	13.742	11.639	11.730	7.375		
SubLAN	21.171	38.725	24.810	22.311	34.815	35.784	35.911		
Total:	68.562	122.918	114.392	195.984	236.108	226.939	218.161		

(U) D. ACQUISITION STRATEGY:

A common acquisition strategy for ISNS and SubLAN is being developed for post FRP production.

(U) E. Major Performers:

Spawar Systems Center Charleston, Charleston South Carolina Software Support Activity
Spawar Systems Center , San Diego CA. Baseline and interface design and testing for both hardware and software
Naval Undersea Warfare Center, Newport RI. SubLAN baseline and interface design and testing for both hardware and software.
Science Applications International Corporation (SAIC), San Diego CA. Studies and rack designs of COTS equipment.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604231N Tactical Command System

PROJECT NUMBER AND NAME: 2307 Shipboard LAN/WAN/Integrated Shipboard Network System (ISNS)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	FEDSIM/SAIC	1.635								1.635	0.000
Primary Hardware Development	WX	SSC CH	2.132	0.100	12/04	0.000	12/05	0.000	12/06	Continuing	Continuing	0.000
Primary Hardware Development	WX	SSC SD	1.624	0.925	12/04	0.565	12/05	0.580	12/06	Continuing	Continuing	0.000
Primary Hardware Development	TMM	EDS	0.196								0.196	0.000
Systems Engineering	MIPR	MITRE	0.426								0.426	0.000
Systems Engineering	MIPR	FEDSIM/SAIC	1.498								1.498	0.000
Systems Engineering	Various	Various	0.810	1.019	12/04	0.743	12/05	1.294	12/06	Continuing	Continuing	0.000
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			8.322	2.044		1.308		1.874		0.000	3.755	0.000

Remarks:

Development Support											0.000	0.000
Software Development	Various	Various				0.429	12/05	0.480	12/05		0.909	0.000
Training Development								0.100	12/05		0.100	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	0.000		0.429		0.580		0.000	1.009	0.000

Remarks:

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604231N Tactical Command System

PROJECT NUMBER AND NAME: 2307 Shipboard LAN/WAN / Integrated Shipboard Network System (ISNS)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX	SSC CH	0.743	0.124	12/04	0.169	12/05	0.164	12/06	Continuing	Continuing	0.000
Test & Evaluation	WX	SSD SD	1.378	0.000	12/04	0.000	12/05	0.000	12/06	Continuing	Continuing	0.000
Test & Evaluation	WX	SSC Chespk	0.755	0.000	12/04	0.000	12/05	0.000	12/06	Continuing	Continuing	0.000
Test & Evaluation	MP	JITC	0.000	0.057	12/04	0.020	12/05	0.035	12/06			
Test & Evaluation	Various	Various	0.000		12/04	0.200	12/05	0.100	12/06			
Operational Test & Evaluation	WR	OPTEVFOR	0.348	0.050	12/04	0.090	12/05	0.095	12/06	Continuing	Continuing	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees												
Subtotal T&E			3.224	0.231		0.479		0.394		0.000	4.328	0.000
Remarks:												
Contractor Engineering Support											0.000	0.000
Government Engineering Support											0.000	0.000
Program Management Support	WX	SSC CH	0.257	0.034	12/04	0.040	12/05	0.064	12/06	Continuing	Continuing	0.000
Program Management Support	Various	Various				0.750	12/05	0.200	12/05			
Travel											0.000	0.000
Subtotal Management			0.257	0.034		0.790		0.264		0.000	1.345	0.000
Remarks:												
Total Cost			11.803	2.309		3.006		3.112		0.000	20.230	0.000
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

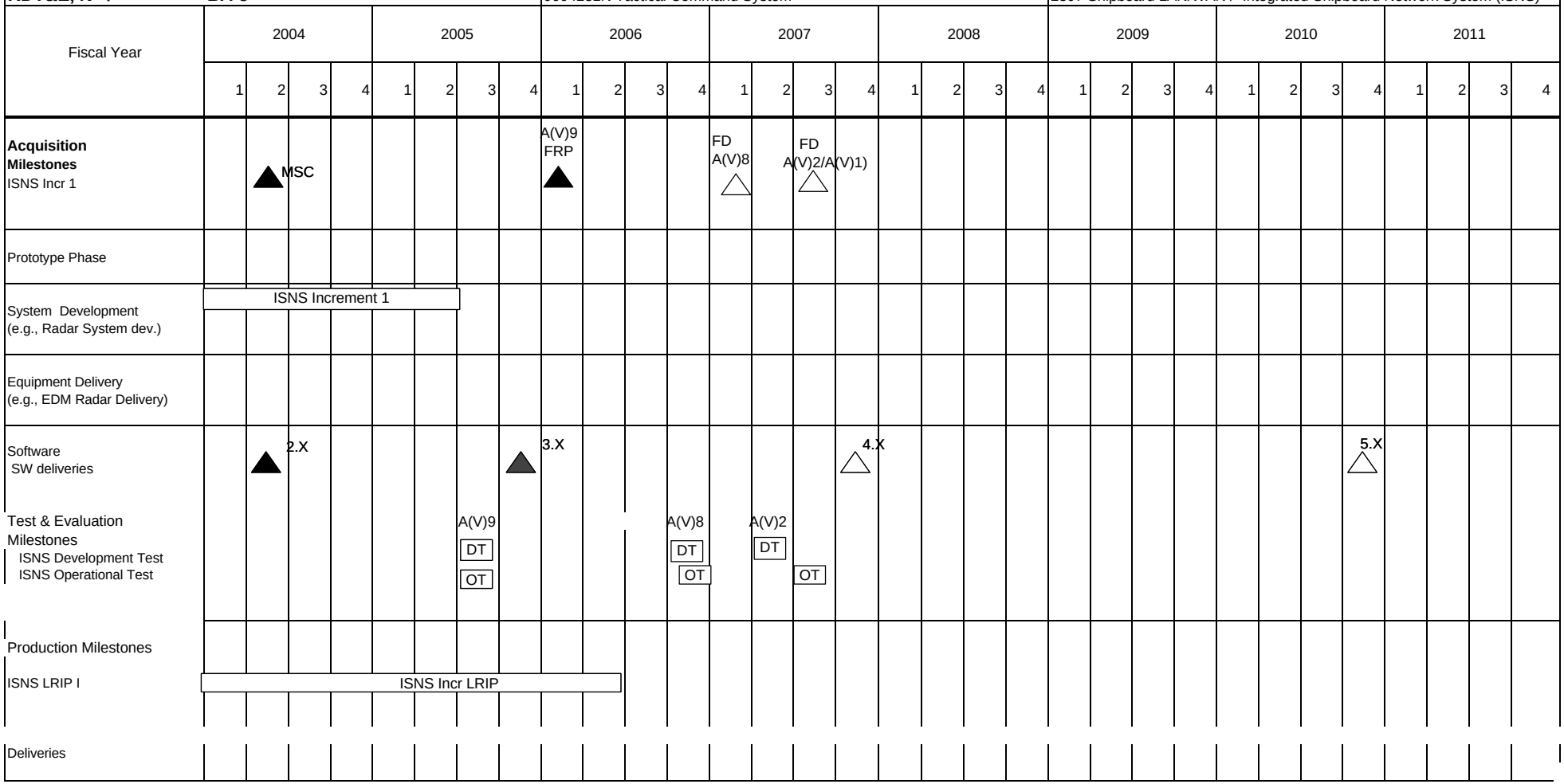
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N Tactical Command System

PROJECT NUMBER AND NAME: 2307 Shipboard LAN/WAN / Integrated Shipboard Network System (ISNS)



R-1 SHOPPING LIST - Item No. 91

NOTE: DT/OT has to occur for every ISNS GiG-E LAN Increment 1 variant (i.e. A(V)9, A(V)8, A(V)2…) based on COMOPTEVFOR requirement. FRP decision for ISNS Increment 1 with fielding and procurement authority for A(V)9 was granted in December 2005 after successful Operational Testing. Successful testing of A(V)8, A(V)2, and A(V)1 will result in system fielding decision.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604231N Tactical Command System				PROJECT NUMBER AND NAME 2307 Shipboard LAN/WAN / Integrated Shipboard Network System (ISNS)			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C	2Q							
Full Rate Production - A(V)9			1Q					
Fielding Decision - A(V)8				1Q				
Fielding Decision - A(V)2				3Q				
Fielding Decision - A(V)1								
System Development	1Q-4Q	1Q-2Q						
Software Delivery - 2.x	2Q							
Software Delivery - 3.x		4Q						
Software Delivery - 4.x				4Q				
Software Delivery - 5.x							4Q	
ISNS Development Test - A(V)9		3Q						
ISNS Development Test - A(V)8			4Q					
ISNS Development Test - A(V)2				2Q				
ISNS Development Test - A(V)1								
Operation Test - A(V)9		3Q						
Operation Test - A(V)8			4Q					
Operation Test - A(V)2				3Q				
Operation Test - A(V)1								
LRIP - I	1Q-4Q	1Q-4Q	1Q-2Q					

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	0604231N Tactical Command System	2307 CENTRIXS

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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								MS C INC I LRIP		Contract Award				FRP														
Prototype Phase																												
System Development									System Development																			
Software																	COMPOSE 4.X***											
Test & Evaluation Milestones																												
Development/Operational Test								DT				DT/OT										DT/OT						DT/OT
Production Milestones BLK II INC I																												
Deliveries												19			13				13				13				5	

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT 0604231N Tactical Command System				PROJECT NUMBER AND NAME 2307 CENTRIXS			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C				2Q				
Contract Award				2Q				
Full Rate Production					2Q			
System Development - Increment II			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Software Delivery - 4.x					4Q			
Development Test/Operational Test			4Q	4Q			2Q	4Q

R-1 SHOPPING LIST - Item No. 91

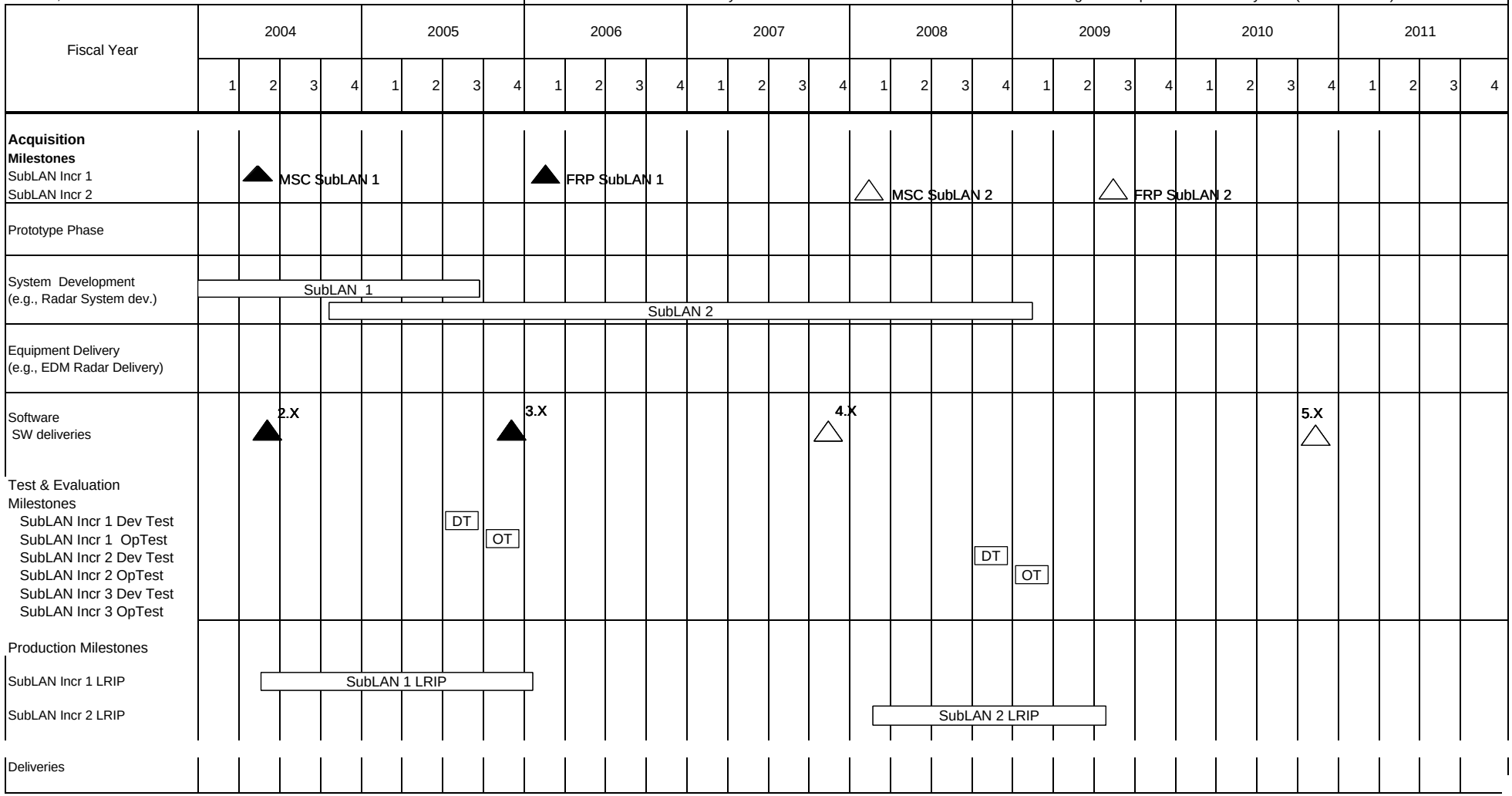
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / **BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604231N Tactical Command System

PROJECT NUMBER AND NAME: 2307 Integrated Shipboard Network System (ISNS/SubLAN)



R-1 SHOPPING LIST - Item No. 91

NOTE: SubLAN 2 MSC, DT/OT, and FRP delayed to address SubLAN 1 Windows NT End-Of-Life requirements.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604231N Tactical Command System				PROJECT NUMBER AND NAME 2307 Integrated Shipboard Network System (ISNS/SubLAN)			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C - SubLAN I	2Q							
Milestone C - SubLAN 2					1Q			
Full Rate Production - SubLAN I			1Q					
Full Rate Production - SubLAN 2						3Q		
System Development - SubLAN I	1Q-4Q	1Q-3Q						
System Development - SubLAN 2	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Software Delivery - 2.x COMPOSE 2.0	2Q							
Software Delivery - 3.x COMPOSE 3.0		4Q						
Software Delivery - 4.x				4Q				
Software Delivery - 5.x							4Q	
Development Test - SubLAN I		3Q						
Development Test - SubLAN 2					4Q			
Operational Test - SubLAN I		4Q						
Operational Test - SubLAN 2						1Q		
LRIP - SubLAN I	1Q-4Q	1Q-4Q	1Q					
LRIP - SubLAN 2					1Q-4Q	1Q-3Q		

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - Tactical Command System	3032 NTCSS Enterprise Database and MLDN

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**3.923**	**0.047**	**0.045**	**0.052**	**0.050**	**0.050**	**0.051**
RDT&E Articles Qty	**1**	**1**	**1**				

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

Navy Tactical Command Support System (NTCSS) - This RDT&E,N Project funding supports design, development and testing of the Navy Tactical Command Support System (NTCSS) web initiative. A web-enabled NTCSS will place all NTCSS databases into a similar structure, allowing greater interoperability between applications and will facilitate the movement of administrative workload from ships to shore.

(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.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 5	0604231N - Tactical Command System	'3032 NTCSS Enterprise Database and MLDN

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	3.923	0.047	0.045	
RDT&E Articles Quantity	1	1	1	

FY2005 Accomplishments:
Supported Web-enabled NTCSS applications.

FY2006 AND FY2007 PLAN:
Continue Web-enabling of NTCSS applications.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - Tactical Command System	3032 NTCSS Enterprise Database and MLDN

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN 261100 Naval Tactical Command Support System	20.137	50.992	35.311	31.210	39.465	40.258	41.058		
RDT&E PE 0604231N X9373 AN/UYQ-70 Based IT-21	4.053	1.700	0.000	0.000	0.000	0.000	0.000		

(U) D. ACQUISITION STRATEGY:

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

(U) E. MAJOR PERFORMERS: SPAWAR Systems Center (SSC) Norfolk, VA, SSC Charleston, SC and Science Applications International Corporation (SAIC): Software Development, Award Date: Various

(U) F. METRICS:

Earned Value Management is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604231N - Tactical Command System

PROJECT NUMBER AND NAME: 3032 NTCSS Enterprise Database and MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0.668								0.668	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering	Various	Various	1.000								1.000	0.000
Licenses	Various	Various	0.700								0.700	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			2.368	0.000		0.000		0.000		0.000	2.368	0.000

Remarks:

Development Support											0.000	0.000
Software Development	Various	Various	7.739	2.835	Various	0.047	10/05	0.045	10/06	Continuing	Continuing	0.000
Training Development											0.000	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management	Various	Various	0.460								0.460	0.000
Technical Data	Various	Various	0.200								0.200	0.000
GFE											0.000	0.000
Subtotal Support			8.399	2.835		0.047		0.045		0.000	0.660	0.000

Remarks:

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N - Tactical Command System	3032 NTCSS Enterprise Database and MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-AD	0.585	1.088	06/05						1.673	0.000
Operational Test & Evaluation											0.000	0.000
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			0.585	1.088		0.000		0.000		0.000	1.673	0.000
Remarks:												
Contractor Engineering Support	Various	Various	0.896								0.896	0.000
Government Engineering Support	Various	Various	0.279								0.279	0.000
Program Management Support											0.000	0.000
Travel											0.000	0.000
Subtotal Management			1.175	0.000		0.000		0.000		0.000	1.175	0.000
Remarks:												
Total Cost			12.527	3.923		0.047		0.045		Continuing	Continuing	0.000
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																												DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**									PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System												PROJECT NUMBER AND NAME '3032 NTCSS Enterprise Database and MLDN								
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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																												
Prototype Phase																												
System Development			X	X			X	X			X	X			X	X			X	X			X	X			X	X
Equipment Delivery																												
Software Delivery				X				X				X				X				X				X				X
Test & Evaluation Milestones																												
NTCSS web services FOT&E				X		X	X	X																				
Development Test																												
Operational Test																												
Production Milestones																												
LRIP I																												
LRIPII																												
FRP				X				X				X				X				X				X				X
Deliveries																												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT 0604231N - Tactical Command System				PROJECT NUMBER AND NAME 3032 NTCSS ENTERPRISE DATABASE AND MLDN		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Preparation							
Software Specification Review (SSR)							
Preliminary Design Review (PDR)	Q1-Q2	Q1-Q2	Q1-Q2	Q1-Q2	Q1-Q2	Q1-Q2	Q1-Q2
System Development		Q3-Q4	Q3-Q4	Q3-Q4	Q3-Q4	Q3-Q4	Q3-Q4
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	Q4	Q4	Q4	Q4	Q4	Q4	Q4
Preproduction Readiness Review (PRR)							
EDM Radar Delivery - Flt Related							
Milestone C (MS C)							
Operational Testing (OT-IIIA)		Q3-Q4					
Start Low-Rate Initial Production I (LRIP I)							
Software Delivery 2XXSW							
Developmental Testing (DT-IIIB1)	Q4						
Developmental Testing (DT-IIIB2)		Q2					
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 Initail Production II Delivery							
IOC							
Full Rate Production (FRP) Decision	Q3	Q4	Q4	Q4	Q4	Q4	Q4
Full Rate Production Start	Q4	Q4	Q4	Q4	Q4	Q4	Q4
First Deployment	Q4	Q4	Q4	Q4	Q4	Q4	Q4

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding ($000)							DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604231N - Tactical Command System			PROJECT NUMBER AND NAME 3032 NTCSS Enterprise Database and MLDN		
Program Title	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
NTCSS ENTERPRISE DATABASE AND MLDN	-	-	-	-	-	-	-	-

* NTCSS does not budget for Termination Liability. Termination Liability Clauses indicate that the maximum funding available to the contractor is the total amount obligated for the task, upon proposal to the Procurement Contracting Officer, if the government should terminate the contract or task for convenience.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	0604231N Tactical Command System			PROJECT NUMBER AND NAME 9123 FORCEnet			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**15.234**	**15.256**	**15.181**	**19.114**	**20.827**	**21.084**	**21.355**
RDT&E Articles Qty							

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

FORCEnet is the Navy and Marine Corps initiative to achieve Network Centric Warfare and Joint Transformation. FORCEnet is the enabler of Sea Power 21, Naval Power 21, the Naval Operating Concept for Joint Operations, and the Department of the Navy's Naval Transformation Roadmap. FORCEnet is executing these policies as detailed in the Secretary of the Navy's Report to Congress on FORCEnet (16 May 03).

The FORCEnet project line funds four efforts:

(1) Department of Navy (DoN) Transformation within Department of Defense (DoD) Framework *(Strategic Planning)*: Develops and establishes Navy-wide FORCEnet policy, planning, compliance, and investment strategy, supporting implementation of Network Centric Warfare. Drives DoN/DoD transformation efforts, accelerated innovation/testing/assessment/fielding of war fighter capability, Joint/Allied/Coalition interoperability, and establishment of enterprise FORCEnet requirements.

(2) Accelerating Joint War fighting Capability *(Trident Warrior)*: Enables early delivery of Network Centric Warfare capabilities to the war fighter via Fleet-directed Trident Warrior operational events. Integrates stand-alone systems and efforts to achieve substantially enhanced capability, demonstrates/tests these capabilities in both laboratory and operational environments, and evaluates their effectiveness. Coordinates FORCEnet efforts with other Service/Joint/DoD/National efforts to ensure Joint/Interagency/Allied/Coalition applicability and interoperability.

(3) FORCEnet Compliance Implementation *(FORCEnet Compliance Implementation)*: Develop FORCEnet Implementation Baseline. Develop FORCEnet compliance assessment tools. Develop FORCEnet compliance test procedures and test methodologies. Refine FORCEnet compliance metrics and define levels of compliance. Conduct compliance testing/assessment reviews and report on compliance adherence to Office of the Chief of Naval Operations (OPNAV), Naval NetworkWarfare Command (NETWARCOM), Assistant Secretary of the Navy Research, Development and Acquisition (ASN RDA) and the FORCEnet/C4I (Command, Control, Communication, Computers & Intelligence) Virtual Systems Command Governance Board.

(4) Osprey Hawksbill - This is a classified program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	9123 FORCEnet

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	**15.234**	**15.256**	**15.181**
RDT&E Articles Quantity			

FY05 Accomplishments:

1) Department of Navy (DoN) Transformation within Department of Defense (DoD) Framework (*Strategic Planning*) Developed expanded Joint/Allied/Coalition coordination/policy/planning. Validated FORCEnet Requirements/Architectures/Standards Spiral / Iteration. Updated FORCEnet Consolidated Compliance Checklist, integrated with broader Service/DoD checklists and policies, and established planning for formal Navy-wide implementation. Promulgated FORCEnet Requirements/Capabilities and Compliance Policy Memorandum of 27 MAY 05, which defined FORCEnet requirements and implemented an end-to-end compliance process. Supported Fleet FORCEnet Operational Advisory Group meetings. Supported FORCEnet Enterprise eam (FET) implementation.

2) Accelerating Joint Warfighting Capability (*Trident Warrior):* Executed Trident Warrior 04 (TW04) in October 2004 in the Commander Third Fleet (C3F) Area of Responsibility (AOR). Supported spiral development of programs of record in TW04. Completed analysis of TW04 experiment results and delivered Military Utility Assessment recommendations for Concent of Operations (CONOPS) and Doctrine Organization Training Material Leadership Personnel Facility (DOTMLPF) to NETWARCOM, Commander, Fleet Forces Command (CFFC) and the Sea Trial Executive Steering Group (ESG). Demonstrated technologies that provided significant improvements in Fleet Top Ten priorities of Blue Force Situational Awareness and bandwidth utilization. Provided leave behind capability for one deployment cycle of successful technologies for extended operational assessment. Conducted planning for Trident Warrior 05 (TW05) including experiment objective and scenario development involving a Coalition Force Maritime Component Commander staff and coalition Australia, Canada, New Zealand, United Kingdom, and United States (AUSCANNZUKUS) forces. Supported spiral development of programs of record in TW05. Planned and executed lab based Risk Reduction Limited Objective Experiment for risk mitigation of TW05 which also resulted in capabilities requirements definition for a standardized tactical chat tool. Supported war game at Naval War College for risk reduction of Information Management and Intelligence, Surveillance, and Reconnaissance (ISR) initiatives participation. Continued development of Naval Post-Graduate School experiment analysis tools. Started planning for Trident Warrior 06 (TW06), conducted initial technology selection and scenario objectives. Developed FY06-07 FORCEnet Sea Trial Plan.

3) FORCEnet Compliance Implementation (*FORCEnet Implementation Baseline)* Developed initial FORCEnet Implementation Baseline. Developed initial FORCEnet compliance assessment tools. Developed initial FORCEnet compliance test procedures and test methodologies. Refined FORCEnet compliance metrics and defined levels of compliance. Conducted compliance testing/assessment reviews and reported on compliance adherence to OPNAV, NETWARCOM, ASN RDA and the FORCEnet/C4I Virtual Systems Command Governance Board.

4) Osprey Hawksbill - This is a classified program.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604231N Tactical Command System	9123 FORCEnet

(U) B. Accomplishments/Planned Program

FY06 Planning:

1) DoN Transformation within DoD Framework *(Strategic Planning)* : Refine expanded Joint/Allied/Coalition coordination/policy/planning. Validate FORCEnet Requirements/Architectures/Standards Spiral / Iteration. Update integrated FORCEnet Consolidated Compliance Checklist and execute initial Navy-wide implementation. Support Fleet FORCEnet Operational Advisory Group meetings. Initiate planning for Navy wide FORCEnet compliance via a development of a Secretary of the Navy (SECNAV) Instruction for FORCEnet. Support development of final reports, and integrate results into policy/planning.

2) Accelerating Joint Warfighting Capability *(Trident Warrior):* Execute Trident Warrior 05 (TW05) in November 05 in the 2nd Fleet Area of Responsibility (AOR). Continue support for spiral development of programs of record. Focus on FORCEnet Coalition/Allied Interoperability. Create Coalition Naval Force Network with shore infrastructure to remain in place to support Trident Warrior 06 (TW06), with potential to support real-world operations. Provide leave behind capability for one deployment cycle of successful technologies for extended operational assessment. Conduct analysis of TW 05 experiment results and deliver Military Utility Assessment recommendations to NETWARCOM, CFFC and the Sea Trial ESG. Complete planning and preparation for TW06 including scenario and objective development, risk mitigation and logistics planning. Conduct TW06 in June-July 2006 in the Commander Third Fleet (C3F) AOR with C3F Carrier Strike Group/Expeditionary Strike Group (CSG / ESG) units, United States Marine Corp (USMC), Marine Corps Combat Development Center (MCCDC), International Military Education and Training (IMET) and AUSCANNZUKUS Multi-National Task Group focused on Expeditionary Warfare and Maritime Domain Awareness. Plan and execute TW06 operational events to accelerate transition of FORCEnet capability to the Fleet. Complete analysis of TW06 experiment results and deliver Military Utility Assessment to NETWARCOM, CFFC and the Sea Trial ESG. Begin planning for Trident Warrior 07 (TW07). Develop FY07-08 FORCEnet Sea Trial Plan.

3) FORCEnet Compliance Implementation *(FORCEnet Implementation Baseline):* Perform Program of Record (POR) compliance reviews using validated assessment tools, compliance test procedures/methodologies. Report POR level of FORCEnet compliance to OPNAV, NETWARCOM, ASN(RD&A) and the FORCEnet/C4I Virtual Systems Command Governance Board. Refine/update FORCEnet Integrated Baseline and insert compliance data/results.

4) Osprey Hawksbill - This is a classified program.

FY07 Planning:

1) DoN Transformation within DoD Framework *(Strategic Planning):* Refine expanded Joint/Allied/Coalition coordination/policy/planning. Validate FORCEnet Requirements/Architectures/Standards Spiral / Iteration. Update integrated FORCEnet Consolidated Compliance Checklist and execute formal full Navy-wide implementation. Support FORCEnet Operational Advisory Group meetings. Support development of final reports, and integrate results into policy/planning.

2) Accelerating Joint Warfighting Capability *(Trident Warrior):* Explore TW07 execution option with Commander Second Fleet (C2F) Carrior Strike Group/Expeditionary Strike Group (CSG / ESG) units with continued Coalition presence. Possible focus to include Global War on Terrorism (GWOT) and Maritime Domain Awareness (MDA). Investigate operational level implementation of Global Information Grid and Network Centric Enterprise Services technologies and associated Tactics, Techniques, and Procedures (TTPs) and CONOPS. Continue support for the spiral development of programs of record. Plan and execute TW07 operational events to accelerate transition of FORCEnet capability to the Fleet. Provide leave behind capability for one deployment cycle of successful technologies for extended operational assessment. Begin planning for Trident Warrior 08. Develop 08-09 FORCEnet Sea Trial Plan.

3) FORCEnet Compliance Implementation *(FORCEnet Implementation Baseline):* Perform POR compliance reviews using validated assessment tools, compliance test procedures/methodologies. Report POR level of FORCEnet compliance to OPNAV, NETWARCOM, ASN(RD&A) and the FORCEnet/C4I Virtual Systems Command Governance Board. Refine/update FORCEnet Implementation Baseline and insert compliance data/results.

4) Osprey Hawksbill - This is a classified program.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA- 5	0604231N Tactical Command System	9123 FORCEnet

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

(U) D. ACQUISITION STRATEGY:

Not Applicable

(U) E. MAJOR PERFORMERS:

FY 2005 / FY 2006 / FY 2007:
Federal System Integration & Management Center / Science Applications Internation Corporation (FEDSIM/SAIC), Alexandria, VA: End-to-End Mission Support
Booz Allen Hamilton, CA: System Engineering Support
Space and Naval Warfare Systems Command System Center (SSC), San Diego, CA: Trident Warrior (TW) Risk Reduction level of effort (LOE), Test Director, Tech Lead, Analysis Support, Network Engineering Support, Install Support
Naval Post Graduate School, CA: Analysis Support and Analysis Lead
Defense Technical Information Center (DTIC), VA: NETWARCOM Engineering Information Assurance (IA) Support

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA- 5	0604231N Tactical Command System	9123 FORCEnet

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Aircraft Integration											0.000	0.000
Ship Integration	Various	Various	0.935								0.935	0.000
Ship Suitability											0.000	0.000
Systems Engineering	Various	Various	1.600								1.600	0.000
Award Fees											0.000	0.000
Subtotal Product Development			2.535	0.000		0.000		0.000		0.000	2.535	0.000
Remarks:												
Development Support	Various	Various	2.700								2.700	0.000
Software Development	Various	Various	2.900								2.900	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
Osprey Hawksbill	Various	Various	3.281	3.000	Various	2.899	Various	3.000	Various	Continuing	Continuing	0.000
GFE											0.000	0.000
Subtotal Support			8.881	3.000		2.899		3.000		0.000	17.780	0.000
Remarks:												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604231N Tactical Command System

PROJECT NUMBER AND NAME: 9123 FORCEnet

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.300								1.300	0.000
Accelerating Joint Warfighting Capab	Various	Various		5.534	Various	5.797	Various	5.481	Various	Continuing	Continuing	0.000
FORCEnet Compliance Implementation				3.000	Various	2.899	Various	3.000	Various	Continuing	Continuing	0.000
DoN Transformation (Strategic Planning)			1.953	3.700	Various	3.661	Various	3.700	Various	Continuing	Continuing	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			3.253	12.234		12.357		12.181		0.000	40.025	0.000

Remarks:

Technical Support			2.124								2.124	0.000
Government Engineering Support			3.899								3.899	0.000
Program Management Support			0.800								0.800	0.000
Travel			0.299								0.299	0.000
Subtotal Management			7.122			0.000		0.000			7.122	0.000

Remarks:

Total Cost			21.791	15.234		15.256		15.181				0.000

Remarks:

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	Various Congressional Increases

(U) B. Accomplishments/Planned Program

9372 Tactical 3D Common Operational Picture (COP)	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.499	3.400	0.000
RDT&E Articles Quantity			

FY05-06: Tactical 3 Dimensional (3D) Common Operational Picture (COP) Congressional Increase provides for the requirements analysis, design, software development, testing and demonstration support necessary to mature a GCCS-M 3D capability. Specific capability improvements include performance analysis and improvement, full Range Ring / Drop Down line capability, 3D model scaling (relative sizes), enhanced automatic model selection for other track types (Units, Link, etc.), improved track hook (more attributes), additional overlay display in 3D (mission routes, etc.), enhanced support for Space and Missile tracks, I3 access for sensor coverage areas, collaboration tools, 3D Display issues (No Altitude, No Z axis, etc.), record/replay feature (possible Experiment / Demonstration).

9373 UYQ-70 based IT-21C4ISR upgrades	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.053	1.700	0.000
RDT&E Articles Quantity			

Congressional increase for Information Technology (IT) for the 21st Century Block 1 Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Computing Equipment (IT-21 Block 1) is developmental engineering effort that will add functionality and focus on improving supportability of deployed systems that reduces fleet maintenance and training requirements. Many of the C4ISR and other similar applications run on outdated, unsupported equipment. Existing computer systems are inadequate to host the software that is needed to improve the functionality of fleet C4ISR systems. Innovations in network solutions are needed to support existing needs as well as provide sufficient growth potential for additional functionality. Commercially produced products suffer from the lack of coordination of technology upgrades and life cycle support that plagued the Tactical Advanced Computer (TAC) series of equipment. C4ISR systems have become critical to the overall effectiveness of deployed units. Access to information located anywhere (network centric warfare) is needed to accomplish increasingly complex missions. Legacy equipment was not designed for survivability in harsh combat environments and scenarios. Development of prototypes to replace this legacy equipment will provide a more robust capability under the most demanding conditions, and will also avoid costly and inefficient support of outdated systems. This RDT&E,N funding will be used to develop a common AN/UYQ-70 based solution for IT-21 Block 1 and ultimately ForceNet. Capitalizing on the AN/UYQ-70 Technology allows fast-cycle development and provides improved fleet capability at a reduced cost.

FY05 Accomplishments:
· Continued design, development and testing of upgraded AN/UYQ-70 IT-21 integrated racks.
· Continued integration efforts to include standardized configuration, integrated documentation and integrated software applications.
· Continued development of Integrated Logistics Support (ILS) Plan.

FY06 Plans:
· Continue to design, develop and test upgraded AN/UYQ-70 IT-21 integrated racks.
· Continue to integrate efforts to include standardized configuration, integrated documentation and integrated software applications.
· Continue to develop Integrated Logistics Support (ILS) Plans.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604231N - Tactical Command System	Various Congressional Increases

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

9893 ACETEF UPGRADED RDT&E CAPABILITY	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.100	0.000
RDT&E Articles Quantity			

FY06 -Congressional Increase for ACETEF Upgraded RDT&E Capability.

9894 ADVANCED TECHNOLOGY SENSOR PAYLOADS	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	3.400	0.000
RDT&E Articles Quantity			

FY06 -Congressional Increase for Advanced Technology Sensor Payloads.

9895 LOGISTICS COMMON OPERATING PICTURE	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.000	0.000
RDT&E Articles Quantity	0	1	0

FY06 - Congressional Plus-Up for Logistics Common Operating Picture

Funds will be used to design, develop and test the Logistics Common Operating Picture (LOGCOP) tool. This logistics decision-support management tool will utilize emergent technologies to enable the exposure of logistics data and provide actionable logistics information both afloat and ashore.

9896 NAVALSPECIAL WARFARE UUV SENSORS AND C2 STTR	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.000	0.000
RDT&E Articles Quantity			

FY06 - Congressional increase for Naval Special Warfare UUV Sensors and C2 STTR

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604234N, E-2C RADAR MODERNIZATION PROGRAM		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	542.447	614.231	497.842	748.203	339.531	163.569	96.609	
3051 E-2C RMP	542.447	614.231	497.842	748.203	339.531	163.569	96.609	

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

The E-2 Advanced Hawkeye (AHE) program 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, battle management, 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.

This P.E. was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D) , followed by SD&D. The program supported a Weapon System Preliminary Design Review (PDR) and a Radar System Critical Design Review (CDR) in FY 2005. Major activities in FY 2006 are to support subsystem and weapon system Critical Design Reviews (CDR) and risk reduction efforts. FY 2006 efforts also include subsystem delivery for systems integration lab activities. The program begins E-2 AHE Pilot Production in FY 2007 (long lead on four aircraft), the production phase with a Low-Rate Initial Production (LRIP) Milestone C decision in FY 2009, and achieves Initial Operational Capability (IOC) in FY 2011.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604234N, E-2C RADAR MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3051, E-2C RMP	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3051 E-2C RMP	542.447	614.231	497.842	748.203	339.531	163.569	96.609	
RDT&E Articles Qty			2*	4*				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
The E-2 Advanced Hawkeye (AHE) program 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, battle management, 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 program 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 operational availability and 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. The AHE is intended to meet battle management and TAMD needs as the United States Navy develops its "Sea Power 21" concepts in support of Joint Vision 2020.

This P.E. was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D) , followed by SD&D. The program supported a Weapon System Preliminary Design Review (PDR) and a Radar System Critical Design Review (CDR) in FY 2005. Major activities in FY 2006 are to support subsystem and weapon system Critical Design Reviews (CDR) and risk reduction efforts. FY 2006 efforts also include subsystem delivery for systems integration lab activities. The program begins E-2 AHE Pilot Production in FY 2007 (long lead on four aircraft), the production phase with a Low-Rate Initial Production (LRIP) Milestone C decision in FY 2009, and achieves Initial Operational Capability (IOC) in FY 2011.

*Two Multi-Year Procurement E-2C aircraft will be delivered and modified in FY07 to provide RDT&E assets for the AHE program. Quantities in FY08 are the pilot production aircraft.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604234N, E-2C RADAR MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3051, E-2C RMP	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		9.810	56.068	
RDT&E Articles Qty				

Fund Weapons System Trainers (WST), Operational Flight Trainers (OFT) and Simulated Maintenance Trainers (SMT).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	5.526	1.250	.240	
RDT&E Articles Qty				

NC-130H/E-2 Classified Programs
Provided support for the NC-130H engineering risk reduction efforts. Fund E-2 Classified Development efforts. Funded NC-130H AHE Advanced Development Model (ADM) system flight test and test analysis.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	23.275	24.555	44.549	
RDT&E Articles Qty				

NAWCAD Support
Fund Government Engineering, Contractor Engineering, and Classified Engineering Support. Perform Government oversight. Perform engineering and loads analysis, design, preparation, installation and ground test calibration of instrumentation and for A-123 Loads Test. Execute test program risk reduction efforts. Increase in FY07 is to fund Qualification/Reliability Developmental Testing (QUAL/RDT), preparation for first flight activities at St. Augustine, FL, development and creation of the wind tunnel test model, preparation for the wind tunnel testing to include the rehost of the simulation data, and design and develop a digital engine control system for obsolescence, weight reduction, and performance improvements.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604234N, E-2C RADAR MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3051, E-2C RMP	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	6.686	1.186	20.278	
RDT&E Articles Qty				

Government Furnished Equipment (GFE)
Fund GFE for the SDD aircraft in FY05 and FY06. Initial funding for pilot production aircraft GFE in FY07.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	506.961	577.430	376.707	
RDT&E Articles Qty			2	

System Development and Demonstration (SD&D)
Awarded SD&D Contract with Northrop Grumman Corporation. Entered into SD&D for E-2 AHE program; conducted engineering and development efforts in preparation for Preliminary Design Review for the AHE weapons system, and Radar Critical Design Review (CDR). Conducted engineering and development efforts in preparation for Weapon System CDR and SDD pilot production. Continue SD&D effort.

Totals may not add due to rounding.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604234N, E-2C RADAR MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3051, E-2C RMP

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	590.592	629.682	558.415
Current BES / President's Budget:	542.447	614.231	497.842
Total Adjustments	-48.145	-15.451	-60.573
Summary of Adjustments			
Congressional Reductions		-6.000	
Congressional Rescissions			
Congressional Undistributed Reductions	-15.129	-6.584	
Congressional Increases			
Economic Assumptions		-2.867	3.370
Miscellaneous Adjustments	-33.016		-63.943
Subtotal	-48.145	-15.451	-60.573

Schedule:
Development Test DT/DT Assist - schedule has been adjusted to correspond with SDD deliveries.
Production Milestones schedule has been changed to reflect pilot production contract award.

Technical:
Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604234N, E-2C RADAR MODERNIZATION PROGRAM**	PROJECT NUMBER AND NAME 3051, E-2C RMP	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-1/E-2C (LI# 14 & 15)				76.089	709.377	797.224	785.947	9,749.892	12,118.529
APN-6/E-2C (LI #55)					15.997	11.478	9.179	175.425	212.079

APN Funding prior to FY08 is related to P.E. 0204152N, P.U. 0463, E-2C Improvements.

Related RDT&E
(U) 0603658N (Ship Self Defense, CEC)

E. ACQUISITION STRATEGY:
Acquisition Strategy was signed by the MDA, USD (AT&L) on 13 May 2003. Milestone B approval to proceed with System Development and Demonstration was given 6 June 2003 by the Defense Acquisition Board (DAB).

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604234N, E-2C RADAR MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fees	SS-CPAF	NORTHROP GRUMMAN SYS, NY	8.589	8.607	10/04	24.482	10/05	18.845	10/06	70.879	131.400	131.400
GFE	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.063	10/04						1.063	
GFE	VARIOUS	ROCKWELL COLLINS, INC., CEDAR RAPIDS		1.382	10/04						1.382	
GFE	VARIOUS	SPAWARSYSCOM, SAN DIEGO CA		1.733	10/04						1.733	
GFE	VARIOUS	VARIOUS		2.508	VARIOUS	1.186	10/05	20.278	10/06	47.026	70.999	
Primary Hardware Development - SDD	SS-CPAF	NORTHROP GRUMMAN SYS, NY	305.780	492.753	10/04	547.211	10/05	347.333	10/06	933.498	2,626.576	2,626.576
Systems Engineering	RX	NAVY SYST MGT ACT, ARLINGTON VA		.500	06/05						.500	
Training Development	TBD	TBD				9.810	02/06	56.068	02/07	80.523	146.401	
All Product Dev cost from program implementation thru FY04			139.948								139.948	
SUBTOTAL PRODUCT DEVELOPMENT			454.317	508.546		582.689		442.524		1,131.926	3,120.001	

Remarks: Totals may not add due to rounding.

SUPPORT												
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAVY SYST MGT ACT, ARLINGTON VA		.805	11/04			1.516	11/06	4.483	6.804	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAWCAD, PATUXENT RIVER MD		.357	12/04			2.121	12/06	8.638	11.115	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	VARIOUS		.623		2.224	12/05				2.847	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD		13.844	11/04	14.189	11/05	27.319	11/06	102.612	157.964	
Government Eng Sup	VARIOUS	VARIOUS		.584	VARIOUS			1.100	VARIOUS	6.178	7.862	
Studies & Analyses (Non- FFRDC)	RX	NAVY SYST MGT ACT, ARLINGTON VA		2.518	06/05	1.250	06/06				3.768	
All Support cost from program implementation thru FY04			14.300								14.300	
SUBTOTAL SUPPORT			14.300	18.731		17.663		32.056		121.910	204.660	

Remarks: Totals may not add due to rounding.

TEST & EVALUATION												
Developmental Test & Evaluation	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.700	11/04	5.737	11/05	10.529	11/06	85.914	103.880	
Developmental Test & Evaluation	VARIOUS	TBD								6.616	6.616	
Test Assets	SS/CPAF	NORTHROP GRUMMAN SYS, NY		3.900	12/04						3.900	3.900
All T&E cost from program implementation thru FY04			9.223								9.223	
SUBTOTAL TEST & EVALUATION			9.223	5.600		5.737		10.529		92.530	123.620	

Remarks: Totals may not add due to rounding.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604234N, E-2C RADAR MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT												
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	ADVANCED INFORMATION ENGINEERING S		4.166	11/04						4.166	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	NAVY SYST MGT ACT, ARLINGTON VA		1.703	11/04			2.479	11/06	8.669	12.851	
Contractor Eng Sup ETS (Non-FFRDC)	VARIOUS	VARIOUS		.457	VARIOUS	5.710	11/05	4.330	11/06	20.489	30.987	
Government Eng Spt - CEC P3I	TBD	TBD						.673	11/06	4.849	5.522	
Government Eng Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD		2.536	11/04					8.981	11.517	
Government Eng Sup	VARIOUS	VARIOUS						3.922	11/06	7.692	11.614	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD				2.106	11/05	.829	11/06	3.469	6.403	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD		.008	VARIOUS					2.772	2.780	
Travel	VARIOUS	NAWCAD, PATUXENT RIVER MD	.350	.700	11/04	.326	11/05	.500	11/06	2.113	3.989	
All Mgmt cost from program implementation thru FY04			28.578								28.578	
SUBTOTAL MANAGEMENT			28.928	9.570		8.142		12.733		59.034	118.407	

Remarks: Totals may not add due to rounding.

Total Cost			506.769	542.447		614.231		497.842		1,405.400	3,566.687	

Remarks: Totals may not add due to rounding.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604234N, E-2C RADAR MODERNIZATION PROGRAM	3051, E-2C RMP

Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	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																		MS C △									IOC △						
AHE System Development	PDR ▲				CDR ▲																											
SDD AHE Systems Installation												Two Units △																				
Test & Evaluation Milestones																							DT/DT Assist - Pilot Production									
Development Test	DT/DT Assist											DT/DT Assist															OT Readiness Review △						
Operational Test																Operational Assessment																
Production Milestones									Pilot Production CA △								LRIP I CA △				LRIP II CA △				LRIP III CA △							
Deliveries																					4 a/c PP Delivery						4 a/c LRIP 1				

* DT/DT Assist in FY05/FY06 and 1Q-2Q of FY07 includes NC-130/A-123/lab integration dedicated for weapon system development and air vehicle testing.

* DT/DT Assist in FY07-FY09 includes efforts for weapon system development and air vehicle testing on SD&D #1 and SD&D #2 aircraft.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604234N, E-2C RADAR MODERNIZATION PROGRAM				PROJECT NUMBER AND NAME 3051, E-2C RMP			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Acquisition Milestones - Milestone C					2Q			
AHE System Development - Preliminary Design Review (PDR)	1Q							
AHE System Development - Critical Design Review (CDR)		1Q						
SDD AHE Systems Installation			4Q					
Test & Evaluation Milestones - Development Test - A-123 & NC-130	1Q-4Q	1Q-4Q	1Q-2Q					
Test & Evaluation Milestones - Development Test - SD&D #1 & 2			4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Test & Evaluation Milestones - Operational Assessment				4Q				
Production Milestones - Pilot Production Contract Award			2Q					
Production Milestones - LRIP I Contract Award (CA)					2Q			
DT/DT Assist - Pilot Production						4Q	1Q-4Q	
Production Milestones - LRIP II Contract Award						2Q		
Production Milestones - LRIP III Contract Award							2Q	
Initial Operational Capabilities (IOC)							3Q	
Operational Test - Readiness Review							4Q	
Pilot Production Delivery (4 A/C)						2Q-4Q	1Q	
LRIP 1 (4 A/C)							3Q-4Q	

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604245N, H-1 UPGRADES		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	168.171	41.382	7.844	3.656	3.832	3.970	3.767	
H2279 USMC H-1 UPGRADES	168.171	41.382	7.844	3.656	3.832	3.970	3.767	

(U) A. 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 w semi-automatic bladefold, 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 onboard mission planning, communications, digital fire control, self-navigation, night navigation/targetin and weapon systems management in nearly identical crew stations, which significantly reduces 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604245N, H-1 UPGRADES**	PROJECT NUMBER AND NAME H2279, USMC H-1 UPGRADES	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
H2279 USMC H-1 UPGRADES	168.171	41.382	7.844	3.656	3.832	3.970	3.767	
RDT&E Articles Qty								

A. 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 bladefold, 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 onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting,
and weapon systems management in nearly identical crew stations, which significantly reduces 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.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	5.455		
RDT&E Articles Qty			

Various field activities will perform level of repair analysis, logistics support analysis, reliability centered maintenance analysis, configuration management, and integrated mechanical diagnostics.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	6.631	5.100	3.482
RDT&E Articles Qty			

Conduct Software development efforts to support development testing and address operational testing results. FY07 is to conduct development support efforts.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604245N, H-1 UPGRADES**	PROJECT NUMBER AND NAME H2279, USMC H-1 UPGRADES

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	2.210	1.143	.862
RDT&E Articles Qty			

Perform contractor engineering and technical support including risk analysis, in support of development activities, and travel.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	19.011	2.500	2.423
RDT&E Articles Qty			

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 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	8.949	4.269	
RDT&E Articles Qty			

Conduct development support efforts to correct deficiencies as a result of operational test; conduct component fatigue testing; and technical data analysis.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604245N, H-1 UPGRADES**	PROJECT NUMBER AND NAME H2279, USMC H-1 UPGRADES

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	125.915	28.370	1.077
RDT&E Articles Qty			

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

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	173.046	42.012	7.700
Current BES / President's Budget:	168.171	41.382	7.844
Total Adjustments	-4.875	-0.630	0.144
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-4.681	-0.439	
Congressional Increases			
Economic Assumptions		-0.191	0.215
Miscellaneous Adjustments	-0.194		-0.071
Subtotal	-4.875	-0.630	0.144

Schedule: The commencement of OPEVAL was delayed due to technical issues with the Helmet Mounted Sight Display (HMSD) system.
Additionally, the MSIII decision was moved to 1Q FY07. These technical issues also caused a 0ne-quarter delay in the LRIP l and LRIP ll production delivery schedule.

Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604245N, H-1 UPGRADES**	PROJECT NUMBER AND NAME H2279, USMC H-1 UPGRADES	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P-1 LI #9, UH-1Y/AH-1Z (4BN/4BW)	213.061	314.457	446.718	440.817	484.852	503.940	504.865	3,234.058	6,461.878
Quantity	7	10	18	19	23	23	23	148	280

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.

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604245N, H-1 UPGRADES				PROJECT NUMBER AND NAME H2279, USMC H-1 UPGRADES							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
PRODUCT DEVELOPMENT													
GFE	SS-WX/PX	BELL HELICOPTER TEXTRON INC, HURST, TX	21.050	1.846	11/1/2004						22.896	22.896	
GFE	VARIOUS	VARIOUS		.802	VARIOUS						.802		
Primary Hdw Development	SS-CPFF	BELL HELICOPTER TEXTRON INC, HURST, TX	917.328	125.915	11/1/2004	28.370	11/1/2005				1,071.613	1,071.613	
Systems Eng	SS-WX/PX	NAWCAD, PATUXENT RIVER MD		3.500	11/1/2004						3.500		
Systems Eng	VARIOUS	VARIOUS		1.045	VARIOUS						1.045		
Systems Eng	SS-WX/PX	TBD	72.222	.393	11/1/2004						72.615		
SUBTOTAL PRODUCT DEVELOPMEN			1,010.600	133.500		28.370					1,172.470		
Remarks: *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.													
SUPPORT													
Development Support	SS-WX/PX	BELL HELICOPTER TEXTRON INC, HURST, TX		4.247	11/1/2004						4.247	4.247	
Development Support	SS-WX/PX	NAWCWD, CHINA LAKE CA	1.387	4.702	11/1/2004	3.754	11/1/2005				9.843		
Development Support	SS-WX/PX	TBD								7.870	7.870		
Integrated Logistics Sup	SS-WX/PX	TBD	24.340	2.807	11/1/2004	.515	11/1/2005				27.662		
Software Dev. Weapons Integration	SS-WX/PX	NAWCWD, CHINA LAKE CA	2.800	1.694	11/1/2004	5.100	11/1/2005	4.559	11/1/2006	6.112	20.265		
SUBTOTAL SUPPORT			28.527	13.450		9.369		4.559		13.982	69.887		
Remarks:													
TEST & EVALUATION													
Dev Test & Eval	SS-WX/PX	NAWCAD, PATUXENT RIVER MD	35.252	12.170	11/1/2004	2.500	11/1/2005	2.423	11/1/2006	.343	52.688		
Dev Test & Eval	VARIOUS	VARIOUS		.188	VARIOUS						.188		
Live Fire Test & Evaluation	SS-WX/PX	NAWCWD, CHINA LAKE CA		1.453	11/1/2004						1.453		
Live Fire Test & Evaluation	SS-WX/PX	BELL HELICOPTER TEXTRON INC, HURST, TX		.200	11/1/2004						.200	.200	
Oper Test & Eval	SS-WX/PX	TBD	2.406	5.000	11/1/2004						7.406		
SUBTOTAL TEST & EVALUATION			37.658	19.011		2.500		2.423		.343	61.935		
Remarks:													
MANAGEMENT													
Contractor Eng Sup	C-FFP	TBD	4.670	.972	11/1/2004	.535	11/1/2005	.360	11/1/2006		6.537		
Program Mgmt Sup	C-FFP	TBD	5.767	.968	11/1/2004	.338	11/1/2005	.232	11/1/2006		7.305		
Travel	SS-WX/PX	NAWCAD, PATUXENT RIVER MD	2.117	.270	11/1/2004	.270	11/1/2005	.270	11/1/2006	.900	3.827		
SUBTOTAL MANAGEMENT			12.554	2.210		1.143		.862		.900	17.669		
Remarks:													
Total Cost			1,089.339	168.171		41.382		7.844		15.225	1,321.961		
Remarks:													

CLASSIFICATION:

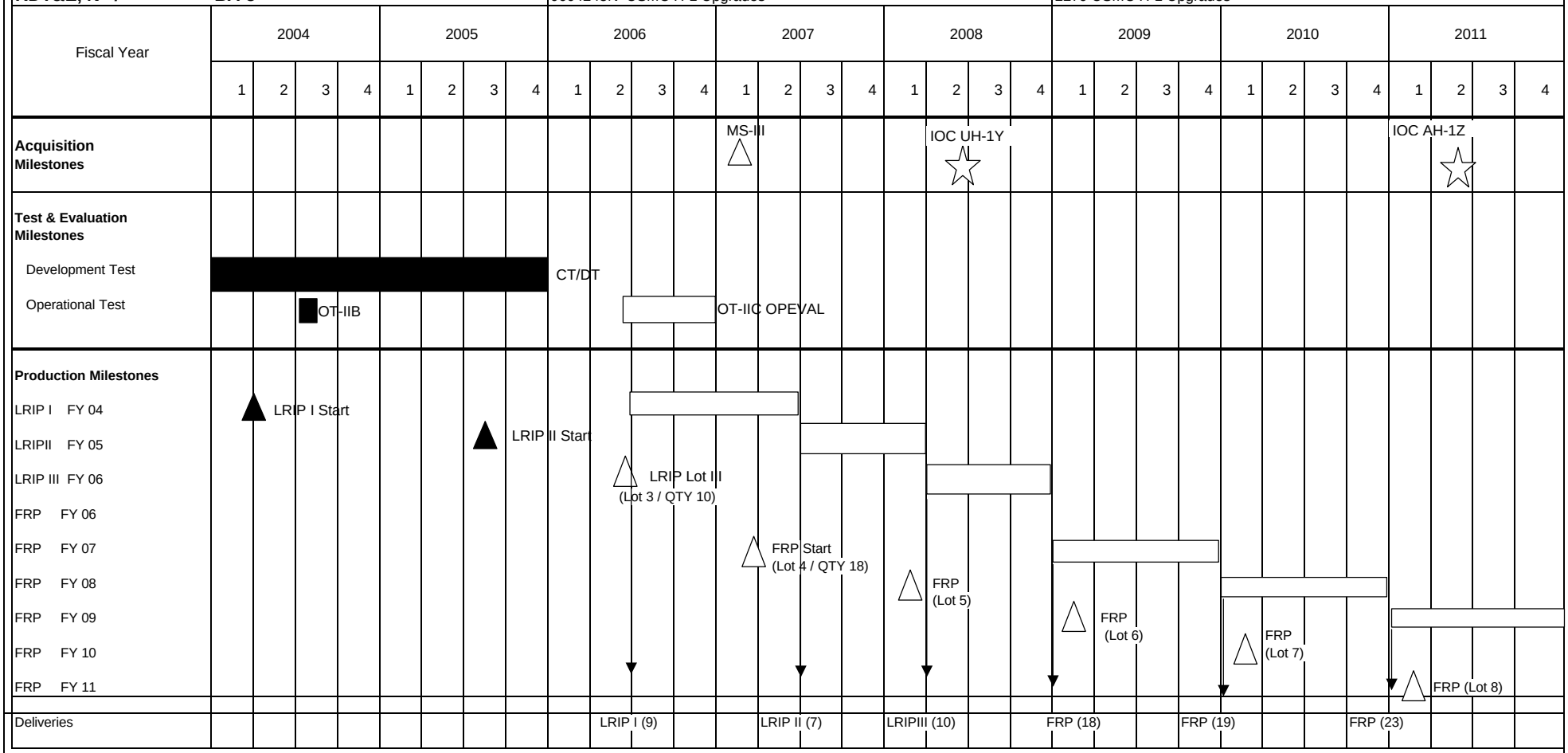
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604245N USMC H-1 Upgrades

PROJECT NUMBER AND NAME: 2279 USMC H-1 Upgrades



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Full Rate Production (FRP) Decision Milestone III				1Q				
IOC					2Q UH-1Y			2Q AH-1Z
Developmental Testing (DT-II)	1Q-4Q	1Q-4Q						
Operational Testing (OT-IIB)	3Q							
Operational Evaluation (OT-IIC) (OPEVAL)			2Q-4Q					
Start Low-Rate Initial Production I (LRIP I)	2Q							
Low-Rate Initial Production I Delivery			3Q - 4Q	1Q-2Q				
Start Low-Rate Initial Production II (LRIP II)		2Q						
Low-Rate Initial Production II Delivery				3Q-4Q	1Q			
Start Low-Rate Initial Production III (LRIP III)			2Q					
Low-Rate Initial Production III Delivery					2Q-4Q			
Full Rate Production Start				1Q	1Q	1Q	1Q	1Q
Full Rate Production (FRP) Delivery						1Q-4Q	1Q-4Q	1Q-4Q

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604261N, ACOUSTIC SEARCH SENSORS		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	14.418	33.569	36.764	45.043	38.000	54.916	54.906	
0480 ASW SENSORS & PROC	11.731	17.057	8.426	8.590	23.969	41.019	41.041	
4017 ARPDD	2.687	12.012	28.338	36.453	14.031	13.897	13.865	
9999 Congressional Adds		4.500						

FY2005 budget reflects a $1.400 million Congressional add for Littoral Airborne Acoustic ASW Enhancements, which has been reduced by $.056 million for Congressional Undistributed Reductions.
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
(U) (0480) - 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 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 track. 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 0480 provides funding for the engineering development of solutions that acquire, confirm, and track threat submarines. Efforts being funded during the period identified are the Extended Echo Ranging (EER) family of multi-static active sensor systems and the Advanced Processing Build (APB) programs. Multi-static ASW (MSA) sensor systems provide improved threat target detection capabilities for shallow water littoral environments. The development efforts funded during the period identified include the Improved Extended Echo Ranging (IEER) multi-static search receiver sensor for active large area ASW search; the Advanced Extended Echo Ranging (AEER) active coherent (electronic) sound source, a new start in FY09, which provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training and Rules of Engagement restrictions; and Advanced Processing Builds which provide signal processing improvements to achieve increased target detection and classification capabilities. A technology adjunct to these programs include Sonobuoy Precise Positioning.
(U) (4017) - 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 clutter and confusion targets. This capability is suitable for air and surface platforms. This project funds only the airborne application.

(U) (9999) - Congressional Adds.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
0480 ASW SENSORS & PROC	11.731	17.057	8.426	8.590	23.969	41.019	41.041	
RDT&E Articles Qty					300	300	300	

FY2005 budget reflects a $1.400 million Congressional add for Littoral Airborne Acoustic ASW Enhancements, which has been reduced by $.056 million for Congressional Undistributed Reductions.
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ASW Sensors and Processing project provides the tools and methods necessary to maintain superiority by preventing hostile submarines from disrupting the US Navy's ability to 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 (ADW) cueing, search, localization, and track. 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 0480 provides funding for the engineering development of solutions that acquire, confirm, and track threat submarines. Efforts being funded during the period identified are the Extended Echo Ranging (EER) family of shallow water littoral environments. The development efforts funded during the period identified include the Improved Extended Echo Ranging (IEER) multi-static search receiver sensor for active large area ASW search; the Advanced Extended Echo Ranging (AEER)active coherent (electronic) sound source, a new start in FY09, which provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training and Rules of Engagement restrictions; and Advanced Processing Builds which provide signal processing improvements to achieve increased target detection and classification capabilities. The 900 sonobuoy test articles will support software and hardware integration flight tests and Technical Evaluation (TECHEVAL)/Operational Evaluation (OPEVAL) for AEER Block 1.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.344			
RDT&E Articles Qty				

Evaluate and prototype the algorithms and displays that should be considered for use with the USQ-78B. Implement and integrate the algorithms and displays into the USQ-78B system, and demonstrate their tactical utility.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	10.387	17.057	8.426	
RDT&E Articles Qty				

Software development, integration, and test for Multi-Static ASW (MSA) sensor systems. Provides P-3 platform integration of multi-static technology improvements allowing increased weapons system efficiency and decreased fleet operator workload in the littoral ASW mission.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:	11.781	17.323	8.207
Current BES / President's Budget:	11.731	17.057	8.426
Total Adjustments	-0.050	-0.266	0.219
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.177	-0.187	
Congressional Increases			
Economic Assumptions		-0.079	
Miscellaneous Adjustments	0.127		0.219
Subtotal	-0.050	-0.266	0.219

Schedule: 1Q-FY08, added in Multistatic ASW contract award to provide additional program definiton.

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
(U) OPN (404800) SSQ -110B	1.1	5.1	4.0						

(U) P.E. 0603254N (ASW Systems Dev)

E. ACQUISITION STRATEGY: The integration of Multi-Static ASW (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.

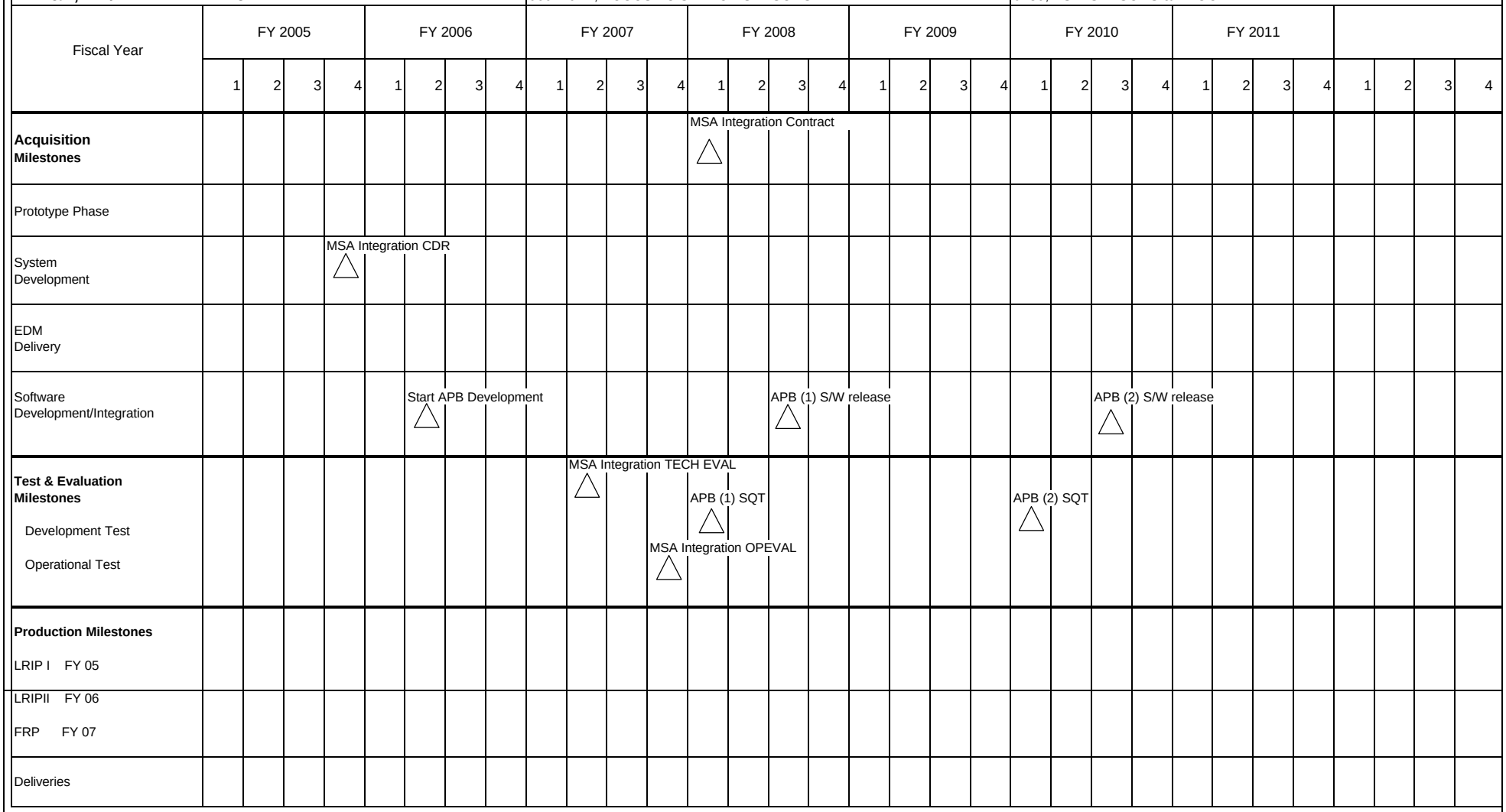
Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hardware Development	C-CPFF	TBD	1.000							26.000	27.000	27.000
SUBTOTAL PRODUCT DEVELOPMEN			1.000							26.000	27.000	
Remarks:												
SUPPORT												
Software Development	C-CPFF	LOCKHEED MARTIN CORPORATION, MANASSAS, VA		.490	2/28/2005						.490	.490
Software Development (Phase II)	WX	NAWCAD, PATUXENT RIVER MD	1.000	.995	11/30/2004	2.600	10/31/2005	2.100	10/31/2006	43.284	49.979	
Software Development (Phase IIA)	WX	NAWCAD, PATUXENT RIVER MD		1.144	11/30/2004						1.144	
Studies & Analyses	C-CPFF	LOCKHEED MARTIN CORPORATION, MANASSAS, VA		.200	2/28/2005						.200	.200
Technical Data	WX	NAWCAD, PATUXENT RIVER MD	4.382	1.317	10/31/2004	1.630	10/31/2005	.900	10/31/2006	9.400	17.629	
SUBTOTAL SUPPORT			5.382	4.146		4.230		3.000		52.684	69.442	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	3.200	.400	10/31/2004	.750	11/30/2005	.750	11/30/2006	3.850	8.950	
SUBTOTAL TEST & EVALUATION			3.200	.400		.750		.750		3.850	8.950	
Remarks:												
MANAGEMENT												
Contractor Engineering Support	VARIOUS	VARIOUS	2.861	2.290	11/30/2004	3.993	10/31/2005	1.296	10/31/2006	11.502	21.942	21.942
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	54.872	4.347	10/31/2004	7.194	10/31/2005	2.480	10/31/2006	16.858	85.751	
Program Mgmt Support (Cont.)	C-FFP	VARIOUS	40.085	.398	12/31/2004	.700	11/30/2005	.700	11/30/2006	2.800	44.683	44.683
Program Mgmt Support (Gov.)	WX	NAWCAD, PATUXENT RIVER MD	7.023	.150	10/31/2004	.190	10/31/2005	.200	10/31/2006	.925	8.488	
SUBTOTAL MANAGEMENT			104.841	7.185		12.077		4.676		32.085	160.864	
Remarks:												
Total Cost			114.423	11.731		17.057		8.426		114.619	266.256	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
Multi-Static Active

DATE:
February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604261N, ACOUSTIC SEARCH SENSORS	0480, ASW SENSORS & PROC



CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Multi-Static Active**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Integration Contract				1Q				
Critical Design Review (CDR)	4Q							
Software Development		2Q						
Software Delivery 2XXSW				3Q		3Q		
Technical Evaluation (TECHEVAL)			2Q					
Software Qualification Test (SQT)				1Q		1Q		
Operational Evaluation (OT-IIC) (OPEVAL)			4Q					

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
Advanced Extended Echo Ranging (AEER)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604261N, ACOUSTIC SEARCH SENSORS	0480, ASW SENSORS & PROC

Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	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																		MS B △														
System Development Localization SL																					CDR (blk 1) △											
EDM Delivery																						H/W EDM (blk 1) △										
Software Integration																								Integration S/W Delivery (blk 1) △									
Test & Evaluation Milestones Developmental Test																								Commence S/W and H/W Integrated Flt Test (blk 1) △									
Production Milestones																																

Note: AEER, is a spiral upgrade development effort consisting of two block builds. Block 1 is to develop and produce a Coherent Source buoy to provide a multi-static active localization system capability.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Advanced Extended Echo Ranging (AEER)**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone B (MS B)					2Q			
Critical Design Review (CDR) Block 1						1Q		
Eng Dev Model (EDM) Block 1						2Q		
Integration Software Delivery Block 1						4Q		
Developmental Testing (DT-IIB) Block 1							1Q	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
Littoral Airborne Acoustic ASW Enhancements

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604261N, ACOUSTIC SEARCH SENSORS	0480, ASW SENSORS & PROC

Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	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																																
Prototype Phase		△	△																													
System Development		△		△																												
Software 1XX S/W Delivery 2XX S/W Delivery			△	△																												
Test & Evaluation Milestones Demonstration				△																												
Production Milestones																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Littoral Airborne Acoustic ASW Enhancements**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-05**	PROGRAM ELEMENT 0604261N Acoustic Search Sensors				PROJECT NUMBER AND NAME 0480 ASW Sensors & Processing			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Prototype Phase	2Q-3Q							
System Development	2Q-4Q							
Software Delivery 1XX	3Q							
Software Delivery 2XX	4Q							
Demonstration	4Q							

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 4017, ARPDD	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
4017 ARPDD	2.687	12.012	28.338	36.453	14.031	13.897	13.865	
RDT&E Articles Qty						1	1	

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 clutter and confusion 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 and evolutionary application of the ARPDD capability to Airborne radars. Test articles / pre-production units will be provided for systems integration, and development and operational testing. Testing will be performed to support a production decision.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.687	12.012	28.338	
RDT&E Articles Qty				

ARPDD is a follow -on to a Science and Technology program previously funded by the Office of Naval Research in PE0603747N. Funding is being used for project planning, acquistion documentation preparation, performing technical trade-off studies, developing specifications, and a Statement of Work in preparation for awarding a contract for development of an airborne ARPDD capability. Funding will be used to award a development contract for ARPDD System Development and Demonstration (SDD) and associated government support.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 4017, ARPDD	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:	2.809	12.199	46.892
Current BES / President's Budget:	2.687	12.012	28.338
Total Adjustments	-0.122	-0.187	-18.554
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.014	-0.131	
Congressional Increases	0.001		
Economic Assumptions		-0.056	
Miscellaneous Adjustments	-0.109		-18.554
Subtotal	-0.122	-0.187	-18.554

Schedule: Reduction in funding over FYDP; delays development schedule and reduces scope of effort.

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Line Item #36 (APN P-3 OSIP 29-94)	0.0	0.0	0.0						
PE# 0204251N									

E. ACQUISITION STRATEGY: Analyze merits of sole source versus competitive procurement. Explore Alternatives. Award prime contract to TBD contractor. Technical support will be provided by NAWCWD (China Lake) and JHU/APL.

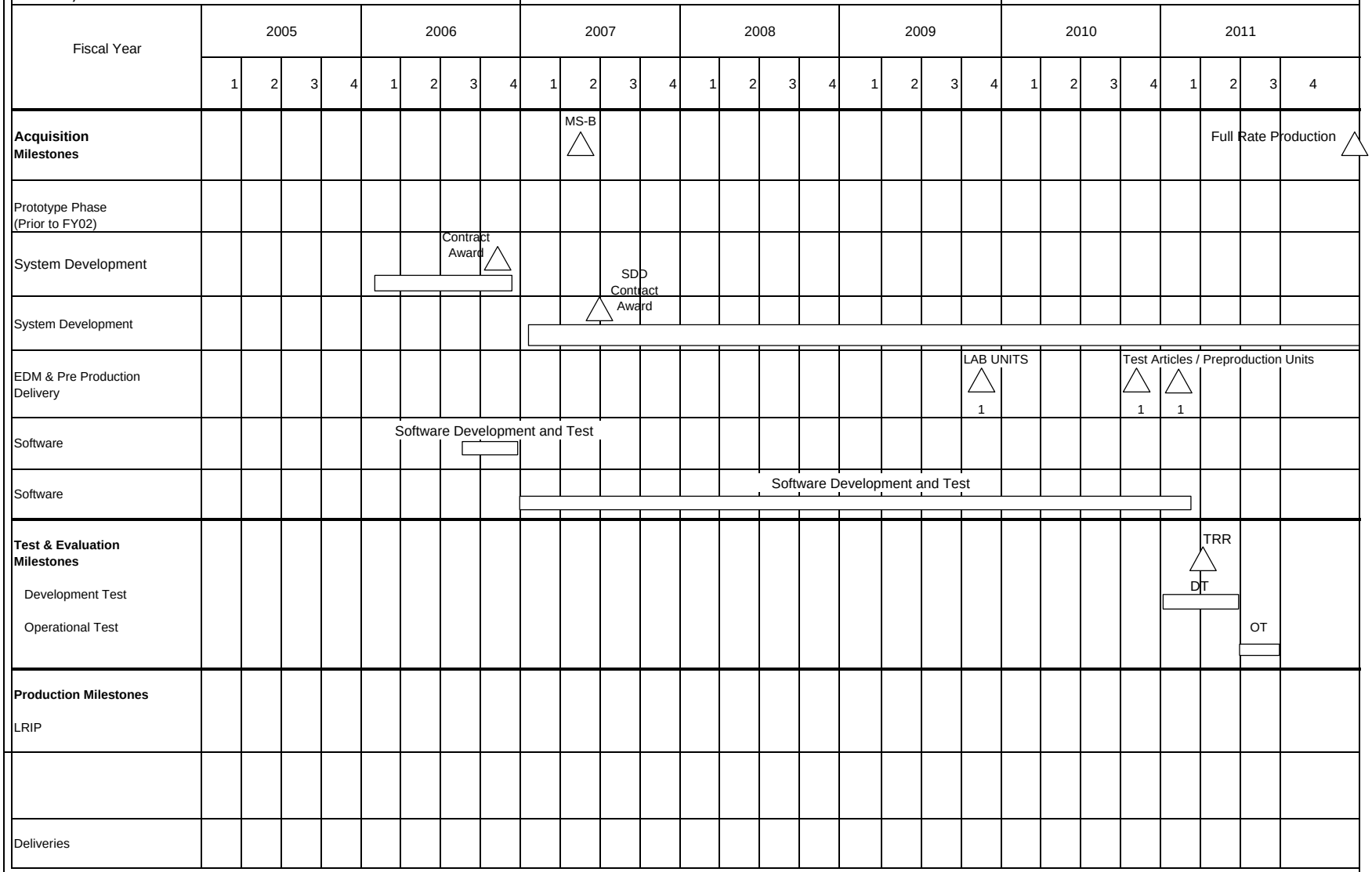
Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 4017, ARPDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	TBD	TBD				9.500	6/30/2006	21.628	3/31/2007	53.825	84.953	84.953
SUBTOTAL PRODUCT DEVELOPMEN						9.500		21.628		53.825	84.953	
Remarks:												
SUPPORT												
Software Development	WX	NAWCWD, CHINA LAKE CA		.390	12/31/2004			.900	11/30/2006	2.000	3.290	
Studies & Analyses	C-CPFF	JOHNS HOPKINS UNIV, COLUMBIA, MD	.511	.200	12/31/2004	.300	11/30/2005	.700	11/30/2006	1.200	2.911	2.911
Software Development (Cont)	VARIOUS	VARIOUS						1.300	11/30/2006	5.200	6.500	6.500
SUBTOTAL SUPPORT			.511	.590		.300		2.900		8.400	12.701	
Remarks:												
TEST & EVALUATION												
Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD								1.500	1.500	
SUBTOTAL TEST & EVALUATION										1.500	1.500	
Remarks:												
MANAGEMENT												
Contractor Eng Sup	TBD	TBD	1.700	1.036	11/30/2004	.702	2/28/2006	.800	11/30/2006	3.200	7.438	7.438
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD		.191	12/31/2004	.200	11/30/2005	.500	11/30/2006	2.000	2.891	
Government Engineering Support	WX	NAWCWD, CHINA LAKE CA	.502	.300	12/31/2004	.800	11/30/2005	2.000	11/30/2006	5.171	8.773	
Program Management Support (Cont)	VARIOUS	VARIOUS	.240	.360	12/31/2004	.300	12/31/2005	.300	12/31/2006	1.400	2.600	2.600
Program Management Support (Gov)	WX	NAWCWD, CHINA LAKE CA	.400	.200	12/30/2004	.200	11/30/2005	.200	11/30/2006	2.710	3.710	
Travel	TO	NAVAIR HQ, PATUXENT RIVER MD	.010	.010	2/28/2005	.010	10/31/2005	.010	11/30/2006	.040	.080	
SUBTOTAL MANAGEMENT			2.852	2.097		2.212		3.810		14.521	25.492	
Remarks:												
Total Cost			3.363	2.687		12.012		28.338		78.246	124.646	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

Automatic Radar Periscope Detection and Discrimination (ARPDD)

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604261N Acoustic Search Sensors	4017 ARPDD



R-1 SHOPPING LIST - Item No. 94

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Automatic Radar Periscope Detection and Discrimination (ARPDD)**					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-05**	PROGRAM ELEMENT 0604261N Acoustic Search Sensors				PROJECT NUMBER AND NAME 4017 ARPDD		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase							
Systems Requirement Review (SRR)							
System Functional Review (SFR)							
Milestone B			2Q				
Contract Award		4Q	2Q				
Software Specification Review (SSR)							
Preliminary Design Review (PDR)							
System Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q - 4Q	1Q - 4Q
Critical Design Review (CDR)							
Quality Design and Build							
Test Readiness Review (TRR)							2Q
Developmental Testing (DT-IIA)							
Lab Units					4Q		
Software Development and Test		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q - 4Q	1Q
Preproduction Readiness Review (PRR)							
Test Article Delivery						4Q	1Q
Milestone C (MS C)							
Operational Testing (OT-IIA)							
Low-Rate Initial Production (LRIP) Decision							
Software Delivery 2XXSW							
Developmental Testing (DT)							1Q-2Q
Developmental Testing (DT-IIB2)							
Start Low-Rate Initial Production II							
Operational Testing (OT)							3Q
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 Initail Production II Delivery							
IOC							
Full Rate Production (FRP) Decision							
Full Rate Production							4Q
First Deployment							

R-1 SHOPPING LIST - Item No. 94

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 9999 Congressional Adds	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9999 Congressional Adds		4.500						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

4017C	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		2.500		
RDT&E Articles Qty				

Automatic Radar Periscope Detection and Discrimination. Funding will be used to prepare for System Development and Demonstration (SDD) of ARPDD technology.

9773N	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		2.000	
RDT&E Articles Qty			

Acoustic Environmental Sensor System. Continue development and testing of A-plus sized sonobuoy prototype and in-buoy processing software, high dynamic range omni directional hydrophone, sound velocity, profiling, data collection ability and reverberation data collection capability.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604261N, ACOUSTIC SEARCH SENSORS**	PROJECT NUMBER AND NAME 9999 Congressional Adds	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:		0.000	
Current BES / President's Budget:		4.500	
Total Adjustments		4.500	
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		4.500	
Economic Assumtions			
Miscellaneous Adjustments			
Subtotal		4.500	

Schedule: Not Applicable

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Related RDT&E									

E. ACQUISITION STRATEGY: Congressional Plus Up

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604262N, V-22A		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	248.163	203.278	268.461	94.868	26.885	24.167	1.946	
H1425 V-22	248.163	203.278	268.461	94.868	26.885	24.167	1.946	

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

The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Join 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) for correction of deficiencies and includes Block A and Block B ugrades because it encompasses engineering and manufacturing development of new end-items prior a production approval decision. Block C suitability and effectiveness upgrades begin in FY 06 and are the first planned upgrades after the scheduled full rate production decision.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604262N, V-22A**	PROJECT NUMBER AND NAME H1425, V-22	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
H1425 V-22	248.163	203.278	268.461	94.868	26.885	24.167	1.946	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604262N, V-22A**	PROJECT NUMBER AND NAME H1425, V-22	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	87.917	94.191	112.025	
RDT&E Articles Qty				

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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	61.053	30.833	49.486	
RDT&E Articles Qty				

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 MV-22 Block upgrades. 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. R&D support and planning for the Block C suitability and effectivness upgrade which begin in FY 06. Block C is the first planned upgrades after the scheduled full rate production decision.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	99.193	78.254	106.950	
RDT&E Articles Qty				

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 MV-22 Block upgrades. 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. Block C suitability and effectivness upgrades begin in FY 06 and are the first planned upgrades after the scheduled full rate production decision.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604262N, V-22A**	PROJECT NUMBER AND NAME H1425, V-22	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	263.541	206.376	266.240
Current BES / President's Budget:	248.163	203.278	268.461
Total Adjustments	-15.378	-3.098	2.221
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-5.836	-2.158	
Congressional Increases			
Economic Assumptions		-0.940	2.985
Miscellaneous Adjustments	-9.542		-0.764
Subtotal	-15.378	-3.098	2.221

Schedule:
Not Applicable

Technical:
Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
164000 / V-22									
V-22 APN-1	889.488	1,047.392	1,498.767	1,750.732	2,198.148	2,223.242	2,409.686	12,348.985	24,366.440
V-22 APN-6 Spares	142.039	116.340	27.011	22.142	40.380	37.680	38.577	328.153	752.322
59000 / V-22									
V-22 APN-5	3.713	79.995	85.767	46.892	25.119	25.617	26.153	1,123.235	1,416.491
Related RDT&E:									
0401318F CV-22	14.175	39.955	26.601	56.972	58.315	58.317	72.268	0.000	326.603
1160421BB CV-22	57.256	29.954	14.234	31.660	28.551	37.635	69.028	0.000	268.318

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604262N, V-22A**	PROJECT NUMBER AND NAME H1425, V-22	

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 weather radar and cabin effectiveness suitability improvements. 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.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME								
RDT&E, N /	BA 5	0604262N, V-22A		H1425, V-22								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
CV-22 Develop Support Equip	VARIOUS	NAWCAD, LAKEHURST NJ	6.952	.084	1/1/2005	5.346	1/1/2006	4.384	1/1/2007		16.766	
CV-22 Hardware Dev. Airframe	SS-CPAF	BOEING COMPANY, RIDLEY PARK, PA	722.750	68.091	1/1/2005	72.388	1/1/2006	94.263	1/1/2007		957.492	957.492
CV-22 Hardware Dev. Propulsion	C-CPIF	ROLLS-ROYCE CORP, INDIANAPOLIS, IN	11.801	.224	1/1/2005	.513	1/1/2006	.608	1/1/2007		13.146	13.146
MV-22 Develop Support Equip	VARIOUS	NAWCAD, LAKEHURST NJ	41.824	3.211	1/1/2005	2.026	1/1/2006	2.550	1/1/2007		49.612	
MV-22 Hardware Dev. Airframe	SS-CPAF	BOEING COMPANY, RIDLEY PARK, PA	3,556.791	90.210	1/1/2005	66.169	1/1/2006	94.268	1/1/2007	98.807	3,906.245	3,906.245
MV-22 Hardware Dev. Propulsion	C-CPIF	ROLLS-ROYCE CORP, INDIANAPOLIS, IN	181.660	6.156	1/1/2005	2.764	1/1/2006	1.653	1/1/2007	3.512	195.745	195.745
MV-22 Training Development	VARIOUS	VARIOUS	16.185	.801	1/1/2005	4.874	1/1/2006	10.200	1/1/2007	9.512	41.572	
SUBTOTAL PROD. DEVELOPMENT			4,537.964	168.778		154.080		207.925		111.831	5,180.579	

Remarks:Total award fee pool available for MV and CV combined is $226,981,111.00. To date $203,328,616.31 has been awarded for a percentage of 89.5 percent. Award Fee included in MV-22 Primary Hardware Development Airframe line.

SUPPORT												
CV-22 Govt. Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	16.559	2.484	11/1/2004	3.739	11/1/2005	1.544	11/1/2006		24.325	
CV-22 Integrated Logistics Support	VARIOUS	VARIOUS	7.099	.949	11/1/2004	.792	11/1/2005	.460	11/1/2006		9.301	
CV-22 Technical Data	WX	NAV AIR TEC EN SV CMD, SAN DIEGO CA	5.770	.302	11/1/2004						6.072	
MV-22 Govt. Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	1,082.119	8.515	11/1/2004	1.902	11/1/2005	3.720	11/1/2006	3.720	1,099.977	
MV-22 Integrated Logistics Support	VARIOUS	VARIOUS	22.546	4.640	11/1/2004	1.650	11/1/2005	.716	11/1/2006		29.553	
MV-22 Technical Data	C-CPIF	BOEING COMPANY, RIDLEY PARK, PA	80.786	2.827	11/1/2004	9.322	11/1/2005	11.030	11/1/2006	2.527	106.491	106.491
SUBTOTAL SUPPORT			1,214.879	19.718		17.405		17.470		6.247	1,275.719	

Remarks:

TEST & EVALUATION												
CV-22 Dev Test & Eval	MIPR	EDWARDS AFB, CA	14.853	10.581	11/1/2004	8.310	11/1/2005	8.240	11/1/2006		41.985	
MV-22 Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	907.054	15.522	11/1/2004	11.451	11/1/2005	21.944	11/1/2006	19.605	975.576	
MV-22 Live Fire Test & Eval	WX	NAWCWD, CHINA LAKE CA	1.636	.000	11/1/2004						1.636	
MV-22 Oper Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	25.634	9.823	11/1/2004	3.535	11/1/2005	3.091	11/1/2006	4.153	46.235	
SUBTOTAL TEST & EVALUATION			949.178	35.926		23.296		33.275		23.758	1,065.432	

Remarks:

MANAGEMENT												
CV-22 Engineering Technical Support	VARIOUS	VARIOUS	.689	4.378	11/1/2004	2.619	11/1/2005	2.032	11/1/2006		9.717	
CV-22 Management Support Services	VARIOUS	VARIOUS	11.716	.595	11/1/2004	.224	11/1/2005	.234	11/1/2006		12.768	
CV-22 Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	9.481	.007	11/1/2004	.160	11/1/2005	.161	11/1/2006		9.809	
CV-22 Travel	WX	NAWCAD, PATUXENT RIVER MD	3.954	.221	11/1/2004	.100	11/1/2005	.100	11/1/2006		4.375	
MV-22 Engineering Technical Support	VARIOUS	VARIOUS	1,018.603	6.099	11/1/2004	1.167	11/1/2005	1.658	11/1/2006	.103	1,027.630	
MV-22 Management Support Services	VARIOUS	VARIOUS	132.175	8.532	11/1/2004	2.338	11/1/2005	3.616	11/1/2006	3.342	150.003	
MV-22 Studies and Analyses	VARIOUS	VARIOUS	1.126			.194	11/1/2005	.204	11/1/2006	.214	1.738	
MV-22 Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	43.272	2.777	11/1/2004	1.219	11/1/2005	1.383	11/1/2006	1.764	50.415	
MV-22 Travel	WX	NAWCAD, PATUXENT RIVER MD	10.296	1.132	11/1/2004	.476	11/1/2005	.405	11/1/2006	.607	12.916	
SUBTOTAL MANAGEMENT			1,231.312	23.740		8.497		9.792		6.029	1,279.371	

Remarks:

Total Cost			7,933.333	248.163		203.278		268.461		147.866	8,801.101	

Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604262N, V-22A

PROJECT NUMBER AND NAME: H1425, V-22

Fiscal Year	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
Program Milestones									MS-III					MV-22 IOC								CV-22 IOC 2Q FY09											
Engineering Milestones	Blk B - PDR		Blk B - CDR										Blk C - PDR		Blk C - CDR																	
Test & Evaluation Milestones	MV-22 OT-IIF		MV-22 OTRR			OPEVAL Phase II				CV-22 3-4Q	OUE			CV-22 Flight Test 4Q/02 - 4Q/07				CV-22 IOT&E 1Q															
Deliveries																																

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604262N, V-22A				PROJECT NUMBER AND NAME H1425, V-22			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Block-B Preliminary Design Review (PDR)	1Q							
Block-B Critical Design Review (CDR)	3Q							
MV-22 Operational Testing - IIF	3Q-4Q	1Q-4Q						
MV-22 Operational Test Readiness Review (OTRR)	3Q							
CV-22 Flight Test	2Q	1Q-4Q	1Q-4Q	1Q-4Q				
MV-22 Operational Evaluation (OPEVAL) Phase II		2Q - 3Q						
MV-22 Milestone III			1Q					
MV-22 Initial Operational Capability (IOC)				2Q				
Block-C Preliminary Design Review (PDR)				3Q				
Block-C Critical Design Review (CDR)				4Q				
CV-22 Operational Utility Evaluation			3Q-4Q					
CV-22 Initial Operational Test & Evaluation (IOT&E)					1Q			
CV-22 Initial Operation Capability (IOC)						2Q		

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604264N, AIRCREW SYSTEMS DEVELOPMENT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	20.093	13.488	12.434	6.365	1.771	1.812	1.562	
0606 AIRCREW SYSTEMS DEVELOPMENT	13.455	10.738	12.434	6.365	1.771	1.812	1.562	
2877 JOINT HELMET MOUNTED QUE SYS	4.993							
9061 INTENSIFIER TUBE ADVANCED DEV	1.645							
9999 NIGHT VISION TUBE TECHNOLOGY DEV		2.750						

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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
0606 AIRCREW SYSTEMS DEVELOPMENT	13.455	10.738	12.434	6.365	1.771	1.812	1.562	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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), Advanced Crash Sensor & Restraint (ACSR), Crashworthy Troop Seats (CWTS), Escape System Injury Reduction Program (ESIRP) includes Stability Improvement Program (SIP), Escape and Crashworthy Aircrew Endurance Modifications (ECAE), Mobile Aircrew Restraint System (MARS)/Tri-Service Safety Harness (TSSH).

LIFE SUPPORT/THREAT PROTECTION: Extreme Cold Weather Improvement Program/State of the Art (ECWIP/SOA), Personal Protective Apparel (PPA) formerly AMELIA, State of the Art Survival Items (SOASI), Aircrew Accommodation Expansion Program (AAEP), Aviation Oxygen Systems (AOS), Aircrew Exposure Protection Systems (AEPS) formerly Aircrew Cooling/Advanced Integrated Life Support Systems (AILSS), Common Smoke Mask (CSM), Liquid Oxygen to On-Board Oxygen Generating System (LTO), Joint Protective Air Crew Ensemble (JPACE), Combat Survivor Evader Locater (CSEL).

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, JHMCS Night Attack, Agile Frequency Laser Eye Protection, and Laser Eye Protection Improvement Program (LEPIP), Joint Aircrew Laser Eye Protection Visor (JALEPV).

*FY 2005 includes Congressional Add for Lightweight Armored Troop Seat (LWATS) for H-60.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

SURVIVAL ELECTRONICS/LIFE SUPPORT	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.746	8.406	9.320	
RDT&E Articles Qty				

ECWIP/SOASI: Continue evaluation and authorizations of state of the art survival items. Published annual message with 22 authorized items. SOA: Continue evaluations and authorizations of state of the art survival items. Published annual message with 22 authorized items. PPA: Completed fleet assessment, finalized technical data package, began procurement and fielding of the Multi-Climate Protection System. AAEP: Continue evaluating aircraft seat positions in aircraft so equipped for accommodation issues. Updated technical reports on accommodation levels in aircraft. Continue developing detailed cockpit CAD pictures. AEPS: Conduct DT testing, investigating technology improvement. Conducted tri-service users brief on ALSS. Submitted Foreign Comparative Testing (FCT) proposal for cooling system. Evaluated Joint ICD for the Integrated Aircrew Ensemble. LOX TO OBOGS (LTO): Completed oxygen system Analysis of Alternatives to determine LOX-Free solution for Advanced Hawkeye(AHE). Awarded GGU-XXX development contract.

ESCAPE & CRASHWORTHINESS	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	5.926	1.776	2.524	
RDT&E Articles Qty				

NACES P3I: Continue retrofit of phase I NACES P3I technologies will be completed in T-45 aircraft 4th quarter FY 05. Conduct studies for integration efforts. JCABS: Continue to conduct technical reviews with Army to develop and integrate airbag technology to Navy H-60 aircraft. ACSR: Performing modeling and simulation to evaluate optimum design for advanced restraint integrated to various rotary wing applications. Conducting trade study to establish pricing for candidate modifications. CWTS: Engineering Change Proposal was required and approved to address restraint system modifications required for two seat installations in the UH-1Y aircraft. Completed detailed design, and proof of concept testing. Conduct studies for integration efforts. Revised design will be delivered as part of new production deliveries to aircraft prime contractor. ESIRP: Completed system developmental testing (DT) of aero stabilization system. Experienced test anomaly during system qualification testing that required a revised design approach to control seat stability. Completed detailed design work and DTI testing of revised design approach (Fast drogue). CDR II and follow on system qualification testing is scheduled for 4th quarter FY 05. ECAE: Commenced limited testing (DT) of endurance modifications for ejection and crashworthy applications. MARS: Completed developmental testing (DT) in SH-60B and SH-60F legacy aircraft. Engineering Change Proposal being reviewed by NAVAIR Configuration Control Board for approval. Retrofit of MARS in SH-60B and SH-60F will commence 4th quarter FY 05. Due to developmental test anomaly in HH-60H, MARS installation will be delayed until completion of enhanced MARS retractor is qualified for in MH-60S. Completed prototype of new aircrew mounted interface system. Developmental testesting has started to qualify the airsave interface. The new aircrew mounted interface system will be fielded concurrently with MARS installation in MH-60S. Common MARS: Commenced work on replacing existing gunners belt with more capable harness. Lightweight Armored Troop Seat (LWATS) H-60: Small Business Innovative Research (SBIR) effort awarded three phase one contracts for the concept development of a light weight troop seat for USN applications that include H-60 and H-46 aircraft. Phase two will be awarded in 3rd quarter FY 05 for the design and testing of a light weight troop seat design. Ejection Seat Endurance: Developing source selection plan and endurance system specification for legacy ejection seat equipped aircraft.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT

HELMETS, VISION & DISPLAY	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.783	0.556	0.590	
RDT&E Articles Qty				

NVS: Continuing Fleet support of fielded product. JHMCS: Completed OPEVAL. JHMCS Night Attack: Completed CDR. First DT asset deliverey due September 2005. JALEPV: Continue Fleet assessment. MS III decision scheduled for September 2005. PCA Complete. IDNAWH: Feasibility study completed on integration of capability into JHMCS Night Attack. Agile Frequency Laser: Continue development, conduct PDR.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:	14.617	10.902	11.171
Current BES / President's Budget:	13.455	10.738	12.434
Total Adjustments	-1.162	-0.164	1.263
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.049	-0.114	
Congressional Increases			
Economic Assumptions		-0.050	0.219
Miscellaneous Adjustments	-1.113		1.044
Subtotal	-1.162	-0.164	1.263

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0604264N, AIRCREW SYSTEMS DEVELOPMENT**	0606, AIRCREW SYSTEMS DEVELOPMENT

Schedule:	FROM	TO	REASON
1. Acquisition Milestones Changes:			
a. LOX to OBOGS - CDR	1Q 06	2Q 07	Rescoped effort from legacy aircraft to Advanced Hawkeye.
b. PPA - CDR	2Q 05	N/A	Program discontinued.
c. JALEPV - MS III	2Q 05	4Q 05	Program rebaselining is required.
d. LWATS - SBIR PHASE II	3Q 05	4Q 05	GAO received protest from perspective candidate delaying SBIR.
e. JHMCS - P3I NIGHT ATTACK - CDR	2Q 05	3Q 05	Slip due to delay in meeting CDR entry criteria.
f. COMMON MARS - PDR/CDR	2Q 06/3Q 07	N/A	Program has been rescoped - product redesign required.
2. Test and Evaluation Changes:			
a. LOX to OBOGS - DT/DT ASSIST	3Q 05-4Q 08	4Q 05-4Q 08	Rescoped effort from legacy aircraft to Advanced Hawkeye.
b. CWTS - DT/OT	1Q 04-1Q 05	1Q 05-4Q 08	DT/OT extended to develop seats for UH-1Y helicopter.
c. MARS H-60 - DT/OT	1Q 04-1Q 05	1Q 04-3Q 05	Program has been rescoped - product redesign required.
d. NACES II-P3I - DT/OT	1Q 05-4Q 05	4Q 05-4Q 08	Incremental funding delay.
e. JHMCS - P3I NIGHT ATTACK - DT/OT	3Q 04-1Q 06	4Q 05-3Q 06	Redesign required.
f. ESIRP - DT/OT	1Q 04-2Q 05	1Q 04-1Q 06	Technical problems encountered with drogue sub system.
g. COMMON MARS - DT/OT	2Q 06-1Q 08	4Q 05-4Q 08	Program has been rescoped - product redesign required.
3. Production Milestones Changes:			
a. MARS H-60 - LRIP	2Q 05	4Q 05	Program has been rescoped - product redesign required.
b. JALEPV - FRP	1Q 06	4Q 05	Program rebaselining is required.
c. CWTS - LRIP	2Q 05	1Q 05	Accelerated LRIP schedule.
d. COMMON MARS - LRIP	4Q 07	3Q 06	Program has been rescoped.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Aviation Life Support - OPN 424400	31.895	34.390	18.624						
Aviation Life Support Mods - APN 057500	0.500	0.319	14.315						

E. ACQUISITION STRATEGY:

Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts. Majority of programs non-Acat programs with no specific acquisition.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604264N, AIRCREW SYSTEMS DEVELOPMENT				PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Eng SOA	VARIOUS	VARIOUS	0.363	0.181	VARIOUS	0.350	VARIOUS	0.307	VARIOUS	1.299	2.500	
Systems Eng AAEP	WX	NAWCAD, PATUXENT RIVER MD	0.175	0.100	12/1/2005						0.275	
Systems Eng AEPS	VARIOUS	VARIOUS	0.240	0.586	VARIOUS						0.826	
Systems Eng CWTS	VARIOUS	VARIOUS	0.395	0.439	VARIOUS	0.250	VARIOUS	0.165	VARIOUS	0.743	1.992	
Systems Eng EJECTION SEAT ENDUR	WX	NAWCAD, PATUXENT RIVER MD						1.700	12/1/2007	0.585	2.285	
Systems Eng ESIRP	VARIOUS	VARIOUS	3.100	1.482	VARIOUS						4.582	
Systems Eng IDNAWH	WX	NAWCAD, PATUXENT RIVER MD	0.211	0.228	12/1/2005						0.439	
Systems Eng JALEPV	VARIOUS	VARIOUS	0.122	0.025	VARIOUS						0.147	
Systems Eng JHMCS NIGHT ATTACK	VARIOUS	VARIOUS	0.794	1.009	VARIOUS	0.300	VARIOUS	0.300	VARIOUS	0.646	3.050	
Systems Eng LTO	WX	NAWCAD, PATUXENT RIVER MD	0.435	0.065	VARIOUS	1.207	VARIOUS	2.181	VARIOUS	0.750	4.638	
Systems Eng LTO	SS/CPAF	NORTHRUP GRUMMAN SYS, NY		3.244	7/29/2005	7.275	12/31/2006	6.542	12/31/2007	3.431	20.492	20.492
Systems Eng LWATS	VARIOUS	VARIOUS		1.000	VARIOUS						1.000	
Systems Eng MARS	WX	NAWCAD, PATUXENT RIVER MD	1.194	1.339	12/1/2005	0.252	12/1/2006				2.785	
Systems Eng MARS	WX	NADEP, CHERRY POINT NC		0.031	12/1/2005						0.031	
Systems Eng NACES	WX	NAWCAD, PATUXENT RIVER MD	0.138			0.250	12/1/2006				0.388	
Systems Eng NVS	WX	NAWCAD, PATUXENT RIVER MD		0.329	12/1/2005						0.329	
Systems Eng SOASI	WX	NAWCAD, PATUXENT RIVER MD	0.177	0.266	12/1/2005						0.443	
SUBTOTAL PRODUCT DEVELOPMEN			7.343	10.324		9.884		11.195		7.455	46.202	
Remarks:												
SUPPORT												
Integrated Logistics Sup (CWTS)	VARIOUS	VARIOUS		0.168	VARIOUS						0.168	
Integrated Logistics Sup ESIRP	VARIOUS	VARIOUS		0.129	VARIOUS						0.129	
Integrated Logistics Sup IDNAWH	WX	NSWC DET, CRANE IN		0.033	12/1/2005						0.033	
Integrated Logistics Sup LTO	WX	NAWCAD, PATUXENT RIVER MD		0.168	12/1/2005						0.168	
Integrated Logistics Sup Nt Attack	WX	NSWC DET, CRANE IN		0.051	12/1/2005						0.051	
SUBTOTAL SUPPORT				0.548							0.548	
Remarks:												
TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												
Remarks:												

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604264N, AIRCREW SYSTEMS DEVELOPMENT				PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT												
Mgt & Prof Suppt Srvc (NON-FFRDC)	VARIOUS	VARIOUS				0.057	VARIOUS	0.098	VARIOUS	0.432	0.587	
Program Mgmt Sup CWTS	VARIOUS	VARIOUS		0.030	VARIOUS					0.108	0.138	
Program Mgmt Sup JHMCS	WX	VARIOUS	1.671	1.109	12/1/2005						2.780	
Program Mgmt Sup LTO	WX	NAWCAD, PATUXENT RIVER MD		0.136	12/1/2005						0.136	
Program Mgmt Sup NACES	WX	VARIOUS	0.845	0.969	12/1/2005						1.814	
Program Mgmt Sup Nt Attack	WX	NAWCAD, PATUXENT RIVER MD				0.797	12/1/2006			2.089	2.886	
TRAVEL CWTS	TO	NAVAIRHQ, PATUXENT RIVER, MD						1.141	12/1/2007	1.149	2.290	
Travel NACES	TO	NAVAIRHQ, PATUXENT RIVER, MD	0.300	0.338	12/1/2005						0.638	
SUBTOTAL MANAGEMENT			2.816	2.582		0.854		1.239		3.778	11.269	
Remarks:												
Total Cost			10.159	13.455		10.738		12.434		11.233	58.019	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604264N, AIRCREW SYSTEMS DEVELOPMENT	0606, AIRCREW SYSTEMS DEVELOPMENT

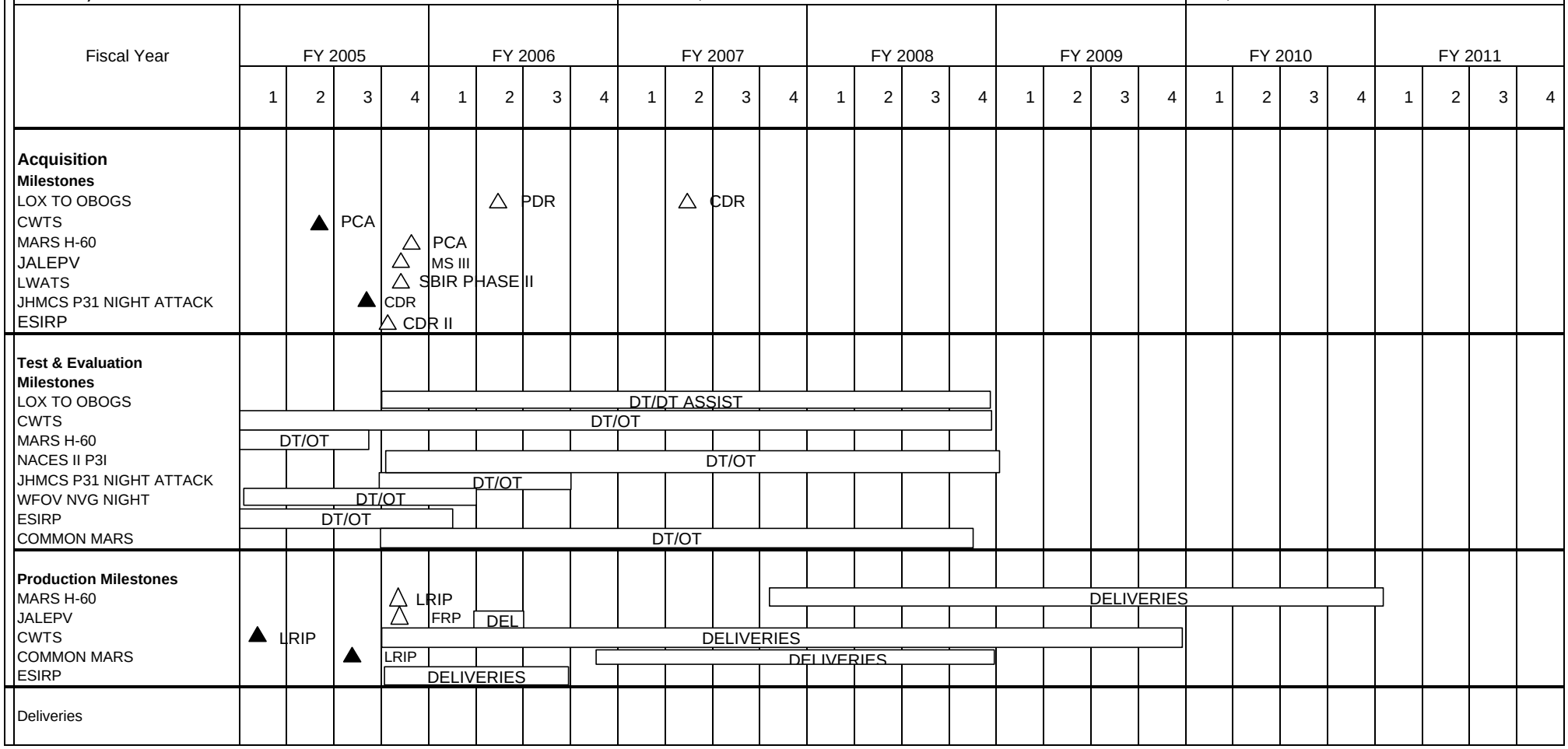


Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604264N, AIRCREW SYSTEMS DEVELOPMENT				PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
LOX TO OBOGS - PDR/CDR		2Q	2Q					
LOX TO OBOGS - DT, DT ASSIST	4Q	1Q-4Q	1Q-4Q	1Q-4Q				
CWTS - UH-1Y CDR 11/PCA	2Q							
CWTS - DT/OT	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
CWTS - LRIP	1Q							
CWTS - DELIVERIES	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
MARS H60 - PCA	4Q							
MARS H-60 - DT/OT	1Q-3Q							
MARS DELIVERIES			4Q	1Q-4Q	1Q-4Q	1Q-4Q		
JALEPV - MSIII, FRP	4Q							
JALEPV - DELIVERIES		2Q						
ESIRP - CDR II	4Q							
ESIRP - DT/OT	1Q-4Q	1Q						
ESIRP - DELIVERIES	4Q	1Q-3Q						
JHMCS P3I NIGHT ATTACK - CDR	3Q							
JHMCS P3I NIGHT ATTACK - DT/OT	4Q	1Q-3Q						
COMMON MARS - DT/OT	4Q	1Q-4Q	1Q-4Q	1Q-4Q				
COMMON MARS - LRIP (MH-60S)	3Q							
COMMON MARS - DELIVERIES		4Q	1Q-4Q	1Q-4Q				
LWATS - SBIR PHASE II	4Q							
WFOV NVG NIGHT ATTACK - DT/OT	1Q-4Q	1Q						
NACES P3I - DT/OT	4Q	1Q-4Q	1Q-4Q	1Q-4Q				

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 2877, JOINT HELMET MOUNTED CUEING SYSTEM	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2877 JOINT HELMET MOUNTED CUEING SYSTEM	4.993							
RDT&E Articles Qty	8							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
JOINT HELMET MOUNTED CUEING SYSTEM currently has the capability to cue and verify cueing of high off-axis sensors and weapons in the air-to-ground and air-to-air arena (TFLIR and AIM-9X). To take advantage and enhance the war fighting capability at night, the program is integrating night vision capabilities into the JHMCS. This will increase the pilot's situational awareness through all phases of flight. Many friendly and threat aircraft already employ helmet mounted systems. FY05 articles include eight developmental test/operational test flight worthy devices.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 2877, JOINT HELMET MOUNTED CUEING SYSTEM	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.993			
RDT&E Articles Qty	8			

Initiate development, procure DT assets. Conduct DT, Integrated T&E, and OTRR. Initiate OT.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /**	**BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 2877, JOINT HELMET MOUNTED CUEING SYSTEM

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	5.048		
Current BES / President's Budget:	4.993		
Total Adjustments	-0.055		

Summary of Adjustments

Congressional Reductions	
Congressional Rescissions	
Congressional Undistributed Reductions	-0.056
Congressional Increases	0.001
Economic Assumptions	
Miscellaneous Adjustments	
Subtotal	-0.055

Schedule:
Not Applicable.

Technical:
Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 2877, JOINT HELMET MOUNTED CUEING SYSTEM	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
									0.000

Not Applicable.

E. ACQUISITION STRATEGY:
Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9061, INTENSIFIER TUBE ADVANCED DEVELOPMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9061, INTENSIFIER TUBE ADVANCED DEVELOPMENT	1.645							
RDT&E Articles Qty	3							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
Congressional Add: The funding is needed to develop and integrate smaller and lighter night vision intensifier tubes (16mm) for narrow and wide field of view night vision systems. The advanced intensifier tubes will be the foundation for night vision devices that can be integrated with the Joint Helmet Mounted Cueing System (JHMCS) helmet mounted display system to provide a night vision cueing capability. This capability is necessary for rapid targeting of air-to-air missiles and air-to-ground weapons at night. Funding for the development of enhanced night vision imaging systems and the incorporation of the capability in current and future helmet mounted cueing systems will extend current daytime only technology for night use.

RDT&E Articles are state of the art 16mm image intensifier tubes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9061, INTENSIFIER TUBE ADVANCED DEVELOPMENT

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.645			
RDT&E Articles Qty	3			

Night Vision Tube Development

Refine 16 mm Intensifier Tube Technology. Continue development of automated intensifier measurement system. Deliver prototype state-of-the art 16 mm image intensifier tubes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9061, INTENSIFIER TUBE ADVANCED DEVELOPMENT

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.682		
Current BES / President's Budget:	1.645		
Total Adjustments	-0.037		

Summary of Adjustments

Congressional Reductions		
Congressional Rescissions		
Congressional Undistributed Reductions	-0.037	
Congressional Increases		
Economic Assumptions		
Miscellaneous Adjustments		
Subtotal	-0.037	

Schedule:
Not Applicable

Technical:
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9999, Congressional Adds	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9999, Congressional Adds		2.750						
RDT&E Articles Qty		16						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
Congressional Add: The funding is needed to develop and integrate smaller and lighter night vision intensifier tubes (16mm) for narrow and wide field of view night vision systems. The advanced intensifier tubes will be the foundation for night vision devices that can be integrated with the Joint Helmet Mounted Cueing System (JHMCS) helmet mounted display system to provide a night vision cueing capability. This capability is necessary for rapid targeting of air-to-air missiles and air-to-ground weapons at night. Funding for the development of enhanced night vision imaging systems and the incorporation of the capability in current and future helmet mounted cueing systems will extend current daytime only technology for night use.

RDT&E Articles are state of the art 16mm image intensifier tubes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9999, Congressional Adds	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

9061C	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		2.750		
RDT&E Articles Qty		16		

Night Vision Tube Technology Development

Advance the development of an integrated night vision camera and intensifier tubes. Refine 16 mm Intensifier Tube Technology. Continue development of automated intensifier measurement system. Deliver prototype state-of-the art 16 mm image intensifier tubes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604264N, AIRCREW SYSTEMS DEVELOPMENT**	PROJECT NUMBER AND NAME 9999, Congressional Adds

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:			
Current BES / President's Budget:		2.750	
Total Adjustments		2.750	
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		2.750	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal		2.750	

Schedule:
Not Applicable

Technical:
This Congressional Add is a continuation of Project Unit 9061. The Project Unit was changed to 9061C and the title was changed to Night Vision Tube Technology Development.

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604269N EA-18G			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**346.526**	**393.860**	**372.363**	**268.095**	**84.156**	**86.528**	**82.453**
3063 EA-18G DEVELOPMENT		**346.526**	**393.860**	**372.363**	**268.095**	**84.156**	**86.528**	**82.453**

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 EA-6B (ALQ-218, 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 High-speed Anti-Radiation Missile (HARM) to fulfill operational requirements. 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. 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 being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604269N EA-18G				PROJECT NUMBER AND NAME 3063 EA-18G DEVELOPMENT			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**346.526**	**393.860**	**372.363**	**268.095**	**84.156**	**86.528**	**82.453**
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 EA-6B (ALQ-218, 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 High-speed Anti-Radiation Missile (HARM) to fulfill operational requirements. 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. 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 being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604269N EA-18G	3063 EA-18G DEVELOPMENT

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		297.359	318.587	268.582
RDT&E Articles Quantity				

Continue Air Vehicle Design and Integration of Avionics into the EA-18G.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		43.219	42.383	45.734
RDT&E Articles Quantity				

Continue Software Development of the EA-18G.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		5.948	32.890	58.047
RDT&E Articles Quantity				

Start developmental testing/operational testing and planning for the EA-18G.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604269N EA-18G	3063 EA-18G DEVELOPMENT

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	353.679	409.097	372.023
Current BES/President's Budget	346.526	393.860	372.363
Total Adjustments	-7.153	-15.237	0.340
Summary of Adjustments			
Congressional Reductions		-9.097	
Congressional Rescissions			
Congressional Undistributed Reductions	-7.822	-4.277	
Congressional Increases			
Economic Assumptions		-1.863	5.807
Miscellaneous Adjustments	0.669		-5.467
Subtotal	-7.153	-15.237	0.340

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604269N EA-18G	3063 EA-18G DEVELOPMENT	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P-1 LINE ITEM 2 & 3: EA-18G APN-1 (EA-18G Weapons System Cost)	8.205	332.477	905.174	1322.433	1632.967	1471.975	847.567	0	6520.798

Related RDT&E
(U) 0604270N E0556 EW Counter Response
(U) 0604270N E3063 AEA Follow On

E. ACQUISITION STRATEGY:

Development of EA-18G is based on the findings of an OSD sponsored Analysis of Alternatives and a Navy sponsored Refinement of Alternatives study. A sole source contract has been awarded to Boeing (the platform manufacturer) for system design and development. Boeing is under contract with Northrop Grumman to incorporate Electronic Warfare/Electronic Attack systems into the Super Hornet. The contract has been structured to minimize the Navy's up-front investment and cancellation penalty while reducing costs for the total program life cycle. The Cost-Plus Award Fee (CPAF) contract arrangement provides incentives based on cost, schedule, and technical performance. Starting in FY05 two F/A-18F's will be modified with RDT&E to incorporate the Electronic Warfare/Electronic Attack systems for further development, integration, and testing.

R-1 SHOPPING LIST - Item No. 97

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604269N EA-18G				PROJECT NUMBER AND NAME 3063 EA-18G DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hdw Development(Aircraft)	SS/CPAF	MDA- ST LOUIS	159.155	230.814	10/04	253.677	10/05	166.172	10/06	209.840	1,019.658	1,019.658
SDD Award Fee	SS/CPAF	MDA- ST LOUIS		13.100	10/04	12.200	12/05	19.868	12/06	42.718	87.886	87.886
Primary Hdw Development(Aircraft)	Various	Various	0.320	0.922	12/04	0.600	12/05	0.675	12/06	0.300	2.817	
Primary Hdw Development(ALQ-99)	WX	NSWC CRANE	3.028	8.403	11/04	6.595	11/05	8.526	11/06	8.095	34.647	
Systems Engineering	WX	NAWCWD-CHINA LAKE	6.822	9.157	10/04	10.329	10/05	29.873	10/06	39.791	95.972	
Systems Engineering	WX	NSWC CRANE	1.242	6.848	11/04	0.917	11/05	3.500	11/06	5.156	17.663	
Systems Engineering	WX	NAWCWD-POINT MUGU	4.878	7.640	11/04	10.378	11/05	11.350	11/06	15.535	49.781	
Systems Engineering	WX	NAWCAD- PAX RIVER	2.081	7.500	11/04	9.200	11/05	8.400	11/06	20.304	47.485	
Systems Engineering	WX	NAWCAD- LAKEHURST	2.198	0.600	12/04	0.200	11/05	2.921	11/06	3.780	9.699	
GFE	Various	Various	1.308	0.600	Various			0.200	11/06	0.150	2.258	
											0.000	
Subtotal Product Development			181.032	285.584		304.096		251.485		345.669	1,367.866	
Remarks:												
											0.000	
Software Development	SS/CPFF	MDA-ST LOUIS	25.569	43.219	10/04	42.383	10/05	45.734	10/06	42.951	199.856	199.856
Integrated Logistics Support	WX	Various	0.498	0.860	11/04	0.908	11/05	0.902	11/06	2.686	5.854	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			26.067	44.079		43.291		46.636		45.637	205.710	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604269N EA-18G				PROJECT NUMBER AND NAME 3063 EA-18G DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD-PAX RIVER	2.034	4.708	10/04	32.350	11/05	48.186	11/06	57.972	145.250	
Developmental Test & Evaluation	WX	NAWCWD-CHINA LAKE						9.046	11/06	11.216	20.262	
Developmental Test & Evaluation	MIPR	AEDC, TN	0.750	1.000	11/04						1.750	
Developmental Test & Evaluation	MIPR	NASA AMES	3.016								3.016	
Operational Test & Evaluation	WX	OPTEVFOR , NORFOLK VA	0.598	0.240	12/04	0.540	11/05	0.815	11/06	11.987	14.180	
											0.000	
											0.000	
Subtotal T&E			6.398	5.948		32.890		58.047		81.175	184.458	
Remarks:												
Contractor Engineering Support	Various	Various	2.673	1.575	12/04	2.095	11/05	2.148	11/06	9.042	17.533	
Program Management Support	WX	NAWCAD-PAX RIVER	3.238	3.000	11/04	4.870	11/05	5.247	11/06	13.789	30.144	
Government Engineering Support	WX	NAWCAD-PAX RIVER	1.627	6.000	12/04	6.518	11/05	8.300	11/06	23.733	46.178	
Travel	WX	NAVAIR, PAX RIVER MD	0.458	0.340	VAR	0.100	VAR	0.500	VAR	1.355	2.753	
											0.000	
											0.000	
Subtotal Management			7.996	10.915		13.583		16.195		47.919	96.608	
Remarks:												
Total Cost			221.493	346.526		393.860		372.363		520.400	1,854.642	
Remarks:												

R-1 SHOPPING LIST - Item No. 97

CLASSIFICATION:

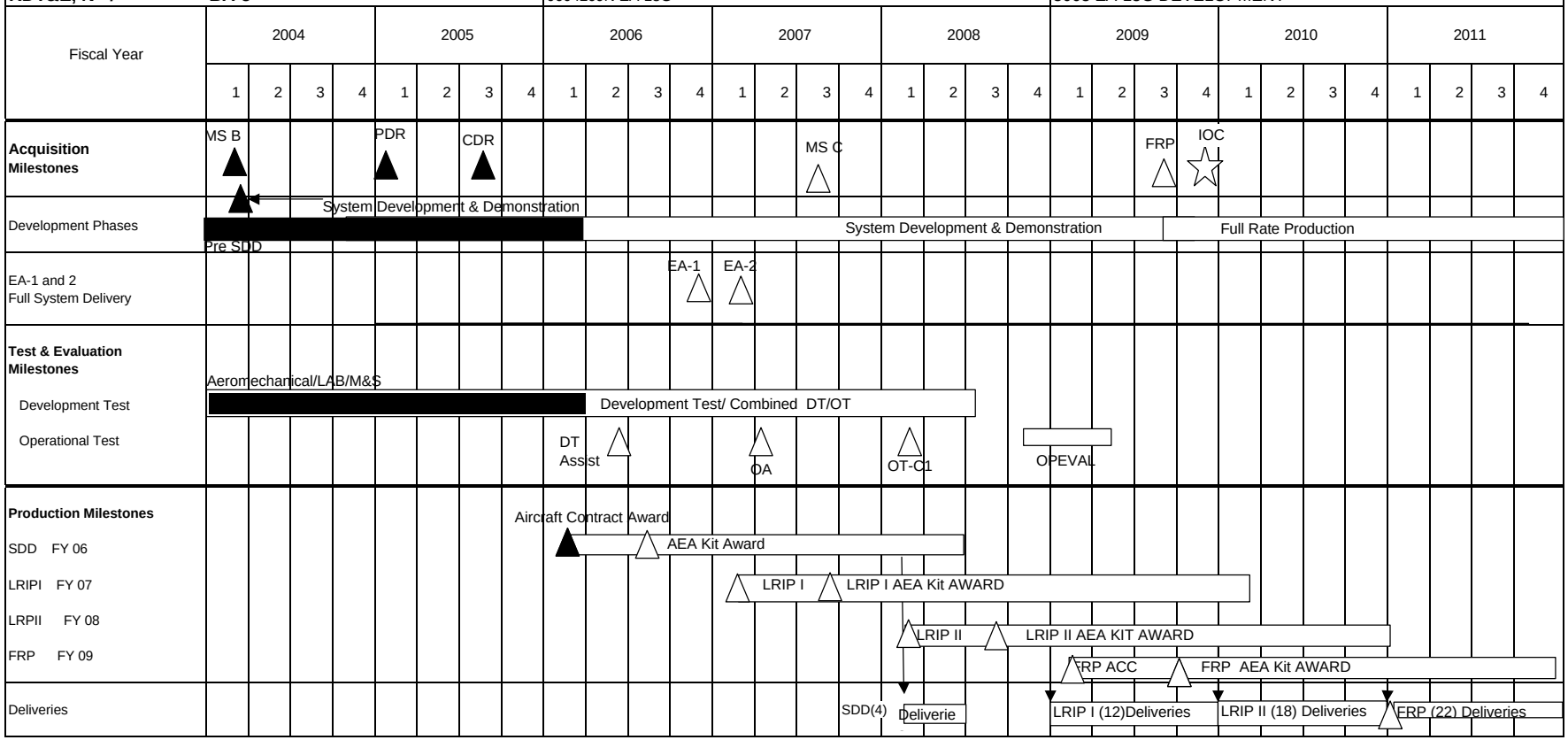
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604269N EA-18G

PROJECT NUMBER AND NAME: 3063 EA-18G DEVELOPMENT



R-1 SHOPPING LIST - Item No.97

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604269N EA-18G				PROJECT NUMBER AND NAME 3063 EA-18G DEVELOPMENT			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Pre System Development & Demonstration Phase (Pre-SDD)	1Q							
System Development & Demonstration Phase(SDD)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
Developmental Testing	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
Milestone B (MSB)	1Q							
Preliminary Design Review (PDR)		1Q						
Critical Design Review (CDR)		3Q						
SDD Aircraft & Contract Award	1Q		1Q					
Development Test(DT) Assist			2Q					
SDD Production (AEA) Contract Award			3Q					
EA-1 Delivery			4Q					
EA-2 Delivery				1Q				
LRIP I Aircraft Contract Award (Funded in APN-1)				1Q				
Operational Assessment (OA)				2Q				
Milestone C (MSC)				3Q				
Start Low-Rate Initial Production II (LRIPII)					1Q			
Operational Testing (OT-C1)					1Q			
SDD Production Delivery (funded in APN-1)					1Q			
Operational Evaluation (OPEVAL)					4Q	1Q-2Q		
FRP Aircraft Contract Award						3Q		
Low-Rate Initial Production I Delivery						1Q-4Q		
Full Rate Production (FRP) Decision						3Q		
FRP AEA Contract Award						4Q		
IOC						4Q		
Full Rate Production (FRP) Delivery								1Q

R-1 SHOPPING LIST - Item No. 97

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604270N, EW DEVELOPMENT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	48.517	43.276	39.842	25.855	26.854	27.622	28.452	
0556 EW COUNTER RESPONSE	32.771	32.861	33.143	24.427	25.485	26.217	27.015	
1742 EW TECHNICAL DEVELOPMENT	.867	.934	.652	.675	.694	.714	.733	
2175 TACTICAL AIR ELECTRONIC WARFA	12.928	7.516	5.364					
2260 SPECIFIC EMMITTER ID	.697	.715	.683	.753	.675	.691	.704	
9999 CONGRESSIONAL ADD	1.254	1.250						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) 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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
0556 EW COUNTER RESPONSE	32.771	32.861	33.143	24.427	25.485	26.217	27.015	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) This Program Element (PE) develops upgrades to cope with the increasingly complex and dense threat environment. The required improvements in EA-6B Electronic Attack (EA) will be achieved by applying state-of-the-art signal exploitation/processing/display techniques, improved tactics and jamming capabilities. Tactical communications connectivity improvements include Joint Tactical Terminal and Tactical Receive Equipment (TRE) Related Applications (TRAP), Tactical Digital Information Exchange System-B (TADIXS-B), Tactical Digital Information Link-J (TADIL-J), Tactical Information Broadcast Services (TIBS), Tactical Reconnaissance Information Exchange System (TRIXS), USN/USAF Advisory Support Network (ASN) Intelnet, Demand Assigned Multiple Access (DAMA)-capabilities within ForceNet. The EA-6B weapon system is ultimately designed for precision targeting, jamming and destruction of enemy land based, ship borne 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, the EA-6B will support both carrier based tactical aircraft strike group operations, and joint forces, in dense radar controlled environments. This PE is directly supporting emerging asymmetric threats currently being addressed by the United States Navy (USN) and the Department of Defense (DOD). These efforts include the continued development of Force Protection/Glodal War on Terror (GWOT) (classified discussion upon request), Navigation (NAV) and Information Operations (I/O) applications, increased night vision and tracking capabilities, and enhanced communications jamming. The efforts under this program element 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 and EA systems for the EA-6B electronic attack aircraft including improvements within precision Direction of Arrival (DOA), geo-location, Specific Emitter Identification (SEI), auto-ESM, and selective reactive jamming.

The test articles begun in FY 1999 are; two EA-6B aircraft modified to support the Improved Capability (ICAP) III program and Low Band Transmitter (LBT) Engineering Development Models (EDMs). The two EA-6B ICAP III aircraft will be used as test articles during government test and evaluation of MIDS/Link-16 and other EW improvements. The LBT EDMs are broken out as LBT Antenna Set EDMs and Amplifier Set EDMs. 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) in FY 2005 and Full Rate Production (FRP) approval (Milestone III) anticipated in FY 2007. All efforts and system upgrades include the conversion of and transition from the Tactical EA-6B Mission System (TEAMS) mission planner software to the Joint Mission Planning System (JMPS), including development of EA-6B Unique Planning Modules.

A requirement exists to allow the EA-6B to participate in various coordinated targeting scenarios such as Network Centric Warfare, Force Net, improved Suppression of Enemy Air Defenses/Destruction of Enem Air Defenses, (SEAD/DEAD), and other strategic-and theatre-based DOD networks and strategies. Likewise, the ICAP III system shall be matured to enable the fusion and correlation of both organic and non-organic threat information to better present sensor and targeting information to the theatre commander via coordinated efforts with other airborne, ground and ship-based operations. A method of implementing this requirement is to include the EA-6B on the Link-16 EW Network. Incorporation of the full EW Link-16 message set into the EA-6B and participation of the ICAP III within the Network Centric Warfare arena will greatly improve the Strike Group Commander's situational awareness.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.250			
RDT&E Articles Qty				

FIBER OPTIC

(U) Complete the development of the Fiber Optic Wave Division Multiplexing Flight Testing Optical Communications using Open Standards (FOCUS) 2 for the developmental testing, and the EA-6B lab at Point Mugu and Crane, for the Highly Integrated Photonics (HIP).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	9.004	10.254	11.608	
RDT&E Articles Qty				

JATO

(U) Continue software development and test support required to address and counter new threat development for both the ICAP II and ICAP III EA configurations. JATO will continue to optimize and generate tactics and techniques as the full potential of the ALQ-218's selective reactive jamming capabilities are developed and employed. JATO will optimize the fusion and correlation of the ALQ-218 tracks with other national asset contacts. JATO also continues to lead our efforts in Force Protection/GWOT (classified discussion upon request) and Next Generation Jammer.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.462	2.259	2.403	
RDT&E Articles Qty				

LINK-16 MESSAGE SETS AND DATA LINKS

(U) Complete testing and correction of deficiencies of the Link-16 modification. Mature the ICAP III weapon system and Link 16 network participation to its full potential by incorporating additional Electronic Warfare message sets enabling full integration with other EW national assets. These data link enhancements will enable the EA-6B ICAP III participation within Force Net and facilitate the EA contributions to the greater situational awareness allowed by NetWork Centric Warfare efforts.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE	

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.485	1.810	2.823	
RDT&E Articles Qty				

MISSION PLANNING

(U) Replacement of the Tactical EA-6B Mission System (TEAMS) with the Joint Mission Planning Systems (JMPS) and associated EA-6B Unique Planning Components (UPC's).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	8.293	14.403	14.483	
RDT&E Articles Qty				

ICAP III UPDATE

(U) Continue optimizing the ICAP III weapon system performance to include integration of both software upgrades and avionics items which include the second Embedded Global Positioning System/Inertial Navigation System (EGI), HARM, ALE-47, Low Band Transmitter, Band 7/8, Night Vision Devices (NVDs), USQ-113 software improvements and data fusion with national assets. The course of maturing ICAP III to full potential in the ForceNet environment will consist of 4 Block upgrades to deliver approximately 15 months apart.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	12.277	4.135	1.826	
RDT&E Articles Qty				

ICAP III

(U) Continue development of ICAP III system. Efforts will concentrate on completing the integration and enhancement of Link-16 capability into the ICAP III aircraft as well as resolving the related OPEVAL/VCD issues associated with the integration of Link-16.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	33.558	33.362	32.775
Current President's Budget:	32.771	32.861	33.143
Total Adjustments	-0.787	-0.501	0.368
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.548	-0.349	
Congressional Increases	0.007		
Economic Assumptions		-0.152	0.368
Miscellaneous Adjustments	-0.246		
Subtotal	-0.787	-0.501	0.368

Schedule:

ICAP III Full Rate Production (FRP) moved to FY05. The two primary factors in the schedule slip were software development and lack of test assets. The ICAP III program completed operational testing (OPEVAL) on 3 Sept 2004, and completed and passed Verification for Correction of Deficiencies in August 2005.

Technical:

Not Applicable.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P-1 # 25, EA-6 Series	126.709	120.619	48.983	22.707	18.059	18.342	18.732	367.188	741.339

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE	

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 was 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 contract award was completed in FY 2003. Milestone III and Full Rate Production discussions were completed in November 2005 with Initial Operating Capability in September 2005.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

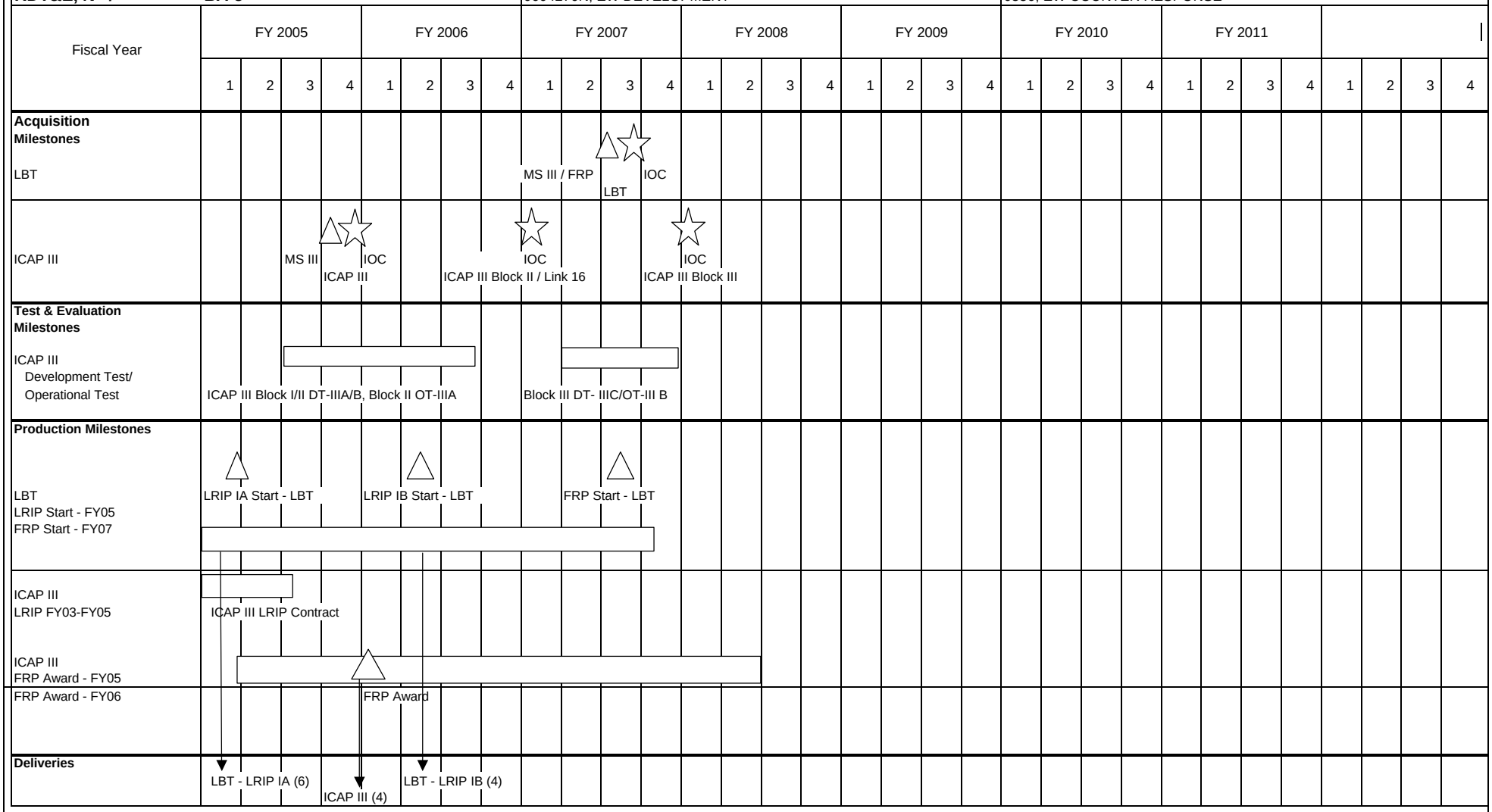
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA 5 | PROGRAM ELEMENT: 0604270N, EW DEVELOPMENT | PROJECT NUMBER AND NAME: 0556, EW COUNTER RESPONSE

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
AWARD FEES- ICAP III	C-CPAF	NORTHRUP GRUMMAN SYS, NY	6.665	1.906	10/30/2004						8.571	8.571
PHD - ICAP III Blk Updates/MIDS	C-BOA	NORTHRUP GRUMMAN SYS, NY	8.498	2.000	10/4/2004	7.209	10/31/2005	8.128	10/31/2006	17.500	43.335	43.335
PRIMARY HDW DEVELOP-ICAP III	C-CPAF	NORTHRUP GRUMMAN SYS, NY	245.304	1.101	1/7/2005	3.508	11/30/2005	1.642	11/30/2006	13.750	265.305	265.305
SYSTEMS ENGINEERING	WX	NAWCAD, PATUXENT RIVER MD	29.752	2.115	10/30/2004	6.331	10/30/2005	5.147	10/31/2006	continuing	continuing	
SYSTEMS ENGINEERING	WX	NAWCWD, PT MUGU CA	30.866	9.204	10/30/2004	4.557	10/31/2005	5.541	10/31/2006	continuing	continuing	
SYSTEMS ENGINEERING	WX	NRL, WASHINGTON DC	9.787			.800	10/31/2005	1.000	10/31/2006	continuing	continuing	
SYSTEMS ENGINEERING	VARIOUS	VARIOUS	59.501	1.440	VARIOUS	1.073	VARIOUS	1.335	VARIOUS	continuing	continuing	
SYSTEMS ENGINEERING	WX	NSWC DET, CRANE IN	12.967	1.994	VARIOUS	.925	VARIOUS	1.020	10/31/2006	continuing	continuing	
SUBTOTAL PRODUCT DEVELOPMENT			403.340	19.760		24.403		23.813		continuing	continuing	
Remarks: FY04 and prior award fee earned is 80% (ICAP III).												
DEVELOPMENT SUPPORT -JATO	SS/FP	JOHNS HOPKINS UNIV, COLUMBIA, MD	11.853	2.551	1/31/2005	2.114	1/31/2006	2.304	1/31/2007	10.500	29.322	29.322
ENGINEERING & TECH SRVC (NON-FFRDC)	VARIOUS	VARIOUS	12.009	1.145	VARIOUS						13.154	13.154
ENGINEERING & TECH SRVC (NON-FFRDC)	VARIOUS	NORTHRUP GRUMMAN SYS, NY		1.000	10/30/2004						1.000	1.000
SUBTOTAL SUPPORT			23.862	4.696		2.114		2.304		10.500	43.476	
Remarks:												
TEST & EVALUATION												
DEV TEST & EVAL-ICAP III	WX	NAWCWD, CHINA LAKE CA		.200	12/30/2004						.200	
DEV TEST & EVAL - ICAP III UPDATE	WX	NAWCAD, PATUXENT RIVER MD	8.522	5.668	12/31/2004	2.475	10/31/2005	2.650	10/31/2006		19.315	
DEVELOPMENTAL TESTING - MP	WX	NAWCWD, PT MUGU CA	.400			.484	10/31/2005	.850	10/31/2006	3.651	5.385	
OPER TEST & EVAL - ICAP III UPDATE	WX	OPER T & E FOR CD 30, NORFOLK VA				2.785	10/31/2005	2.850	10/31/2006		5.635	
OPER TEST & EVAL- ICAP III	WX	OPER T & E FOR CD 30, NORFOLK VA	11.756	.045	1/30/2005						11.801	
OPERATIONAL TEST & EVAL- MP	WX	OPER T & E FOR CD 30, NORFOLK VA	.200			.200	12/31/2005	.200	12/31/2006	1.071	1.671	
SUBTOTAL TEST & EVALUATION			20.878	5.913		5.944		6.550		4.722	44.007	
Remarks: Funding is required to conduct ICAP III and LBT developmental/operational test planning, execution and reporting.												
MANAGEMENT												
GOV ENGINEERING SUPT-MP	WX	NAWCWD, PT MUGU CA	.200	1.485	12/31/2004	.400	10/31/2005	.475	10/31/2006	2.777	5.337	
PROGRAM MGMT SUPPORT	WX	NAWCAD, PATUXENT RIVER MD	1.306	.625	12/19/2004						1.931	
TRAVEL	TO	NAVAIR HQ		.271	10/30/2004						.271	
TRAVEL-NATEC	WX	NAV AIR TEC EN SV CMD, SAN DIEGO CA		.021	10/30/2004						.021	
SUBTOTAL MANAGEMENT			1.506	2.402		.400		.475		2.777	7.560	
Remarks:												
Total Cost			449.586	32.771		32.861		33.143				
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N, EW DEVELOPMENT	0556, EW COUNTER RESPONSE



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604270N, EW DEVELOPMENT				PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Low Band Transmitter								
IOC LBT			3Q					
Full Rate Production (FRP) Decision LBT (MS III)			3Q					
Start Low-Rate Initial Production IA (LRIP)	1Q							
Start Low-Rate Initial Production IB (LRIP)		2Q						
Full Rate Production Start			3Q					
ICAP III								
Milestone III - ICAP III	4Q							
IOC - ICAP III	4Q							
IOC - ICAP III BLOCK II / LINK 16			1Q					
IOC - ICAP III BLOCK III				1Q				
Block I/II DT-IIIA/B, Block II OT-IIIA	3Q-4Q	1Q-3Q						
Block III DT- IIIC/OT-III B			2Q-4Q					
ICAP III FRP Award		1Q						

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME Z1742 EW Technical Development			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.867**	**0.934**	**0.652**	**0.675**	**0.694**	**0.714**	**0.733**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Skunkworks is a CNO N71R3 funded effort that focuses on the quick reaction prototyping of tactical information warfare systems. This program directly addresses various fleet requirements, cryptological 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.

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.437	0.644	0.448
RDT&E Articles Quantity		N/A	N/A	N/A

-(U) Continue airborne Information Warfare jammer development, test and evaluation.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.430	0.290	0.204
RDT&E Articles Quantity		N/A	N/A	N/A

-(U) Continue aircraft Information Warfare system design.

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604270N Electronic Warfare Development	Z1742 EW Technical Development	

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	0.875	0.948	1.147
Current President's Budget	0.867	0.934	0.652
Total Adjustments	-0.008	-0.014	-0.495
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.014	-0.010	
Congressional Increases			
Economic Assumptions		-0.004	0.003
Miscellaneous Adjustments	0.006		-0.498
Subtotal	-0.008	-0.014	-0.495

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N Electronic Warfare Development	Z1742 EW Technical Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY:

- Not Applicable

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME Z1742 EW Technical Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	Var	Various	1.669	0.386	Various	0.406	Various	0.294	Various	2.871	5.626	
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	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			1.669	0.386		0.406		0.294		2.871	5.626	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME Z1742 EW Technical Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	Various	Various	0.606	0.100	Various	0.100	Various	0.100	Various	0.440	1.346	
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 Fee											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.606	0.100		0.100		0.100		0.440	1.346	

Remarks:

CLASSIFICATION: UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N Electronic Warfare Development	Z1742 EW Technical Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.110	0.180	Various	0.200	Various	0.150	Various	0.600	2.240	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fee												
											0.000	
Subtotal T&E			1.110	0.180		0.200		0.150		0.600	2.240	

Remarks:

Contractor Engineering Support	Various	Various	0.558	0.100	Various	0.113	Various	0.063	Various	0.379	1.213	
Government Engineering Support	Various	Various	0.515	0.101	Various	0.115	Various	0.045	Various	0.480	1.256	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.073	0.201		0.228		0.108		0.859	2.469	

Remarks:

Total Cost			4.458	0.867		0.934		0.652		4.770	11.681	

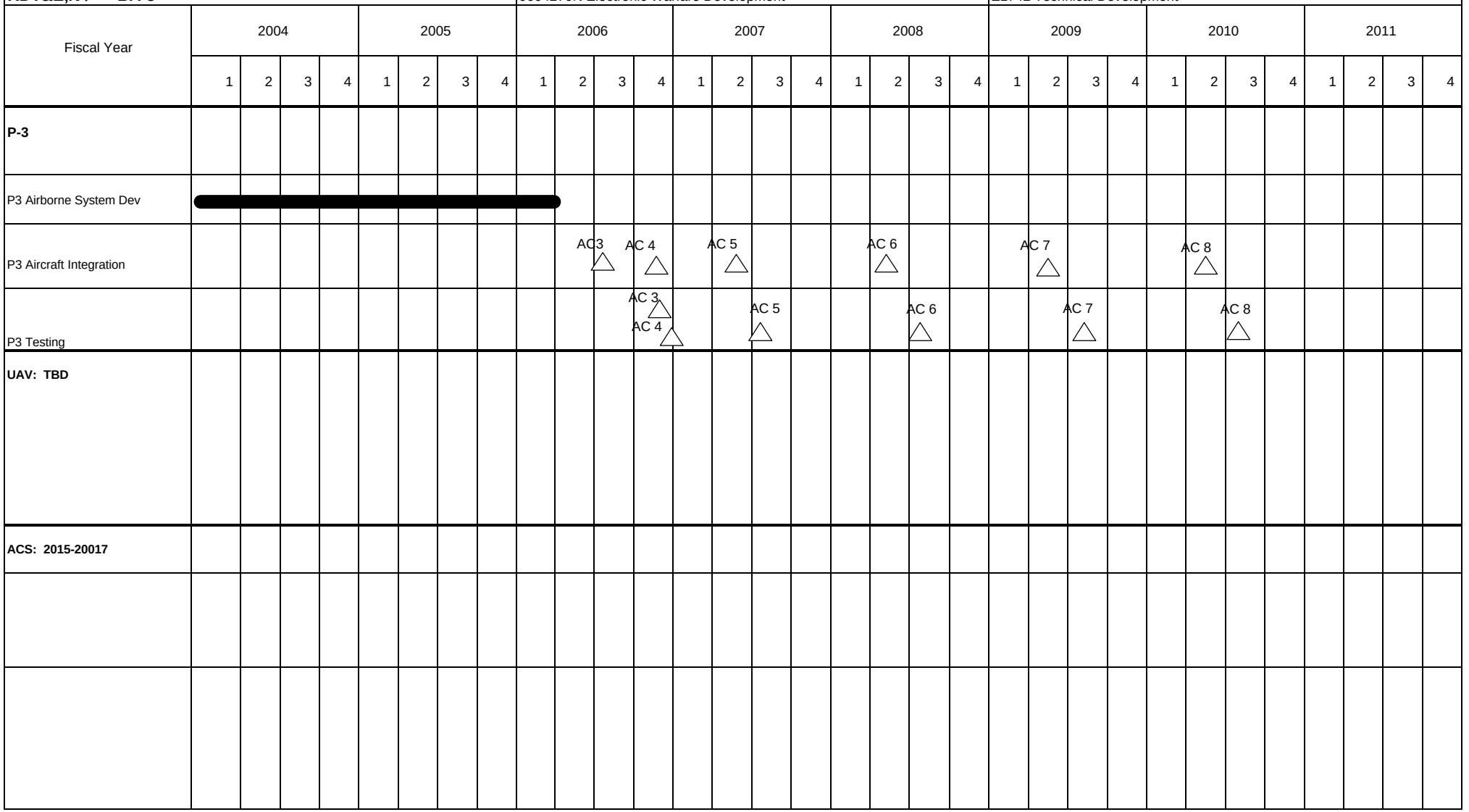
Remarks:

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-5	0604270N Electronic Warfare Development	Z1742 Technical Development



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-5**	PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME Z1742 Technical Development			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Airborne System Development								
P3 Airborne System Development		1Q-4Q	1Q					
P3 Aircraft Integration			3Q	2Q	2Q	2Q		
P3 Developmental Testing			4Q	1Q+3Q	3Q	3Q	3Q	

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2175 TACTICAL AIR ELECTRONIC WARFA	12.928	7.516	5.364					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This subproject develops the new techniques generator and fiber optic towed decoy of the Radio Frequency Countermeasures (RFCM) Subsystem. It also integrates IDECM Block 3 (the RFCM and FOTD) with the rest of the Electronic Warfare (EW) suite (i.e., Radar Warning Receiver (RWR) and Countermeasures Dispensing Set (CMDS)), the associated cockpit controls, displays and other avionics for the lead aircraft (F/A-18E/F).

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	12.928			
RDT&E Articles Qty				

Fund engineering and manufacturing contract and engineering, technical and logistic support. Fund A-Kit Block 2 (ALQ-214) efforts for integration of the Radio Frequency Countermeasure (RFCM) subsystems into the F/A-18 E/F.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		7.516		
RDT&E Articles Qty				

Fund Block 3 (Fiber Optic Towed Decoy (FOTD) efforts for integration of the RFCM subsystems into the F/A-18 E/F.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost			5.364	
RDT&E Articles Qty				

Fund Block 3 (FOTD) Combined Developmental Testing and Operational Testing. Fund Block 3 (FOTD) OPEVAL and Milestone III decision.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	13.226	7.631	5.339
Current President's Budget:	12.928	7.516	5.364
Total Adjustments	-0.298	-0.115	0.025
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.172	-0.080	
Congressional Increases	0.003		
Economic Assumptions		-0.035	0.025
Miscellaneous Adjustments	-0.129		
Subtotal	-0.298	-0.115	0.025

Schedule:
IB-3 schedule has been changed due to delays in planned flight testing approval and unavailability of support equipment:
ALQ-214 schedule has been changed to reflect an update for contract award dates.

Technical: Not Appliable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA	

D. OTHER PROGRAM FUNDING SUMMARY:

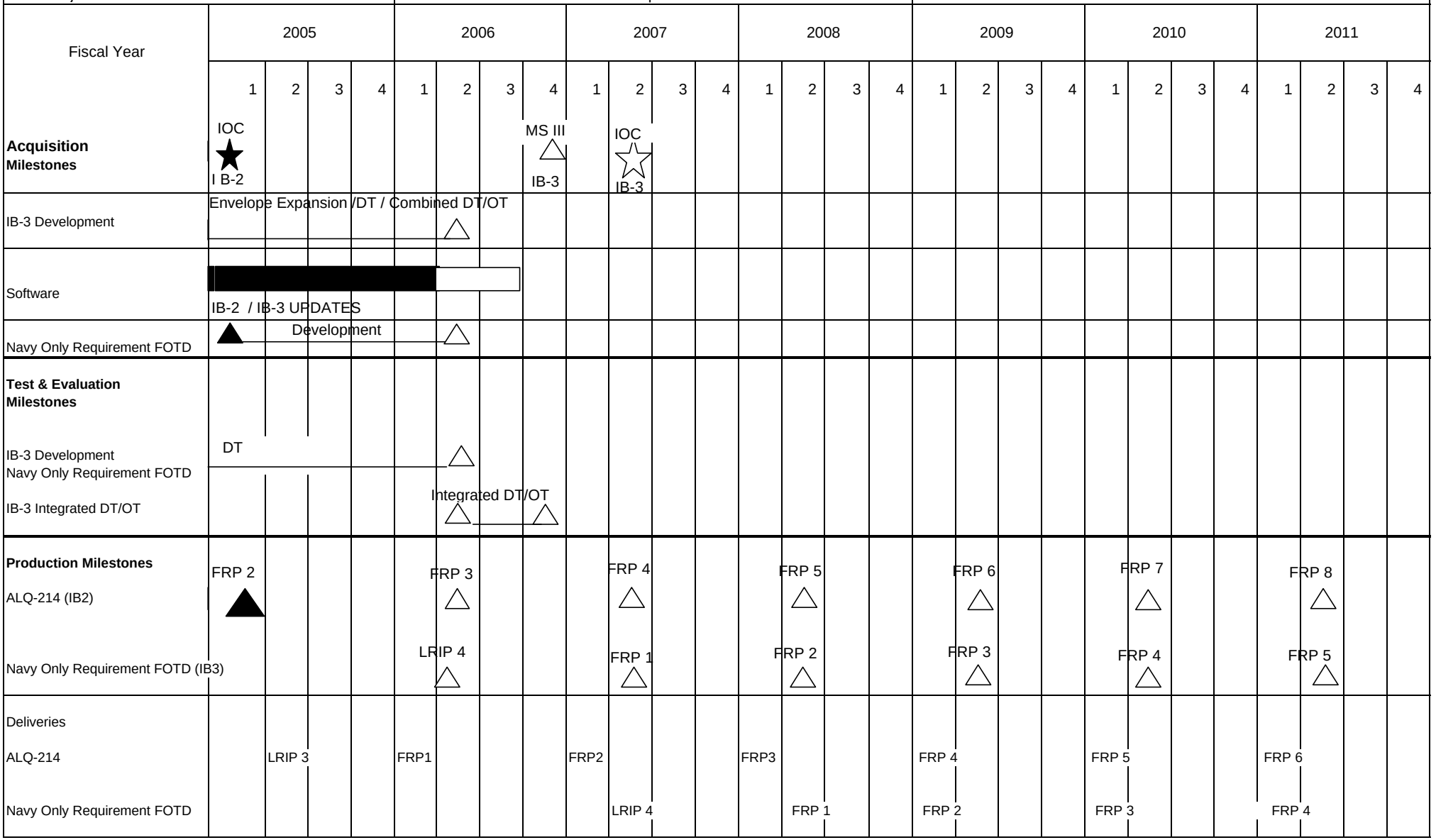
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-5, Line 50, Common ECM (OSIP 007-03, IDECM)	36.057	42.432	35.211	36.113	36.545	37.324	38.791	148.444	410.917
PANMC, Airborne Expendable Countermeasures, (QA 120)		13.266	18.480	24.458	24.757	25.320	25.507		131.788

E. ACQUISITION STRATEGY: IDECM Fiber Optic Towed Decoy sole source FRP in FY 2007.

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604270N, EW DEVELOPMENT				PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Aircraft Integration	SS-FFP	THE BOEING COMPANY, SAINT LOUIS, MO				.200	2/1/2006	.250	2/1/2007		.450	.450
Ancillary Hdw Dev - IMPLC	SS-CPFF	RAYTHEON COMPANY, GOLETA, CA						.400	2/1/2007		.400	.400
Ancillary Hdw Dev - Navy Only FOTD	VARIOUS	VARIOUS						.350	VARIOUS		.350	.350
EMD Support (IDECM)	SS-BOA	BAE SYSTEMS INFO.&ELEC.SYS.INTEGRAT	8.405					.500	3/1/2007		8.905	8.905
Systems Eng	C-CPIF	BAE SYSTEMS INFO.&ELEC.SYS.INTEGRAT	.600	7.322	12/15/2004	.580	3/1/2006				8.502	8.502
Systems Eng	C-CPIF	NAWCWD, CHINA LAKE CA	62.159					.450	3/1/2007		62.609	62.609
SUBTOTAL PRODUCT DEVELOPMEN			71.164	7.322		.780		1.950			81.216	
Remarks:												
SUPPORT												
Integrated Logistics Support	VARIOUS	VARIOUS	.550	.384	VARIOUS			.200	VARIOUS		1.134	
Software Development	WX	NAWCWD, PT MUGU CA	.699	.208	11/15/2004						.907	
SUBTOTAL SUPPORT			1.249	.592				.200			2.041	
Remarks:												
TEST & EVALUATION												
Engineering/Logistic Support	WX	NAWCAD, PATUXENT RIVER MD	26.972	2.285	12/1/2004	1.192	11/1/2005				30.449	
Engineering/Logistic Support	WX	NAWCWD, CHINA LAKE CA	3.000	1.480	12/1/2004	2.852	11/1/2005	1.850	11/1/2006		9.182	
Engineering/Logistic Support	VARIOUS	VARIOUS	.150	.381	VARIOUS						.531	
Engr/Log Spt - ETS (NON-FFRDC)	VARIOUS	VARIOUS	.352	.417	VARIOUS			.200	VARIOUS		.969	
Flight Test	WX	NAWCWD, CHINA LAKE CA		.156	11/1/2004						.156	
Miscellaneous (efforts < $1M each)	WX	TBD						.100	12/1/2006		.100	
Test Support (OTEVFOR)	WX	OPER T & E FOR CD 30, NORFOLK VA	1.110	.010	10/1/2004	2.052	11/1/2005	.800	10/1/2006		3.972	
Test Support - ETS (NON-FFRDC)	RX	OPER T & E FOR CD 30, NORFOLK VA	.276			.464	12/1/2005				.740	
SUBTOTAL TEST & EVALUATION			31.860	4.728		6.560		2.950			46.098	
Remarks: Totals may not add due to rounding.												
MANAGEMENT												
Program Mgmt Support	VARIOUS	VARIOUS	19.127	.196	VARIOUS	.080	VARIOUS	.239	VARIOUS		19.642	
Travel	TO	NAVAIR HQ	.240	.090	10/1/2004	.096	10/1/2005	.025	10/1/2006		.451	
SUBTOTAL MANAGEMENT			19.367	.286		.176		.264			20.093	
Remarks:												
Total Cost			123.640	12.928		7.516		5.364			149.448	
Remarks:												

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-5	0604270N Electronic Warfare Development	2175 TACAIR ELECTRONIC WARFARE



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME 2175 TACAIR ELECTRONIC WARFARE			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
IB-2 MILESTONE III (IB-2)								
IB-2 IOC (IDECM BLOCK 2)	1Q							
IB-3 MILESTONE III		4Q						
IB-3 IOC			2Q					
IB-3 Development, Envelope Expansion/Combined DT/OT	1Q-4Q	1Q-2Q						
IB-2/ IB-3 Updates (Software)	1Q-4Q	1Q-3Q						
Navy Only FOTD Development	1Q-4Q	1Q-2Q						
IB-3 Development DT	1Q-2Q	1Q-2Q						
IB-3 Integrated DT/OT		2Q-4Q						
ALQ-214 FRP 1 (Production IB-2)								
ALQ-214 FRP 2 (Production IB-2)	1Q							
ALQ-214 FRP 3 (Production IB-2)		2Q						
ALQ-214 FRP 4 (Production IB-2)			2Q					
ALQ-214 FRP 5 (Production IB-2)				2Q				
ALQ-214 FRP 6 (Production IB-2)					2Q			
ALQ-214 FRP 7 (Production IB-2)						2Q		
ALQ-214 FRP 8 (Production IB-2)							2Q	
Navy Only Requirement FOTD LRIP 4 (IB-3)		2Q						
Navy Only Requirement FOTD FRP 1 (Production - IB-3)			2Q					
Navy Only Requirement FOTD FRP 2 (Production - IB-3)				2Q				
Navy Only Requirement FOTD FRP 3 (Production - IB-3)					2Q			
Navy Only Requirement FOTD FRP 4 (Production - IB-3)						2Q		
Navy Only Requirement FOTD FRP 5 (Production - IB-3)							2Q	
ALQ-214 LRIP 2 DELIVERIES								
ALQ-214 LRIP 3 DELIVERIES	2Q							
ALQ-214 FRP 1 DELIVERIES		1Q						
ALQ-214 FRP 2 DELIVERIES			1Q					
ALQ-214 FRP 3 DELIVERIES				1Q				
ALQ-214 FRP 4 DELIVERIES					1Q			
ALQ-214 FRP 5 DELIVERIES						1Q		
ALQ-214 FRP 6 DELIVERIES							1Q	
Navy Only Requirement FOTD LRIP 4 DELIVERIES			2Q					
Navy Only FOTD FRP I Deliveries				2Q				
Navy Only FOTD FRP 2 Deliveries					1Q			
Navy Only FOTD FRP 3 Deliveries						1Q		
Navy Only FOTD FRP 4 Deliveries							1Q	

LRIP 2 in the FY 2006 President's Budget has been changed to LRIP 4 due to a typographical error. LRIP 3 deliveries have been completed.

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							**DATE:** **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604270N ELECTRONIC WARFARE DEVELOPMENT					PROJECT NUMBER AND NAME R2260 SPECIFIC EMITTER ID		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**0.697**	**0.715**	**0.683**	**0.753**	**0.675**	**0.691**	**0.704**	
RDT&E Articles Qty								

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

This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	R2260 SPECIFIC EMITTER ID

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
SENSOR FUSION	0.100	0.196	0.278
RDT&E Articles Quantity			

This effort supports systems development and information fusion of improved Specific Emitter Identification (SEI) technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. FY05: Completed task to deploy Windows based SEI (WINSEI) version 6.0. With many enhancements to aid in sensor fusion. Delivered software to tactical and operational SEI collection sites enabling additional capabilities to collection assets. Completed support integration of sensor suite at operational chokepoint enabling better situational awareness for data fusion. Initiated task to perform sensor fusion between Automatic Identification System (AIS) and SEI data. Fusion of AIS and SEI data will enable more robust signal detection and tracking. Completed task to incorporate AIS data into WINSEI operational display allowing the operator to observe, record, and attempt fusion of AIS with SEI data. AIS contacts are displayed on the screen for the operator to see, and allows them to easily slew antennas to AIS contacts for SEI data collection. WINSEI is now capable of interfacing with several leading AIS receivers and their associated reporting formats. AIS data is captured within WINSEI for logging. FY06: Continue all efforts of FY05 less those noted as completed above. Initiate task to fuse additional sources of data with SEI for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Work toward increasing sensor fusion, collection and reporting automation to help reduce staffing and support remote access and control capability. FY07: Continue all efforts of FY06 less those noted as completed above. Complete task to fuse AIS data with SEI data within WINSEI and the SEI database.

	FY 05	FY 06	FY 07
SYSTEM AUTOMATION	0.297	0.222	0.203
RDT&E Articles Quantity			

This effort supports development of an autonomous surveillance system capable of providing emitter signal information to a central location. FY05: Completed evaluation of SEI match functions. This task has successfully identified critical information necessary to optimize the use of SEI for tactical and operational users. Information is being documented and disseminated to SEI user communities and will aid in development of SEI collection concept of operations (CONOPS). Initiated update of the SEI database within WINSEI. Associated to this was the implementation of an improved database lookup within WINSEI (Version 6.0). This development allows much faster database queries and results. Initiated task to automate fusion of AIS and other sensor information with SEI data. FY05 task completed under Sensor Fusion allowed WINSEI to accept data from multiple AIS receivers and display that data within WINSEI. This has paved the way for research in the automation of this powerful capability. FY06: Continue all efforts of FY05 less those noted as completed above. Complete update of existing SEI database within WINSEI to increase performance and content within the database. Database will be structured to be dynamic and have the capability to hold different forms of data to aid in signal identification and tracking. Initiate task to develop an unmanned, autonomous, remote collection and surveillance system. FY07: Continue all efforts of FY06 less those noted as completed above.

	FY 05	FY 06	FY 07
TECHNOLOGY REFRESH & COMMUNICATION ENHANCEMENT	0.300	0.297	0.202
RDT&E Articles Quantity			

This effort improves SEI system performance, real-time communication and tactical use of SEI which will be expanded with next generation SEI technology. FY05: Initiated integration of advanced SEI hardware with WINSEI software to support improved SEI system performance and capabilities for tactical and technical use, and which can be expanded with next generation SEI algorithms. Completed implementation of an upgraded SEI algorithm to aid in collection across radar modes. Completed implementing message reporting upgrades to make SEI collections available to a wider community of users. Initiated task to incorporate further message reporting formats for dissemination and importation of SEI data. This will improve SEI system performance, communication, and interoperability. FY06: Continue all efforts of FY05 less those noted as completed above. Initiate task to incorporate other SEI algorithms into deployed processing software. FY07: Continue all efforts of FY06 less those noted as completed above. Complete task to incorporate other SEI algorithms into deployed processing software.

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.708	0.726	0.675
Current President's Budget	0.697	0.715	0.683
Total Adjustments	-0.011	-0.011	0.008
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.012	-0.008	
Congressional Increases			
Economic Assumptions		-0.003	0.008
Miscellaneous Adjustments	0.001		
	-0.011	-0.011	0.008

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION: UNCLASSIFIED		
EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	R2260 SPECIFIC EMITTER ID

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Not Applicable

(U) E. ACQUISITION STRATEGY:

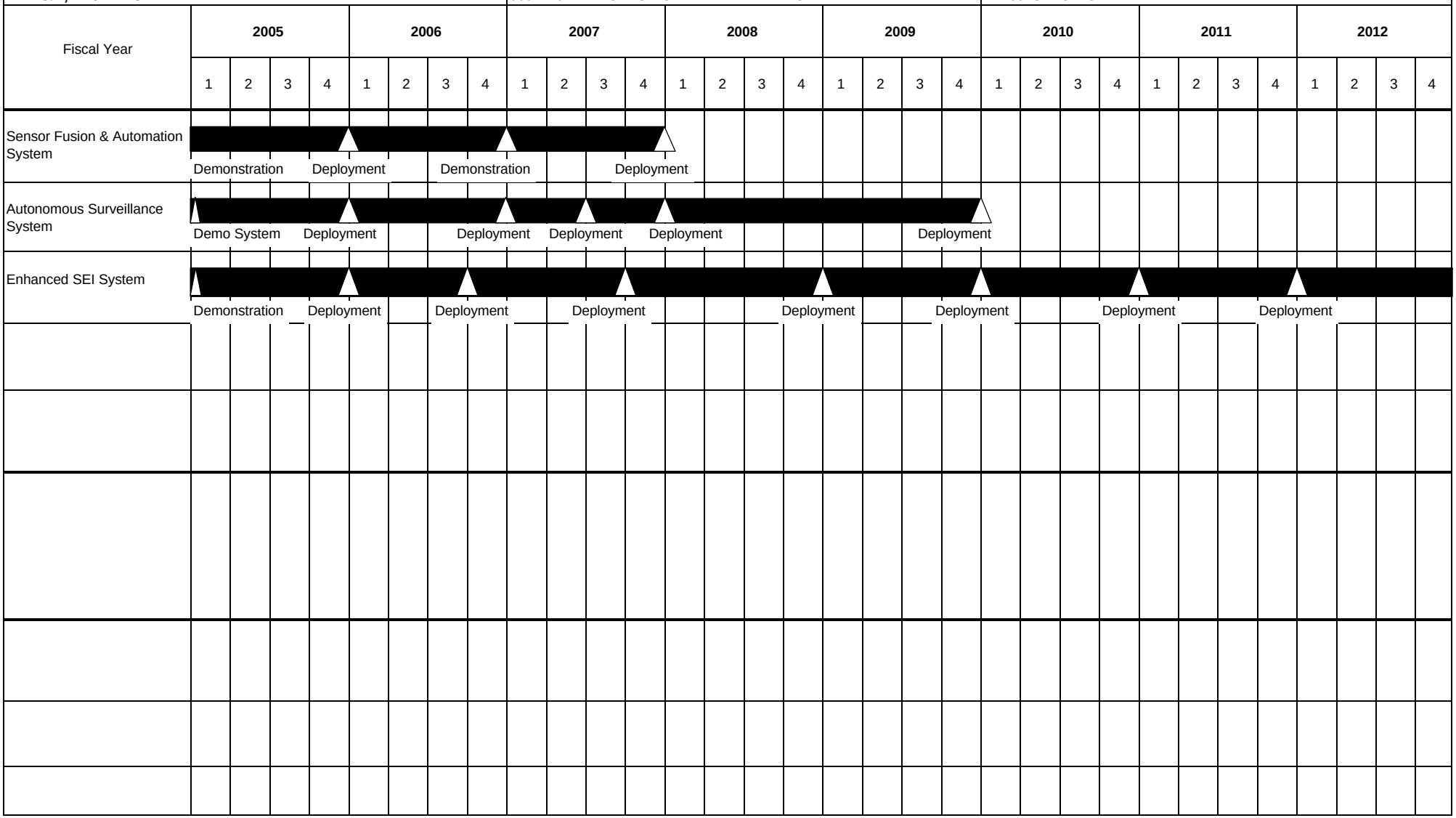
This is a non-acquisition Research and Development Program.

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	R2260 SPECIFIC EMITTER ID



CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	R2260 SPECIFIC EMITTER ID

Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Demonstrate Sensor Fusion & Autonomous System	4Q							
Demonstrate Feasibility of Autonomous Surveillance System								
Demonstrate Completed Autonomous Surveillance System								
Deploy Automated SEI System with Sensor Fusion								
Deploy Next generation SEI hardware	4Q	4Q	4Q	4Q	4Q	4A	4Q	

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**					PROJECT NUMBER AND NAME 9999 Congressional Adds	
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	1.254	1.250						
RDT&E Articles Qty **Not Applicable**								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CONGRESSIONAL ADD.

The project augments and improves existing infrared signature reduction located at Crane Naval Surface along with Purdue University.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 9999 Congressional Adds	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

9499	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.254	1.250		
RDT&E Articles Qty				

FY 2005 and 2006 Congressional Add. 9499, IR SIGNATURE REDUCTION TO MITIGATE TERRORIST MISSILES
The proliferation of fourth generation shoulder-launched infrared (IR) sensing missiles provides one of the greatest challenges to national security at the present time. The Navy is looking for ways to reduce the threat IR missiles to aircraft from sources such as Man Portable Air Defense Weapon Systems (MANPADS) especially against those slow climbing aircraft that contribute to the transportation of armed forces around the world. The resulting product of this research could give the military a more sure and dependable capability to guard against this threat.

This funding will be used to focus on research and lab equipment necessary to develop a laboratory for working with Infrared (IR) signature reduction. Crane Naval Surface Warfare Center along with Purdue University will provide the technology evaluation and testing for the reserach carried out to counteract these threats. Research will include candidate design assessments against various current and incoming-in-service IR missiles, including the effect of various atmospheric condition and clutter background.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 9999 Congressional Adds	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.288		
Current President's Budget:	1.254	1.250	0.000
Total Adjustments	-0.034	1.250	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.034		
Congressional Increases		1.250	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.034	1.250	0.000

Schedule: Not Applicable.

Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604270N, EW DEVELOPMENT**	PROJECT NUMBER AND NAME 9999 Congressional Adds	

D. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

E. ACQUISITION STRATEGY: Not Applicable.

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604273N, VXX EXEC HELO DEVELOPMENT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	535.694	921.840	682.597	682.735	367.961	210.751	34.230	
3058 VH-XX HELO REPLACEMENT	535.694	921.840	682.597	682.735	367.961	210.751	34.230	

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Marine Helicopter Squadron One (HMX-1) is required to provide safe and timely transportation for the President and Vice President of the United States, heads of state and others as directed by the White House Military Office (WHMO). The global nature of these commitments requires HMX-1 aircraft to deploy worldwide and operate in varying environmental and climatic conditions without mission degradation. Currently two Type, Model, Series (TMS) aircraft are used by HMX-1 for the Presidential support mission – the VH-3D and the VH-60N. The VXX program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VXX to be available to assume the Presidential vertical lift mission by 2008, three test article aircraft, system design and development (SDD) efforts, maintenance trainers, and associated logistics must be initiated by 2005. Five pilot production aircraft and associated design and development efforts must also be initiated to support the desired timeline. In addition, 3 Low-Rate Initial Production aircraft will be procured starting in FY2008. These aircraft will provide production representative articles to complete operational testing and establish the initial operational capability. Contractor efforts are expected to include SDD work, test article aircraft, and pilot production aircraft. SDD efforts will include system and subsystem requirements and functional analysis and allocation, system and subsystem design, development, and test, human and crew systems integration, facilities upgrades/modifications and environmental assessments, security plan implementation, program management activities, to include risk management and logistics support program implementation.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604273N, VXX EXEC HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 3058, VH-XX HELO REPLACEMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3058 VH-XX HELO REPLACEMENT	535.694	921.840	682.597	682.735	367.961	210.751	34.230	
RDT&E Articles Qty	3	5		3				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Marine Helicopter Squadron One (HMX-1) is required to provide safe and timely transportation for the President and Vice President of the United States, heads of state and others as directed by the White House Military Office (WHMO). The global nature of these commitments requires HMX-1 aircraft to deploy worldwide and operate in varying environmental and climatic conditions without mission degradation. Currently two Type, Model, Series (TMS) aircraft are used by HMX-1 for the Presidential support mission – the VH-3D and the VH-60N. The VXX program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VXX to be available to assume the Presidential vertical lift mission by 2008, three test article aircraft, system design and development (SDD) efforts, maintenance trainers, and associated logistics must be initiated by 2005. Five pilot production aircraft and associated design and development efforts must also be initiated to support the desired timeline. In addition, 3 Low-Rate Initial Production aircraft will be procured starting in FY2008. These aircraft will provide production representative articles to complete operational testing and establish the initial operational capability. Contractor efforts are expected to include SDD, test article aircraft, and pilot production aircraft. SDD efforts will include system and subsystem requirements and functional analysis and allocation, system and subsystem design, development, and test, human and crew systems integration, facilities upgrades/modifications and environmental assessments, security plan implementation, program management activities, to include risk management and logistics support program implementation.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604273N, VXX EXEC HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 3058, VH-XX HELO REPLACEMENT	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	492.591	880.328	615.330	
RDT&E Articles Qty	3	5		

Contract award for initial test article aircraft, long-lead pilot production aircraft efforts, System Design and Development (SDD) work efforts, low-rate initial production, and support of training systems efforts including but not limited to, aircrew / pilot trainers, training curriculum, and requisite training support.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	10.109	14.633	28.761	
RDT&E Articles Qty				

Test and Evaluation of test article aircraft, pilot production aircraft, and SDD assets, including Live Fire Test and Evaluation.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	32.994	26.879	38.506	
RDT&E Articles Qty				

In-house, field activity, and contractor support of VXX Integrated Product Teams (IPTs) activities. Efforts include, but are not limited to, government development support, integrated logistics support, engineering support, program management support, systems engineering support, support equipment, technical pubs, and travel for VHXX program.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604273N, VXX EXEC HELO DEVELOPMENT**	PROJECT NUMBER AND NAME 3058, VH-XX HELO REPLACEMENT	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	550.853	935.932	560.631
Current BES / President's Budget:	535.694	921.840	682.597
Total Adjustments	-15.159	-14.092	121.966
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-14.237	-9.830	
Congressional Increases			
Economic Assumptions		-4.262	3.572
Miscellaneous Adjustments	-0.922		118.394
Subtotal	-15.159	-14.092	121.966

Schedule: Not Applicable

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 045500; V-XX	0.000	0.000	0.000	54.047	451.119	369.259	406.739	980.619	2,261.783

E. ACQUISITION STRATEGY: The VH-XX program was designated an ACAT ID program. Analysis of Alternatives & Concept design studies were completed to help determine which competing technology was the most appropriate to satisfy the Executive Vertical Lift requirement. The program received milestone B/C approval from OUSD (AT&L) on 27 JAN 2005 and subsequently awarded an SDD contract to LMSI on 28 JAN 2005.

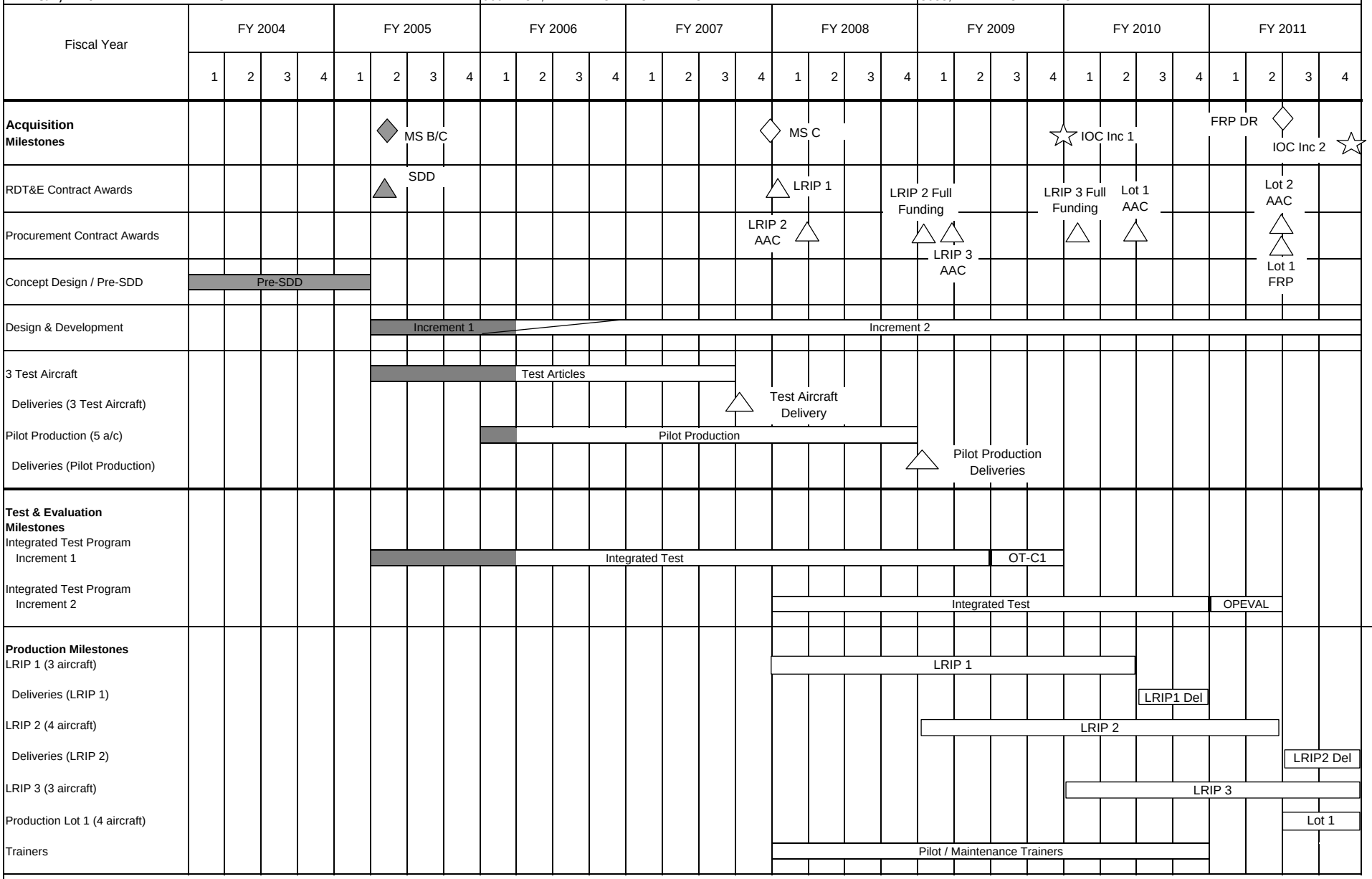
Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604273N, VXX EXEC HELO DEVELOPMENT				PROJECT NUMBER AND NAME 3058, VH-XX HELO REPLACEMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	C-CPAF	LOCKHEED MARTIN CORP, OWEGO, NY		492.591	1/28/2005	880.328	1/28/2006	615.330	1/28/2007	1,080.751	3,069.000	3,069.000
Systems Eng	WX	NAWCAD, PATUXENT RIVER MD	2.349								2.349	
SUBTOTAL PRODUCT DEVELOPMENT			2.349	492.591		880.328		615.330		1,080.751	3,071.349	
Remarks: Target value of contract does not reflect additional funding required for LRIP I.												
SUPPORT												
Develop Support Equip	VARIOUS	VARIOUS		2.400	1/1/2005	4.100	1/1/2006	11.300	1/1/2007	55.275	73.075	
Integrated Logistics Sup	VARIOUS	NADEP, CHERRY POINT NC		1.053	1/1/2005						1.053	
Integrated Logistics Sup	VARIOUS	NAWCAD, LAKEHURST NJ		1.179	1/1/2005						1.179	
Integrated Logistics Sup	VARIOUS	VARIOUS	1.565	2.003	1/1/2005	4.710	1/1/2006	11.500	1/1/2007	56.250	76.028	
Studies & Analyses	C-FFP	LOCKHEED MARTIN CORP, OWEGO, NY	87.423								87.423	87.423
Studies & Analyses	C-FFP	SIKORSKY AIRCRAFT, CT	87.422								87.422	87.422
Studies & Analyses	WX	NAWCAD, PATUXENT RIVER MD	2.180								2.180	
SUBTOTAL SUPPORT			178.590	6.635		8.810		22.800		111.525	328.360	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	VARIOUS	VARIOUS	.884	8.959	1/1/2005	13.633	1/1/2006	27.761	1/1/2007	124.247	175.484	
Live Fire Test & Eval	WX	NAWCWD, CHINA LAKE CA	1.490	1.150	1/1/2005	1.000	1/1/2006	1.000	1/1/2007	7.310	11.950	
SUBTOTAL TEST & EVALUATION			2.374	10.109		14.633		28.761		131.557	187.434	
Remarks:												
MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	3.084	1.410	11/1/2004	2.541	11/1/2005	1.438	11/1/2006	7.036	15.509	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	11.467	17.900	11/1/2004	7.049	11/1/2005	8.157	11/1/2006	39.864	84.436	
Government Eng Sup	VARIOUS	VARIOUS	.096	.441	VARIOUS	1.950	VARIOUS	1.452	VARIOUS	7.102	11.041	
Program Mgmt Sup	VARIOUS	VARIOUS	18.948	6.086	11/1/2004	5.941	11/1/2005	4.343	11/1/2006	21.243	56.561	
Travel	VARIOUS	NAVAIR, PAXTUXENT RIVER MD	.357	.522	11/1/2004	.588	11/1/2005	.316	11/1/2006	1.546	3.329	
SUBTOTAL MANAGEMENT			33.952	26.359		18.069		15.706		76.791	170.877	
Remarks:												
Total Cost			217.265	535.694		921.840		682.597		1,400.624	3,758.020	
Remarks:												

EXHIBIT R4, Schedule Profile | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604273N, VXX EXEC HELO DEVELOPMENT

PROJECT NUMBER AND NAME: 3058, VXX HELO REPLACEMENT



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604273N, VXX EXEC HELO DEVELOPMENT				PROJECT NUMBER AND NAME 3058, VXX HELO REPLACEMENT			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Concept Design/Pre-SDD	1Q-4Q	1Q						
Milestone B/C (MSB/C)		2Q						
SDD Contract Award		2Q						
Quality Design and Build (Test Articles)		2Q-4Q	1Q-4Q	1Q-4Q				
Integrated Test Program (Increment 1)		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
Pilot Production			1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Milestone C (MSC)					1Q			
Low-Rate Initial Production I (LRIP I) Contract Award					1Q			
Low-Rate Initial Production I					1Q-4Q	1Q-4Q	1Q-2Q	
Low-Rate Initial Production II AAC Contract Award					1Q-2Q			
Pilot / Maintenance Trainers					1Q-4Q	1Q-4Q	1Q-4Q	
Integrated Test Program (Increment II)					1Q-4Q	1Q-4Q	1Q-4Q	
Low-Rate Initial Production II						1Q-4Q	1Q-4Q	1Q-2Q
Low-Rate Initial Production II Full Funding Contract Award						1Q		
Low-Rate Initial Production III AAC Contract Award						1Q		
Operational Testing						3Q-4Q		
LRIP 3 Full Funding							1Q	
IOC (Increment 1)							1Q	
Lot 1 AAC							2Q	
Low-Rate Initial Production I Delivery							3Q-4Q	
Low-Rate Initial Production III							1Q-4Q	1Q-4Q
OPEVAL								1Q-2Q
Lot 2 AAC								2Q
Lot 1 FRP								2Q
Full Rate Production (FRP) Decision								2Q-3Q
Low-Rate Initial Production II Delivery								3Q-4Q
Production Lot 1 (4 aircraft)								3Q-4Q
IOC (Increment 2)								4Q

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY**		R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS (JTRS)					
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Cost	**78.036**	**168.498**	**1.153**	**284.305**	**270.481**	**197.864**	**97.774**
3073 JTRS Common Development 3073 JTRS Implementation (JTRS-Navy Unique) 3073 Joint Task Force Wide Area Relay Network (JTF WARNET)	**54.342**	**87.152**	**0.000**	**284.305**	**270.481**	**197.864**	**97.774**
3020 Multifunctional Information Distribution System (MIDS JTRS-Common) 3020 Multifunctional Information Distribution System (MIDS JTRS-Navy Unique)	**21.794**	**78.946**	**1.153**	**0.000**	**0.000**	**0.000**	**0.000**
9999 Congressional Adds	**1.900**	**2.400**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

In FY 2007, Project No. 3073, AMF JTRS and Project No. 3020, MIDS JTRS, efforts were transferred from Program Element (PE) 0604280N to PE 0604280A, to support the revised JTRS joint program development acquisition strategy.

In FY08-FY11, Project No. 3073 represents the Navy share (1/3) of the funding associated with all JTRS Development Projects. It includes funding for: AMF JTRS, MIDS JTRS, Ground Mobile Radio JTRS (formerly Cluster 1), Handheld, Manpack, Small Form Fit JTRS Radios (formerly Cluster 5), and the Joint Waveforms Development funding.

JTF WARNET funding currently ends in FY06.

Congressional Add (Digital Modular Radio (DMR)) currently ends in FY06.

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

(AMF JTRS)

In February 2005, Mr. Wynne, Acting USD (AT&L) issued a JTRS Acquisition Decision Memorandum (ADM) directing the realignment of the current acquisition management structure for all JTRS programs under the authority of a single JTRS Joint Program Executive Office (JPEO). The ADM states that any obligation or transfer of RDT&E funds, during the current year of execution, for radio, waveform, and common ancillary equipment development associated with any of the JTRS program elements will require the express approval of the JPEO.

In November 2003, the Navy & Air Force Service Acquisition Executives directed the merger of Clusters 3 (Navy) and 4 (Air Force) to establish a combined JTRS Cluster, renamed Airborne, Maritime/Fixed Station JTRS (AMF JTRS). On January 21, 2004, USD (AT&L) signed an Acquisition Decision Memorandum (ADM) acknowledging the combination of the two clusters, as well as authorizing the release of the Pre-System Development and Demonstration (SDD) Request for Proposal (RFP) for the AMF JTRS program. Funding represents Navy's portion of AMF JTRS.

The Airborne, Maritime/Fixed Station JTRS (AMF JTRS) will be designed to support communications readiness and mission success by providing military commanders with the ability to command, control and communicate with their forces via secure voice, video, and data media forms during all aspects of military operations. The AMF JTRS will be a hardware configurable and software definable radio (SDR) system that provides increased interoperability, flexibility and adaptability to support the varied mission requirements of the warfighter. The AMF JTRS system will provide radio sets that are software definable, multi-band, multi-mode capable, secure, network-centric, and able to provide simultaneous voice, data, and video communications over multiple frequency bands between 2 MegaHertz (MHz) and 2 GigaHertz (GHz), as well as scalable to meet the needs of multiple platforms. As a requirement, the AMF JTRS will operate with legacy equipment and waveforms currently used by civilian and military airborne, surface, subsurface, and fixed station platforms as well as incorporate new waveforms and Cryptographic Equipment Applications (CEAs) as they are developed. As a result of this fielding, legacy radios and cryptographic devices will eventually be phased out through the JTRS implementation effort. This Implementation effort is Navy-specific work being performed as part of the planned migration to transition to the JTRS capability. The Air Force Electronic Systems Center (AF/ESC). PEO C4I and Space, and the Joint Program Executive Office will fulfill the AMF JTRS requirements in a phased approach. Each phase will build on the technological achievements of its predecessor, while at the same time providing expanded capabilities (in both hardware and software). AMF JTRS will incorporate the following key concepts into its design: commonality across JTRS clusters, transformational communications, networking, automation and control, information gateways, and quality of service. The AMF JTRS procurement specifically involves the development of Joint Tactical Radio (JTR) Set and the integration of the Software Communication Architecture (SCA) Compliant waveforms and CEAs provided by the JTRS Joint Waveforms Program Office. This procurement also provides for platform integration support necessary for these capabilities to be integrated into the Maritime and Fixed Station platforms through the Service Integration Kits (SIK).

(Joint Task Force Wide Area Relay Network Program Enhancement (JTF WARNET))

This program is an NRL initiative that has grown from an Advanced Concept Technology Demonstration (ACTD). This program supports JTRS CONOPS & Tactics, Techniques and Procedures (TTP) development, incorporates Intra-Battle Group Wireless Network (IBGWN) capabilities, supports ADNS Integration and supports Joint Translator Forwarder (JXF.)

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.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY**	R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS

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

(MIDS)

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 technical objective of the MIDS JTRS program is to transform the current MIDS-LVT into a four-channel, Software Communications Architecture (SCA) compliant JTRS, while maintaining current Link-16 and tactical air navigation system (TACAN) functionality. MIDS gathers data from multiple sources which provides the platform with a digital view of the battlefield. The MIDS JTRS is designed to be plug-and-play interchangeable for U.S. Navy and U.S. Air Force platforms that use MIDS-LVT, while accommodating future technologies and capabilities. Improvements such as Link-16 enhanced throughput, Link-16 frequency re-mapping, and programmable crypto will also be realized in the MIDS JTRS design. In addition to the Link-16 and TACAN functionality, MIDS JTRS includes three 2 MHz to 2 GHz programmable channels that allow the warfighter to use multiple waveforms currently in development with the JTRS Joint Waveforms Program Office. Total program requirements include: Terminal development, F/A-18 Level 0 integration, software hosting (Operating Environment/JTRS Joint Waveforms Program Office), Common Link Integration Processing (CLIP) Increment 1 embedding and production transition. The Tactical Targeting Network Technology JTRS Platform Capability Package (TTNT JPCP) involves integration of an advanced low latency, high bandwidth, internet protocol-capable waveform that meets Time Sensitive Targeting Networking Technology requirements. TTNT JPCP program requirements include hardware and software changes, terminal development, qualification, and production transition. The TTNT JPCP is the integration of the TTNT waveform as the specific implementation of the Joint Airborne Networking - Tactical Edge (JAN-TE) waveform.

(DMR)

The Digital Modular Radio (DMR) provides improvements for fleet radio requirements in the HF, VHF, and UHF frequency band. The DMR replaces and will be interoperable and backwards compatible with legacy systems. The DMR is a digital, modular, software programmable, multi-channel, multi-function and multi-band (2MHz-2 GHz) radio system.

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.

R-1 SHOPPING LIST - Item No. 100

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY**	R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS

PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget Submit	79.454	250.766	258.171
FY07 President's Budget	78.036	168.498	1.153
Total Adjustments	-1.418	-82.268	-257.018
Summary of Adjustments			
Nuclear Power Unit Funding Adjustment			0.712
Contractor Support Reduction			0.103
NWCF Civpers Efficiencies			-0.103
Restructure of JTRS program		-80.8	-258.171
Small Business Innovative Research (SBIR)	-1.788		
Federal Technology Transfer Tax	-0.021		
Nuclear Physical Security	0.004		
Trusted Foundry	0.229		
Inflation			1.146
Fuel Price Adjustments			0.003
CIVPERS Pay Raise Rate Change			0.002
Sec. 8026(f): FFRDC		-0.104	
Sec. 8125: Revised Economic Assumptions		-1.142	
Congressional Adds		2.400	
Congressional Action 1% Reduction		-2.622	
Misc. Navy Adjustments	0.219		-0.710
Department of Energy Transfer	-0.061		
	-1.418	-82.268	-257.018

(U) Schedule:

Pre-System Developments & Demonstration contracts awarded to Boeing and Lockheed-Martin on 8 September 2004 for AMF JTRS.
MIDS JTRS Phase 2B core terminal contract awarded December 2004. PDR held August 2005. CDR planned March 2006.
MIDS JTRS Tactical Targeting Network Technology JTRS Platform Capability Package (TTNT JPCP) Phase 2C contract award planned February 2006 to initiate specification development addendums to the existing Functional and Allocated baselines and to conduct initial TTNT JPCP design efforts. Phase 2D contract award planned first quarter FY 207 for complete TTNT JPCP design, development and qualification.

(U) Technical:

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY**	R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS

(U)OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
RDTE, Army PE 0604280A (AMF)			152,696	70,990	91,265	84,347	59,700	Continuing	Continuing
RDTE,Army PE 0604280A (MIDS)			126,794	26,010	4,949				
RDTE, Air Force PE 0604280F (AMF)				70,990	91,265	84,347	59,700	Continuing	Continuing
RDTE, Air Force PE 0604280F (MIDS)				26,010	4,949				
3010 – Ship Tactical Communications - JTRS				0.184	0.305	28.737	100.232	Continuing	Continuing
4A6M - Service Wide Communications				0.367	0.618	0.635	0.650	Continuing	Continuing
PE 0604771D8Z	9.632								
PE 0207446f (Air Force)	9.900								

(U)ACQUISITION STRATEGY:

MID JTRS development will be inititated as a major modification to the MIDS-LVT using an Engineering Change Proposal to the existing production contracts. Development efforts include the Phase 2B core terminal and the Phase 2C/2D Tactical Targeting Network Technology JTRS Platform Capability Package (TTNt JPCP). The U.S. prime contractors from the MIDS-LVT program (Data Link Solutions and ViaSat, Inc.) will cooperatively design and develop the core terminal and TTNT JPCP. Each prime contactor will build and qualify Production Verification Terminals. The U.S. will implement a continuous competition strategy between DLS and ViaSat will be maintained throughout the MIDS JTRS production phase. This strategy was successfully used on MIDS-LVT.

(U)MAJOR PERFORMERS:

Prine Contractors: Data Link Solutions and ViaSat Inc. for MIDS JTRS

(U)METRICS:

Earned Value Mangement (EVM) is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 100

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROJECT NUMBER AND NAME 3073 Airborne, Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS)					
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Project Cost	**54.342**	**87.152**	**0.000**	**284.305**	**270.481**	**197.864**	**97.774**
3073 JTRS Common Development	**52.290**	**77.458**	**0.000**	**284.305**	**270.481**	**197.864**	**97.774**
3073 JTRS Implementation (JTRS-Navy Unique)	**2.052**	**2.123**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
3073 Joint Task Force Wide Area Relay Network (JTF WARNET)	**0.000**	**7.571**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

In FY 2007, Project No. 3073, Airborne, Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS) efforts were transferred from Program Element (PE) 0604280N to PE 0604280A, to support the revised JTRS joint program development acquisition strategy.

In FY08-FY11, Project No. 3073 represents the Navy share (1/3) of the funding associated with all JTRS Development Projects. It includes funding for: AMF JTRS, MIDS JTRS, Ground Mobile Radio JTRS (formerly Cluster 1), Handheld, Manpack, Small Form Fit JTRS Radios (formerly Cluster 5), and the Joint Waveforms Development funding.

JTF WARNET funding currently ends in FY06.

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

In February 2005, Mr. Wynne, Acting USD (AT&L) issued a JTRS Acquisition Decision Memorandum (ADM) directing the realignment of the current acquisition management structure for all JTRS programs under the authority of a single JTRS Joint Program Executive Office (JPEO). The ADM states that any obligation or transfer of RDT&E funds, during the current year of execution, for radio, waveform, and common ancillary equipment development associated with any of the JTRS program elements will require the express approval of the JPEO.

In November 2003, the Navy & Air Force Service Acquisition Executives directed the merger of Clusters 3 (Navy) and 4 (Air Force) to establish a combined JTRS Cluster, renamed Airborne, Maritime/Fixed Station JTRS (AMF JTRS). On January 21, 2004, USD (AT&L) signed an Acquisition Decision Memorandum (ADM) acknowledging the combination of the two clusters, as well as authorizing the release of the Pre-System Development and Demonstration (SDD) Request for Proposal (RFP) for the AMF JTRS program. Funding represents Navy's portion of AMF JTRS.

The Airborne, Maritime/Fixed Station JTRS (AMF JTRS) will be designed to support communications readiness and mission success by providing military commanders with the ability to command, control and communicate with their forces via secure voice, video, and data media forms during all aspects of military operations. The AMF JTRS will be a hardware configurable and software definable radio (SDR) system that provides increased interoperability, flexibility and adaptability to support the varied mission requirements of the warfighter. The AMF JTRS system will provide radio sets that are software definable, multi-band, multi-mode capable, secure, network-centric, and able to provide simultaneous voice, data, and video communications over multiple frequency bands between 2 MegaHertz (MHz) and 2 GigaHertz (GHz), as well as scalable to meet the needs of multiple platforms. As a requirement, the AMF JTRS will operate with legacy equipment and waveforms currently used by civilian and military airborne, surface, subsurface, and fixed station platforms as well as incorporate new waveforms and Cryptographic Equipment Applications (CEAs) as they are developed. As a result of this fielding, legacy radios and cryptographic devices will eventually be phased out through the JTRS implementation effort. This Implementation effort is Navy-specific work being performed as part of the planned migration to transition to the JTRS capability. The Air Force Electronic Systems Center (AF/ESC), PEO C4I and Space, and the Joint Program Executive Office will fulfill the AMF JTRS requirements in a phased approach. Each phase will build on the technological achievements of its predecessor, while at the same time providing expanded capabilities (in both hardware and software). AMF JTRS will incorporate the following key concepts into its design: commonality across JTRS clusters, transformational communications, networking, automation and control, information gateways, and quality of service. The AMF JTRS procurement specifically involves the development of Joint Tactical Radio (JTR) Set and the integration of the Software Communication Architecture (SCA) Compliant waveforms and CEAs provided by the JTRS Joint Waveforms Program Office This procurement also provides for platform integration support necessary for these capabilities to be integrated into the Maritime and Fixed Station platforms through the Service Integration Kits (SIK).

Joint Task Force Wide Area Relay Network Program Enhancement (JTF WARNET) - This program is an NRL initiative that has grown from an Advanced Concept Technology Demonstration(ACTD). This program supports JTRS, CONOPS & Tactics, Techniques and Procedures (TTP) development, incorporates Intra-Battle Group Wireless Network (IBGWN) capabilities, supports ADNS Integration and supports Joint Translator Forwarder (JXF.)

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROJECT NUMBER AND NAME 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
AMF JTRS (Common)	52.290	77.458	0.000
RDT&E Articles Quantity			

FY05: Continued Pre-System Development & Demonstration phase. Began RFP development for the System Development & Demonstration (SDD) phase for the AMF JTRS system. Development engineering and management support for associated JTR system components.

FY06: Complete Pre-System Development & Demonstration phase. Contract award for System Development and Demonstration Phase of development for the AMF JTRS system covering 2 MHz - 2GHz that meets JTRS ORD Joint Service Requirements. Development engineering and management support for associated JTR system components. Engineering and management support for Navy-specific JTRS implementation efforts ($2.230).

FY07: In FY 2007, Project No. 3073, Airborne, Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS) efforts were transferred from Program Element (PE) 0604280N to PE 0604280A, to support the revised JTRS joint program development acquisition strategy.

	FY 05	FY 06	FY 07
JTRS Implementation (Navy Specific)	2.052	2.123	0.000
RDT&E Articles Quantity			

FY05: Engineering and Management support for Navy-specific JTRS implementation efforts.

FY06: Engineering and Management support for Navy-specific JTRS implementation efforts.

FY07: In FY 2007, Project No. 3073, Airborne, Maritime/Fixed Station Joint Tactical Radio System (AMF JTRS) efforts were transferred from Program Element (PE) 0604280N to PE 0604280A, to support the revised JTRS joint program development acquisition strategy.

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROJECT NUMBER AND NAME 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
JTF WARNET	0.000	7.571	0.000
RDT&E Articles Quantity			

FY06: Joint Task Force Wide Area Relay Network Program Enhancement (JTF WARNET) - This program is a Navy Research Lab (NRL) initiative that has grown from an Advanced Concept Technology Demonstration (ACTD). This program supports JTRS, CONOPS & Tactics, Techniques and Procedures (TTP) development, incorporates Intra-Battle Group Wireless Network (IBGWN) capabilities, supports ADNS Integration and supports Joint Translator Forwarder (JXF.)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5** | PROGRAM ELEMENT: PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS | PROJECT NUMBER AND NAME: 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AMF JTRS Development - JTR System (Pre-SDD)	CPFF	The Boeing Company, Anaheim, CA/ Lockheed Martin, Manassas, VA	31.632	37.250	Nov-04	27.279				0.000	96.161	
AMF JTRS Development - JTR SET (SDD)	CPAF/IF	TBD				26.985	07/06			0.000	Continuing**	
MIDS JTRS HW/SW Development	CPIF	DLS Cedar Rapids, IA	8.563									
MIDS JTRS HW/SW Development	CPIF	ViaSat Inc. Carlsbad, CA	2.559									
H/W: DMR HF Power Amplifier	FFP	GDDS	2.800								2.800	
Systems Engineering - AMF JTRS	WX	SSC-SD	3.395	4.419		8.270				0.000	Continuing**	
Systems Engineering - AMF JTRS	WX	SSC-CH	4.951	4.653		7.182				0.000	Continuing**	
Systems Engineering - AMF JTRS	Various	Various	1.943	2.928		3.062				Continuing	Continuing**	
Systems Engineering - JTF WARNET	Various	Various				7.571					7.571	
Systems Engineering - JTRS Implementation -Navy Unique*	Various	Various	2.056	2.052		2.123				Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			57.899	51.302		82.472		0.000		Continuing	Continuing	

Remarks:

* Items marked with an asterisk (*) designate Navy unique tasks.
** Funding for AMF JTRS efforts in FY 2007 and out have been transferred to PE 0604280A.

Development Support											0.000	
Software Dev: DMR Build 6.4	FFP	GDDS	12.861								12.861	
Integrated Logistics Support - AMF JTRS	WX	SSC-CH	1.338	0.803		1.267		0.000		Continuing	Continuing**	
Configuration Management											0.000	
Studies & Analyses	Various	Various	0.356	0.000		0.000		0.000			0.356	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			14.555	0.803		1.267		0.000		0.000	16.625	

Remarks:

R-1 SHOPPING LIST - Item No. 100

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS			PROJECT NUMBER AND NAME 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
DMR Test & Evaluation (FOTE)	WX	SSC-SD	1.724								1.724	
DMR Test & Evaluation (FOTE)	WX	SSC-CH	1.732								1.732	
Test Assets											0.000	
Test Planning/Support - JTRS	Various	Various	0.904	1.003		2.491		0.000		Continuing	Continuing**	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			4.360	1.003		2.491		0.000		Continuing	Continuing	
Remarks: ** Funding for AMF JTRS efforts in FY 2007 and out have been transferred to PE 0604280A.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	various	various	7.342	1.234		0.922		0.000		Continuing	Continuing**	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			7.342	1.234		0.922		0.000		Continuing	Continuing	
Remarks:												
Total Cost			84.156	54.342		87.152		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 100

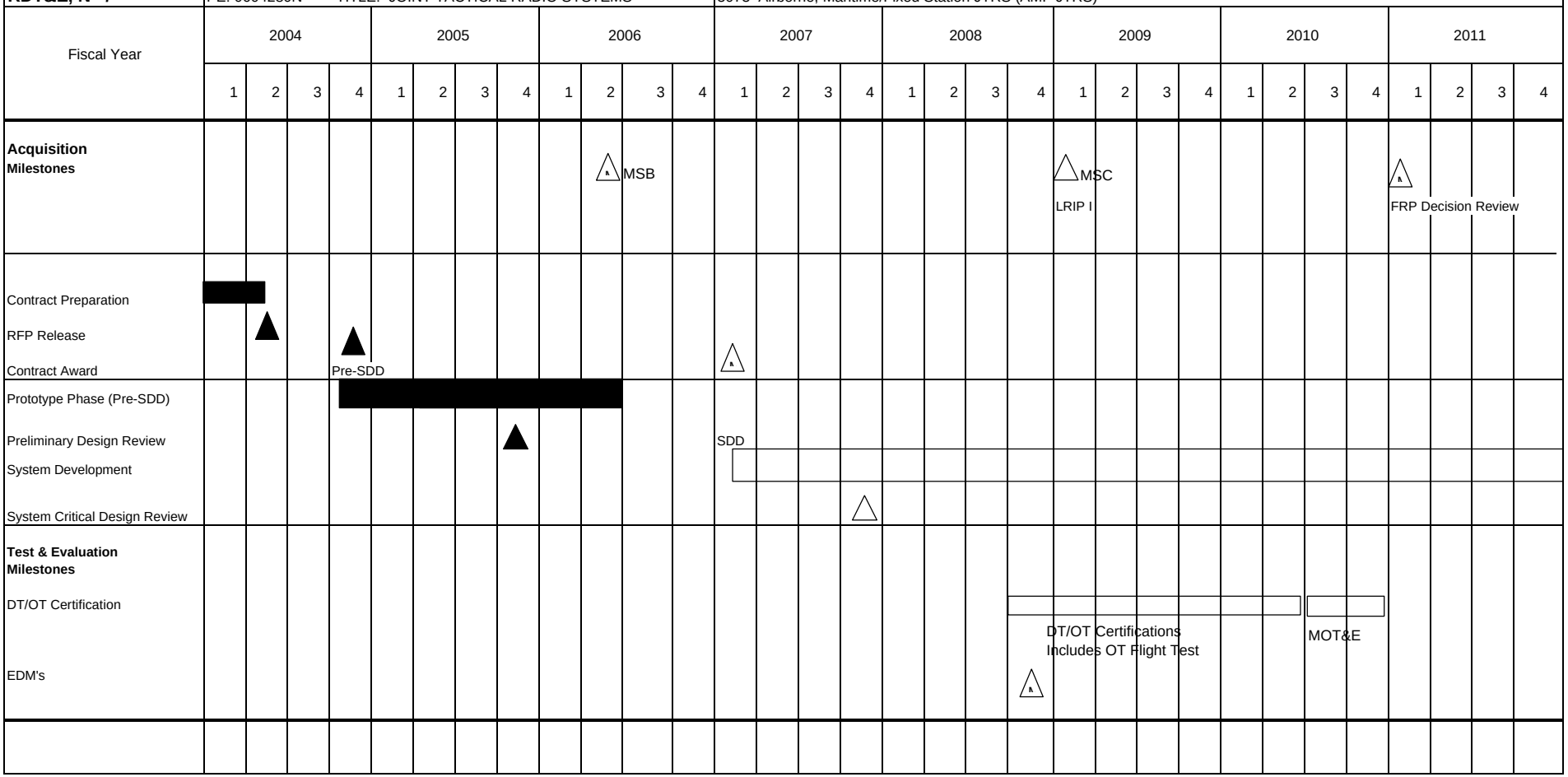
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET A: **RDT&E, N /**

PROGRAM ELEMENT NUMBER AND NAME: PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS

PROJECT NUMBER AND NAME: 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)



R-1 SHOPPING LIST - Item No. 100

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail	**AMF JTRS**			DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADI(			PROJECT NUMBER AND NAME 3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)				
Schedule Profile		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase		4Q							
System Design Review (SDR)									
Milestone B (MS-B)				2Q					
Contract Preparation		1Q							
RFP Release		2Q							
Contract Award Pre-SDD		4Q							
Contract Award SDD					1Q				
Preliminary Design Review (PDR)			4Q						
System Development					1Q				
Critical Design Review (CDR)					4Q				
Quality Design and Build									
Test Readiness Review (TRR)									
DT/OT Certification						4Q			
Eng Dev Model (EDM)						4Q			
Software Delivery 1XXSW									
Preproduction Readiness Review (PRR)									
EDM Radar Delivery - Flt Related									
Milestone C (MS C)							1Q		
Low Rate Initial Production I (LRIP I)							1Q		
Low Rate Initial Production II (LRIP II)									
Contractor Testing									
Operational Testing (OT-IIA)									
Software Delivery 2XXSW									
Operational Testing (OT-II)									
Developmental Testing (DT-IIC)									
Functional Configuration Audit (FCA)									
Low-Rate Initial Production I Delivery									
Technical Evaluation (TECHEVAL)									
Physical Configuration Audit									
Operational Evaluation (OT-II) (OPEVAL)									
Low-Rate Initail Production II Delivery									
Contract Award Production									
IOC									
Full Rate Production (FRP) Decision									1Q
Full Rate Production Start									
First Deployment									

R-1 SHOPPING LIST - Item No. 100

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME 3073 AMF JTRS		
Program Title	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
X3073 Airborne, Maritime/Fixed Station JTRS (AMF JTRS)	0	5.805	0	0	0	0	0

Instructions:

1. For all ACAT 1 programs with RDT&E funding, indicate the funds by year budgeted for termination liability.
2. If not budgeted, provide the appropriate waiver authority.
3. For programs with waiver authority, identify the amounts on the contract by year.

R-1 SHOPPING LIST No. 100

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS			PROJECT NUMBER AND NAME 3020 MIDS JTRS			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Project Cost	**21.794**	**78.946**	**1.153**	**0.000**	**0.000**	**0.000**	**0.000**
X3020 Multifunctional Information Distribution System (MIDS JTRS Common)	**21.794**	**77.056**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
X3020 Multifunctional Information Distribution System (MIDS JTRS Navy Unic	**0.000**	**1.890**	**1.153**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty	**13**		**0**				**13**

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

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 technical objective of the MIDS JTRS program is to transform the current MIDS-LVT into a four-channel, Software Communications Architecture (SCA) compliant JTRS, while maintaining current Link-16 and tactical air navigation system (TACAN) functionality. MIDS gathers data from multiple sources which provides the platform with a digital view of the battlefield. MIDS JTRS is designed to be plug-and-play interchangeable for U.S. Navy and U.S. Air Force platforms that use MIDS-LVT, while accommodating future technologies and capabilities. Improvements such as Link-16 enhanced throughput, Link-16 frequency re-mapping, and programmable crypto will also be realized in the MIDS JTRS design. In addition to the Link-16 and TACAN functionality, the MIDS JTRS core terminal includes three 2 MHz to 2 GHz programmable channels that allow the warfighter to use multiple waveforms currently in development with the JTRS Joint Waveforms Program Office. Total core terminal program requirements include: Terminal development, F/A-18 Level 0 integration, software hosting (Operating Environment/JTRSJoint Waveforms Program Office), Common Link Integration Processing (CLIP) Increment 1 embedding and production transition. MIDS JTRS efforts are comprised of both common and Navy-unique funded efforts. The Tactical Targeting Network Technology JTRS Platform Capability Package (TTNT JPCP) involves integration of an advanced low latency, high bandwidth, internet protocol-capable waveform that meets Time Sensitive Targeting Networking Technology requirements. TTNT JPCP program requirements include hardware and software changes, terminal development, qualification, and production transition. The TTNT JPCP is the integration of the TTNT waveform as the specific implementation of the Joint Airborne Networking - Tactical Edge (JAN-TE) waveform.

R-1 SHOPPING LIST - Item No. 100

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROJECT NUMBER AND NAME 3020 MIDS JTRS

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
MIDS JTRS, Common Funding	21.794	77.056	0.000
RDT&E Articles Quantity	13		

FY05: Completed Phase 2A specification development efforts for the Functional and Allocated baselines incorporating the latest National Security Agency architecture changes. Continued MIDS JTRS Phase 2B development effort and conducted Preliminary Design Review.

FY06: Complete detailed design review and hold Critical Design Review in Mar 06; complete SRU build and test efforts and begin terminal integration and test; and perform software hosting efforts associated with the Cluster 1 Operating Environment and Joint Waveforms Program Office.

FY07: In FY 2007, Project No. 3020 Multifunctional Information Distribution System Joint Tactical Radio System (MIDS JTRS) efforts were transferred from Program Element (PE) 0604280N to PE 0604280A, to support the revised JTRS joint program development acquisition strategy.

	FY 05	FY 06	FY 07
MIDS JTRS, Navy Unique Funding	0.000	1.890	1.153
RDT&E Articles Quantity			

FY06: Start F/A-18 Level 0 integration to include integration preparation, Operational Flight Program changes and Engineering Change Proposal preparation.

FY07: Continue F/A-18 Level 0 integration.

CLASSIFICATION:

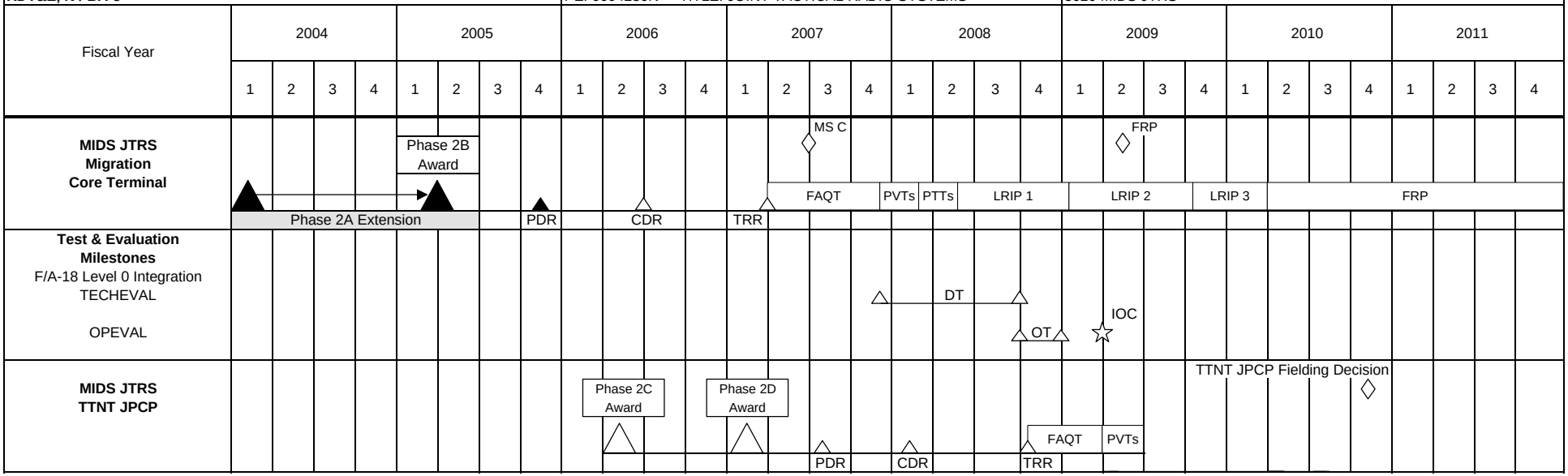
Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS							PROJECT NUMBER AND NAME 3020 MIDS JTRS			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY05 Cost	FY05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MIDS JTRS HW/SW Development (CLIN 3000)	CPIF	Data Link Solutions Cedar Rapids, IA		0.936	Dec-04	31.836	Nov-05	0.000		0.000	32.772	
MIDS JTRS HW/SW Development (CLIN 3000)	CPIF	ViaSat Inc. Carlsbad, CA		11.000	Dec-04	31.925	Nov-05	0.000		0.000	42.925	
MIDS JTRS Software Hosting	CPIF					8.100	Jul-06	0.000		0.000	8.100	
MIDS JTRS Spec. Development (CLIN 1100)	FFP	Data Link Solutions Cedar Rapids, IA		1.383	Feb-05	0.000		0.000		0.000	1.383	
MIDS JTRS Spec. Development (CLIN 1100)	FFP	ViaSat Inc. Carlsbad, CA		0.704	Mar-05	0.000		0.000		0.000	0.704	
MIDS JTRS Proposal Prep (CLIN 3025)	FFP	Data Link Solutions Cedar Rapids, IA		0.600	Mar-05	0.000		0.000		0.000	0.600	
MIDS JTRS Proposal Prep (CLIN 3025)	FFP	ViaSat Inc. Carlsbad, CA		1.774	Mar-05	0.000		0.000		0.000	1.774	
Systems Engineering	various			3.590	Jan-05	3.695	Jan-06	0.000		0.000	7.285	
Systems Engineering	WX	SSC-SD		1.657	Jan-05	1.400	Jan-06	0.000		0.000	3.057	
Subtotal Product Development				21.644		76.956		0.000		0.000	98.600	
Remarks:												
* F/A-18 Level 0 Development Support (Unique)						1.527	Nov-05	1.153	Nov-06	0.000	2.680	
* F/A-18 Level 0 Integrated Logistics Support (Unique)						0.300	Nov-05	0.000		0.000	0.300	
Subtotal Support				0.000		1.827		1.153		0.000	2.980	
Remarks: * Items marked with an asterisk (*) designate Navy unique tasks.												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS							PROJECT NUMBER AND NAME 3020 MIDS JTRS			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY05 Cost	FY05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
* F/A-18 Level 0 Developmental Test & Evaluation (*Unique)						0.063	Nov-05	0.000		0.000	0.063	
Subtotal T&E				0.000		0.063		0.000		0.000	0.063	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel				0.150		0.100		0.000		0.000	0.250	
Transportation												
SBIR Assessment												
Subtotal Management				0.150		0.100		0.000		0.000	0.250	
Remarks: * Items marked with an asterisk (*) designate Navy unique tasks.												
Total Cost				21.794		78.946		1.153		0.000	101.893	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS	PROJECT NUMBER AND NAME 3020 MIDS JTRS	



R-1 SHOPPING LIST - Item No. 100

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME 3020 MIDS JTRS			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MIDS JTRS Migration Core Terminal								
Phase 2A Extension: Specification Development	1Q	3Q						
Phase 2B: Design, Development, Fabrication and Qualification								
System Development		1Q		4Q				
Preliminary Design Review (PDR)		4Q						
Critical Design Review (CDR)			2Q					
Quality Design and Build			2Q	2Q				
Test Readiness Review (TRR)				2Q				
Contractor Testing (FAQT)				2Q, 4Q				
Government Testing				4Q				
Production Verification Terminal Delivery (PVT)				4Q	1Q			
Production Transition Terminal Delivery (PTT)					1Q, 2Q			
Test and Evaluation								
F/A-18 Level 0 Integration								
Technical Evaluation (TECHEVAL)				4Q	4Q			
Operational Evaluation (OPEVAL)					4Q	1Q		
Initial Operating Capability						2Q		
Full Rate Production Decision						2Q		
MIDS JTRS TTNT JPCP								
Phase 2C: Specification Development			2Q	1Q				
Phase 2D: Design, Development, Fabrication and Qualification								
System Development				1Q		1Q		
Preliminary Design Review (PDR)				3Q				
Critical Design Review (CDR)					1Q			
Quality Design and Build					1Q, 4Q			
Test Readiness Review (TRR)					4Q			
Contractor Testing (FAQT)					4Q	1Q		
Government Testing						1Q, 2Q		
Production Verification Terminal Delivery (PVT)						2Q		

R-1 SHOPPING LIST - Item No. 100

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME 3020 MIDS JTRS		
Program Title	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY2010**	**FY2011**
X3020 Multifunctional Information Distribution System (MIDS JTRS)	4,042	5,589	-				

Instructions:

1. For all ACAT 1 programs with RDT&E funding, indicate the funds by year budgeted for termination liability.
2. If not budgeted, provide the appropriate waiver authority.
3. For programs with waiver authority, identify the amounts on the contract by year.

R-1 SHOPPING LIST No. 100

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS			PROJECT NUMBER AND NAME 9999 Congressional Increases			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Project Cost	**1.900**	**2.400**					
9999 Digital Modular Radio (DMR)	**1.900**	**2.400**					

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

The Digital Modular Radio (DMR) provides improvements for fleet radio requirements in the HF, VHF, and UHF frequency band. The DMR replaces and will be interoperable and backwards compatible with legacy systems. The DMR is a digital, modular, software programmable, multi-channel, multi-function and multi-band (2MHz-2 GHz) radio system.

R-1 SHOPPING LIST - Item No. 100

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS	9999 Congressional Increases

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
DMR (9378)	1.900	2.400	
RDT&E Articles Quantity			

FY05: Continued development of software 6.4 to include Ultra High Frequency Satelite Communications (UHF SATCOM) Military Standard (MIL-STD)-188-181B Optional Modes, KG-84C/Over-The-Air-Rekey (OTAR) KG-84A Crypto emulation, Single Channel Ground & Airborne Radio System (SINCGARS) Electronic Remote Fill (ERF) Capability, High Frequency (HF) Transmit/Receive Waveform Capability, Cypher Test/Plain Test Capability, Port to Port Switching Capability. Continue High Frequency Power Amplifier (HFPA) development. ($1.900) **FY06:** Continue development of software 6.4 to include updating the Interactive Electronic Technical Manuals (IETM) to Extensible Markup Language (XML) format required by Deputy Assistant Secretary of Navy-Logistics (DASN-L); support development of Cover Radio Teletype (CRATT) as required by Military Standard (MIL-STD) 110A for UHF and upgrade 6.4 to be

R-1 SHOPPING LIST - Item No. 100

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**	
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 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**1,130.307**	**1,139.993**	**817.528**	**656.837**	**697.041**	**885.407**	**851.458**
2464 / DD(X) System Design, Development and Int	**924.109**	**1,012.194**	**741.779**	**422.802**	**320.706**	**366.114**	**392.191**
2466 / Multi-Function Radar	**12.054**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
2735 / Volume Search Radar	**59.850**	**9.931**	**5.076**	**0.000**	**0.000**	**0.000**	**0.000**
3105 / BLK II Seeker Technology Dev.	**0.000**	**0.000**	**0.000**	**45.940**	**76.531**	**88.887**	**76.699**
3106 / Combat Systems Integration	**0.000**	**0.000**	**14.370**	**37.704**	**64.095**	**126.391**	**92.554**
3107 / CG (X) Development	**0.000**	**29.658**	**9.282**	**102.577**	**187.069**	**254.605**	**239.731**
4009 / Advanced Gun System (AGS)	**61.528**	**46.110**	**47.021**	**47.814**	**48.640**	**49.410**	**50.283**
4010 / Integrated Power System (IPS)*	**62.679**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9376 / Alternative Engine	**9.124**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9554 / Naval Smartship	**0.963**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9999/ Undistributed RDTE,N Congressional Adds	**0.000**	**42.100**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Program Element (PE) provides funds for development of the DD(X) Class of U. S. Navy surface combatants and CG(X) future cruiser development. 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. CG(X) development efforts will mature the CG(X) design through Milestone B.

The following Congressional adds are contained in this Program Element:

FY05 Congressional Adds:

-**Alternative Engine.** Provides a system alternative for the lead ship power solution and will further enhance the GE engine design.

-**Naval Smartship.** Funds development of a synthetic environment to simulate the effects of insertion of technology and/or new business processes where the crew is removed from a ship.

FY06 Congressional Adds:

-Project 9999-Congressional Adds:$42.100- This project consists of the following FY 06 Congressional adds:Naval smartships, Wireless maritime inspection system, Floating area network, Permanent magnet motor, and CG(X) System Concept and design.

***FY05 Supplemental funding: $5M provided for Permanent Magnet Motor**

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2464 - DD(X) System Design, Development & Integration		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**924.109**	**1,012.194**	**741.779**	**422.802**	**320.706**	**366.114**	**392.191**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses DD(X) Phase IV development efforts required to deliver the Flight I DD(X) Class Ships. Major efforts include software requirements analysis, architectural and design code and unit testing, integration, qualification testing, and Independent Verification and Validation (IV&V) for software releases 4-6; continued hullform testing at NSWC-CD; conducting testing communication and sensor aperature cosite and electromagnetic interferance risk reductions testing for critical arrays; planning for IPS and ship control system testing and integration and tomahawk restrained firing test.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2464 - DD(X) System Design, Development & Integration

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	841.314	81.400	0.000
RDT&E Articles Quantity			

In FY05, efforts included construction and testing of the following Engineering Development Models (EDMs): hullform, Infrared mock-up, integrated deckhouse and apertures, total ship computing enviornment, integrated undersea warfare system, peripheral vertical launching system, automatic fire suppression system, the development and certification of software releases 2 and 3; a program level Critical Design Review (CDR); and preparation for a Milestone B decision. In FY06, conduct MFR at-sea testing and continue S-Band Radar development, integration and testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	721.733	604.896
RDT&E Articles Quantity			

Development of the DD(X) Flight I software, COTS/GOTS software acquisition, code and unit testing, integration, qualification testing, and Independent Verification and Validation (IV&V). Development of a total system software architecture that defines the relationships and interfaces among the software segments, elements, components, and/or configuration items. Conduct the following events for the remaining software releases: Software Specification Review (S-SSR), Software Preliminary Design Review (S-PDR), Software Critical Design Review (S-CDR), Software Integration Readiness Review (SIRR), Test Readiness Review (TRR) and Software Certification Panel (SCP). Conduct all developmental software test planning, conduct, test data analysis and reporting in accordance with the DD(X) TEMP. Perform total ship system design analysis. Perform systems engineering, develop, and fully integrate into the DD(X) System an ES system for DD(X). Develop, implement, and qualify a system to to provide missile inertial mid-course guidance using Pre-Planned Product Improvement (P3I) uplink and terminal missile guidance using Interrupted Continuous Wave Illumination (ICWI). Systems engineering and development of an Anti-Tamper (AT) protection plan for DD(X).

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	209.061	136.883
RDT&E Articles Quantity			

Completion and testing of ship and warfare system engineering development models. Complete hullform testing at NSWC-Carderock. Planning for IPS and ship control system (SCS) testing and integration at NSWC-Philadelphia. Conduct communication and sense aperture cosite and electromagnetic interference risk reduction testing for critical arrays at the Wallops Island Test Facility. Conduct Tomahawk restrained firing test to verify Advanced Vertical Launching System (AVLS) protection measures. Conduct developmental testing and operation evaluation in accordance with TEMP. Conduct Live Fire Testing & vulnerability analysis in accordance with TEMP.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2464 - DD(X) System Design, Development & Integration

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	10.436	0.000	0.000
RDT&E Articles Quantity			

Continued identification and risk mitigation efforts in high risk areas such as Manning, Life Cycle Engineering and Support (LCE&S), and Total Ship Computing. Continued Manning/Human Systems Integration (HSI) and LCE&S Integrated Product Teams (IPTs) to address the impact to the future Navy support infrastructure in these functional areas. Monitored the industry-developed risk watch list and evaluated as a mechanism for reporting risk metrics in DD(X) Aquisition reporting documentation. Reviewed and developed proposed policy changes as a result of how DD(X) will impact Navy manning and life cycle support structure. Established Executive Steering Groups to review/ monitor specific Phase III technology development focus areas: Integrated Power System (IPS) and propulsion, Radar Suite and Software.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	54.934	0.000	0.000
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 reviewed and certified the DD(X) Design Agent software development. This task concluded with contract Phase III in FY05.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	17.425	0.000	0.000
RDT&E Articles Quantity			

The DD(X) LFT&E Program focused on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapons Threat Effects. These areas addressed 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 FY05, Completed the Vulnerability Assessment Report (VAR) for the DD(X) Phase III prior to the DD(X) CDR.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2464 - DD(X) System Design, Development & Integration

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	978.846	1,027.787	741.974
FY 2007 President's Budget:	924.109	1,012.194	741.779
Total Adjustments	-54.737	-15.593	-0.195
Summary of Adjustments			
Rescissions		-10.746	
Inflation			3.294
Other General Provisions	-24.486	-4.847	-3.110
Warfare Center Rates			-0.436
Fuel Rates			0.057
Programmatic Changes	-30.251		
Subtotal	-54.737	-15.593	-0.195

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2464 - DD(X) System Design, Development & Integration

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
PE 0603513N / Shipboard Sys Component Dev	44.282	50.918	14.135	16.686	16.828	16.983	17.161	CONT	CONT
BLI 211900 / SCN	304.048	706.086	2,568.111	3,054.938	2,607.342	2,701.352	2,308.481	CONT	CONT

E. ACQUISITION STRATEGY:

DD(X) Phase IV includes the continuation of warfare system development, integration and testing from Phase III, as well as ship detail design and construction. The Navy intends to award contracts to BIW and NGSS for detail design and construction of a lead ship at each yard. It is planned that the Phase IV detail design will be contracted for on a Cost Plus Award Fee (CPAF) basis, and that ship construction efforts for the lead ships will be on a Cost Plus Incentive Fee (CPIF) basis with additional performance incentives. The Acquisition Strategy Report (ASR) reflecting the dual lead ship strategy was approved at the DD(X) Milestone B decision in November 2005.

F. MAJOR PERFORMERS:

Major Contractors - Raytheon, Lockheed Martin, BAE, Northrop Grumman Ship Systems, BIW
Government Field Activities - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme
Universities - John Hopkins University, Applied Physics Lab (APL/JHU)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 2464 - DD(X) System Design, Development & Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	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	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	139.919
Primary H/W Development- Phase III	CPAF	DD(X) Design Agent (NGSS)	1,305.071	822.623	N/A	123.700	1QFY06	0.000	N/A	0.000	2,251.394	2,251.394
Ship Integration Development Phase IV	CPAF	DD(X) Dev & Test (Raytheon)				670.000	1QFY06	665.000	1QFY07	CONT.	CONT.	
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1,499.790	822.623		793.700		665.000		CONT.	CONT.	2,446.113

Remarks: (1) The Navy awarded letter contracts to Raytheon on 25 May 05 and UDLP 23 May 05 to continue DD(X) development in accordance with the Acquisition Decision Memorandum signed on 20 April 05.

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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

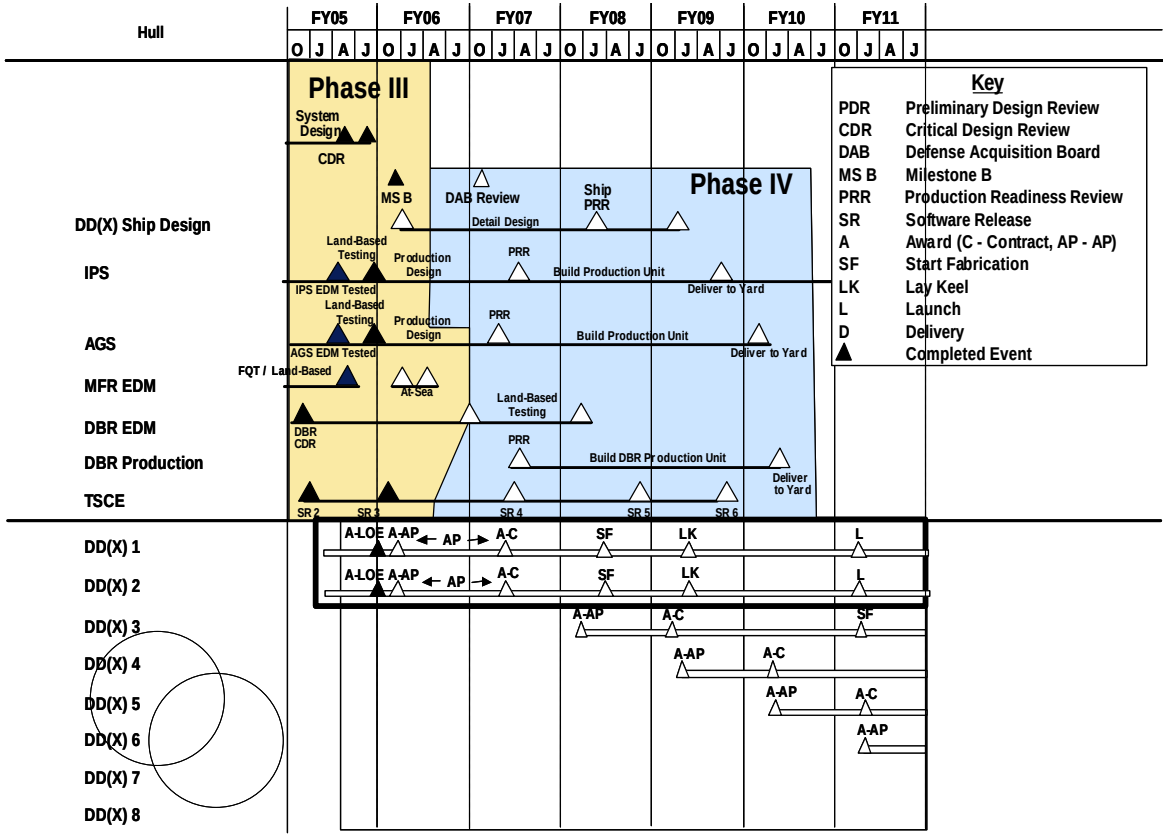
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2464 - DD(X) System Design, Development & Integration

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	0.000	4.875	4.875
Live Fire Test & Evaluation	CPAF	DD(X) Design Agent	4.100	41.700	1QFY05	0.000	N/A	0.000	N/A	0.000	45.800	45.800
Live Fire Test & Evaluation	CPAF	Raytheon	0.000	0.000	N/A	27.100	1QFY06	41.000	1QFY07	CONT	CONT	
Live Fire Test & Evaluation	WR	NSWC CD Bethesda MD	22.733	0.000	N/A	0.000	N/A	0.000	N/A	0.000	22.733	
Live Fire Test & Evaluation	WR	NSWC DD Dahlgren VA	3.400	0.000	N/A	0.000	N/A	0.000	N/A	0.000	3.400	
Live Fire Test & Evaluation	Various	Various	16.176	4.200	1QFY05	12.000	1QFY06	0.000	N/A	CONT	CONT	
GFE												
Award Fees												
Subtotal T&E			51.284	45.900		39.100		41.000		CONT	CONT	50.675
Remarks:												
Contractor Engineering Support	GSA/FFP	Anteon Arlington VA	25.397	0.000	N/A	0.000	N/A	0.000	N/A	0.000	25.397	
	GSA	GRCI, Falls Church VA	8.361	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.361	
	CPAF	Seaport, NAVSEA	0.000	7.080	1QFY05	18.500	1QFY06	3.000	1QFY07	CONT	CONT	
	Misc	Various	9.999	2.565	1QFY05	10.400	1QFY06	0.000	1QFY07	CONT	CONT	
Government Engineering Support	WR	NSWC DD Dahlgren VA	65.374	12.076	1QFY05	28.600	1QFY06	10.200	1QFY07	CONT	CONT	
	WR	NSWC CD Bethesda MD	36.848	13.247	1QFY05	25.000	1QFY06	8.100	1QFY07	CONT	CONT	
	WR	NSWC CR Crane IN	5.325	0.576	1QFY05	7.650	1QFY06	3.000	1QFY07	CONT	CONT	
	WR	NSWC PHD Pt Hueneme CA	9.096	1.349	1QFY05	18.650	1QFY06	4.000	1QFY07	CONT	CONT	
	WR	SSCSD Dan Diego CA	8.257	1.185	1QFY05	8.690	1QFY06	1.500	1QFY07	CONT	CONT	
	WR	NUWC/N Newport RI	5.525	1.025	1QFY05	9.500	1QFY06	1.000	1QFY07	CONT	CONT	
	WR	NSWC/PC Panama City, FL	2.132	0.895	1QFY05	10.600	1QFY06	0.000	1QFY07	CONT	CONT	
	Various	Other Govt Activities	13.842	5.019	1QFY05	20.000	1QFY06	0.000	1QFY07	CONT	CONT	
Program Management Support	Various	Various	15.488	3.154	1QFY05	10.107	1QFY06	0.000	1QFY07	CONT	CONT	
Travel	Various	Various	3.112	0.800	Various	1.500	1QFY06	0.779	1QFY07	CONT	CONT	
Labor (Research Personnel)	CPFF	APL/JHU Laurel MD	18.514	6.615	1QFY05	10.197	1QFY06	4.200	1QFY07	CONT	CONT	
SBIR Assessment	Various	Various										
Subtotal Management			227.270	55.586		179.394		35.779		CONT	CONT	
Remarks:												
Total Cost			1,778.344	924.109		1,012.194		741.779		CONT.	CONT.	2,496.788
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2464 - DD(X) System Design, Development & Integration



CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineerin			PROJECT NUMBER AND NAME 2464 - DD(X) System Design, Development & Integration			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B		1Q					
Critical Design Review	4Q						
Software Release SR3		1Q					
Software Release SR4			3Q				
Software Release SR5				4Q			
Software Release SR6					4Q		

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2466 - Multi-Function Radar (MFR)		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**12.054**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty							

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 was delivered to Wallops Island in FY 03 to support Developmental Test/Operational Assessment (DT/OA) land-based and at-sea testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2466 - Multi-Function Radar (MFR)

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	7.588	0.000	0.000
RDT&E Articles Quantity			

Government Engineering Services and Program Management support for Engineering & Manufacturing Development (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. Provide support for integration of MFR into the DD(X) radar suite and overall ship systems. Provide engineering support for transition of MFR EDM to the MFR production system for DD(X).

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.936	0.000	0.000
RDT&E Articles Quantity			

Evaluation, planning, documentation, scheduling and conducting of Developmental Test / Operational Assessment. Hardware / Software updates resulting from DT/OA. Complete Navy Land Based Testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.530	0.000	0.000
RDT&E Articles Quantity			

Provide Program Management in support of the above milestones.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2466 - Multi-Function Radar (MFR)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	12.164	0.000	0.000
FY 2007 President's Budget:	12.054	0.000	0.000
Total Adjustments	-0.110	0.000	0.000
Summary of Adjustments			
Other General Provisions	-0.110		
Subtotal	-0.110	0.000	0.000

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2466 - Multi-Function Radar (MFR)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
PE 0603513N / Shipboard Sys Component Dev	44.282	50.918	14.135	16.686	16.828	16.983	17.161	CONT	CONT
BLI 211900 / SCN	304.048	706.086	2,568.111	3,054.938	2,607.342	2,701.352	2,308.481	CONT	CONT

E. ACQUISITION STRATEGY:

DD(X) Phase IV includes the continuation of warfare system development, integration and testing from Phase III, as well as ship detail design and construction. The Navy intends to award contracts to BIW and NGSS for detail design and construction of a lead ship at each yard. It is planned that the Phase IV detail design will be contracted for on a Cost Plus Award Fee (CPAF) basis, and that ship construction efforts for the lead ships will be on a Cost Plus Incentive Fee (CPIF) basis with additional performance incentives. The Acquisition Strategy Report (ASR) reflecting the dual lead ship strategy was approved at the DD(X) Milestone B decision in November 2005.

F. MAJOR PERFORMERS:

DD(X) Design Agent - Northrop Grumman Ship Systems
Major Subcontractors - Raytheon
Government Field Activities -
Universities -

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2466 - Multi-Function Radar (MFR)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF/IF	Prime E&MD (Raytheon)	197.153	0.000	N/A	0.000	N/A	0.000	N/A	0.000	197.153	197.153
	CPAF	DD(X) Design Agent	24.579	0.000	N/A	0.000	N/A	0.000	N/A	0.000	24.579	24.579
	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			234.146	0.000		0.000		0.000		0.000	234.146	234.146
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	

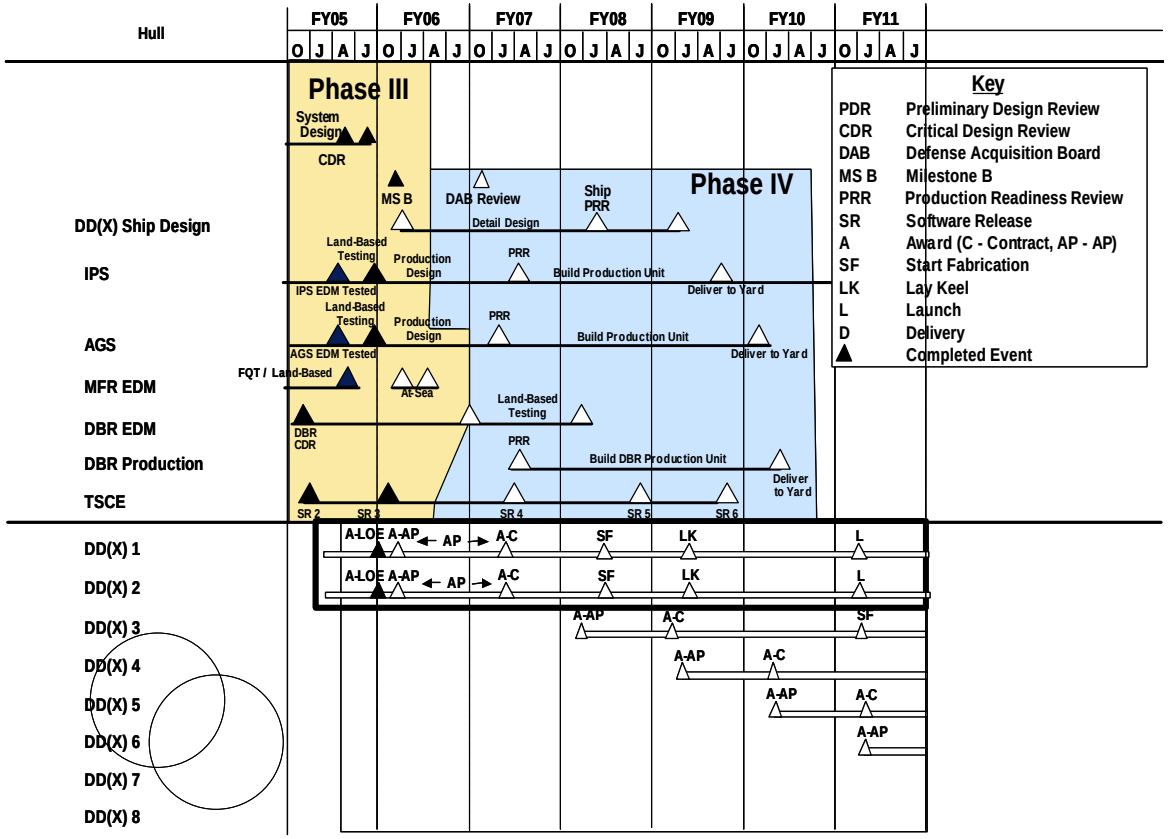
Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2466 - Multi-Function Radar (MFR)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	11.661	0.000	N/A	0.000	N/A	0.000	N/A	0.000	11.661	
	CPAF	SCSC Wallops Island VA	3.544	1.375	11/04	0.000	N/A	0.000	N/A	0.000	4.919	4.919
	SS/CPFF	JHU/APL Laurel MD	3.006	0.080	11/04	0.000	N/A	0.000	N/A	0.000	3.086	
	WX	NSWC PHD Pt Hueneme CA	3.100	0.976	11/04	0.000	N/A	0.000	N/A	0.000	4.076	
	WX	NSWC DD Dahlgren VA	2.941	0.434	11/04	0.000	N/A	0.000	N/A	0.000	3.375	
	WR/RC	NAWC Pt Mugu CA	1.921	0.000	N/A	0.000	N/A	0.000	N/A	0.000	1.921	
	WX/RX	NWSC Corona CA		0.080	11/04	0.000	N/A	0.000	N/A	0.000	0.080	
Subtotal T&E			26.173	2.945		0.000		0.000		0.000	29.118	4.919
Remarks:												
Contractor Engineering Support												
Government Engineering Support	WR	NSWC DD Dahlgren VA	7.077	2.206	11/04	0.000	N/A	0.000	N/A	0.000	9.283	
	WR	NSWC PHD Pt Hueneme CA	4.164	1.169	11/04	0.000	N/A	0.000	N/A	0.000	5.333	
	SS/CPFF	APL/JHU Laurel MD	3.672	1.680	11/04	0.000	N/A	0.000	N/A	0.000	5.352	
	WR	Various	10.907	2.524	11/04	0.000	N/A	0.000	N/A	0.000	13.431	
Program Management Support	C/CPFF	Various	6.906	1.530	11/04	0.000	N/A	0.000	N/A	0.000	8.436	
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			32.726	9.109		0.000		0.000		0.000	41.835	
Remarks:												
Total Cost			293.045	12.054		0.000		0.000		0.000	305.099	239.065
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2466 - Multi-Function Radar (MFR)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2466 - Multi-Function Radar (MFR)		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Factory Qualification Testing (FQT)/Land Based Testing	3Q						
At-Sea		2Q-3Q					

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**59.850**	**9.931**	**5.076**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty		**1**					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project provides funds for the development of the S-Band 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 tracking abilities, 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 06 to support Developmental Test/Operational Assessment (DT/OA) land-based and at-sea testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	PE 0604300N - DD(X) Total Ship Systems Engineering	2735 - Volume Search Radar (VSR)

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	57.715	6.300	1.818
RDT&E Articles Quantity			

In Phase III, DD(X) Design Agent finalized S-Band VSR design and procurement Engineering Development Model (EDM) hardware and began fabrication. Also began test and evaluation planning. In FY06, delivery of EDM to Wallops to conduct VSR Factory Qualification Testing and prepare for Land Based Testing in FY07.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.135	3.631	2.658
RDT&E Articles Quantity			

Government Engineering Services and Program Management support for Engineering and Manufacturing Development (E&MD). Perform oversight and assessment of VSR E&MD efforts including Test and Evaluation. Support VSR Land Based Testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.600
RDT&E Articles Quantity			

Provide Program Management in support of the above milestones.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2735 - Volume Search Radar (VSR)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	57.118	10.082	5.071
FY 2007 President's Budget:	59.850	9.931	5.076
Total Adjustments	2.732	-0.151	0.005
Summary of Adjustments			
Rescission		-0.105	
Inflation			0.023
Other General Provisions	-1.436	-0.046	-0.018
Programmatic Changes	4.168	0.000	
Subtotal	2.732	-0.151	0.005

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	2735 - Volume Search Radar (VSR)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
PE 0603513N / Shipboard Sys Component Dev	44.282	50.918	14.135	16.686	16.828	16.983	17.161	CONT	CONT
BLI 211900 / SCN	304.048	706.086	2,568.111	3,054.938	2,607.342	2,701.352	2,308.481	CONT	CONT

E. ACQUISITION STRATEGY:

DD(X) Phase IV includes the continuation of warfare system development, integration and testing from Phase III, as well as ship detail design and construction. The Navy intends to award contracts to BIW and NGSS for detail design and construction of a lead ship at each yard. It is planned that the Phase IV detail design will be contracted for on a Cost Plus Award Fee (CPAF) basis, and that ship construction efforts for the lead ships will be on a Cost Plus Incentive Fee (CPIF) basis with additional performance incentives. The Acquisition Strategy Report (ASR) reflecting the dual lead ship strategy was approved at the DD(X) Milestone B decision in November 2005.

F. MAJOR PERFORMERS:

DD(X) Design Agent - Northrop Grumman Ship Systems
Major Subcontractors - Raytheon, Lockheed Martin
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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering						PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	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	50.000
	CPAF	DD(X) Design Agent (NGSS)	118.071	57.715	1QFY05	6.300	1QFY06	0.000	N/A	0.000	182.086	182.064
	CPAF	Raytheon (Bridge)	0.000	0.000	N/A	0.000	N/A	1.800	1QFY07	0.000	1.800	1.800
Ship Integration	CPAF	Lockheed Martin SBAR N00024-02-C-5321	6.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	6.000	6.000
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			174.071	57.715		6.300		1.800		0.000	239.886	239.886
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:

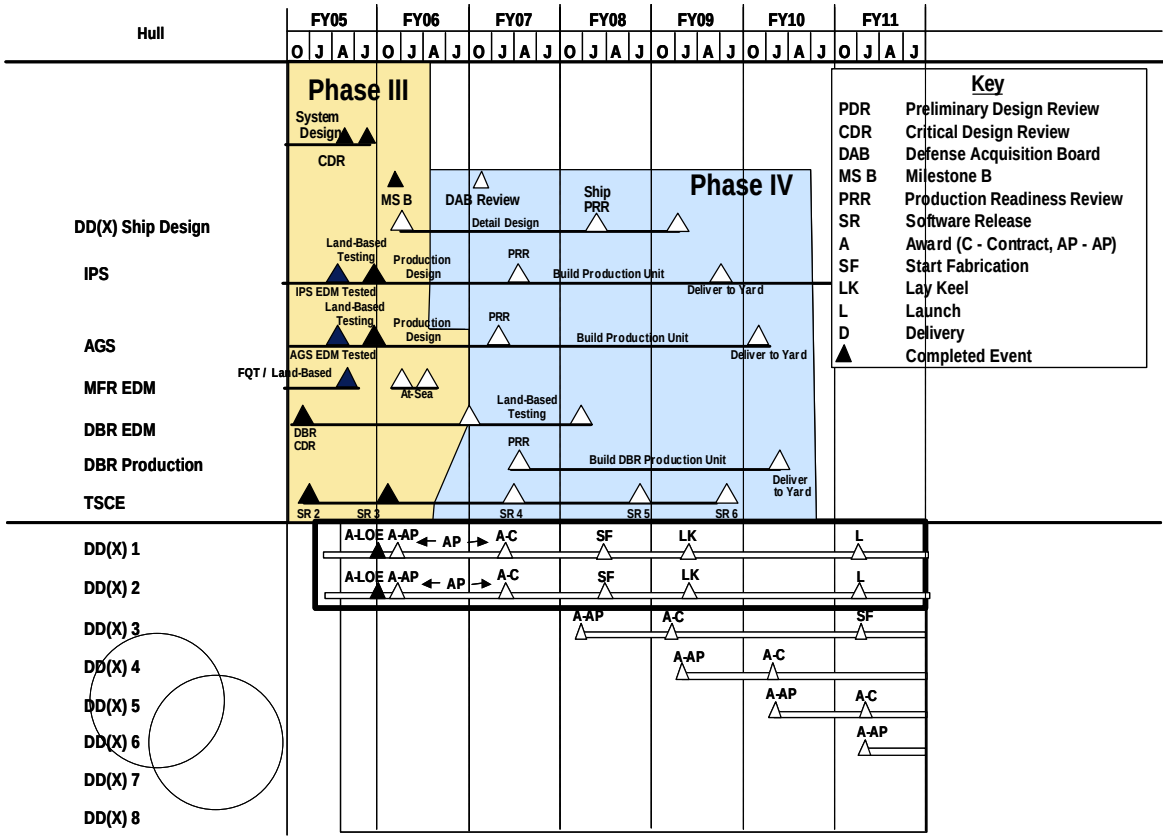
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	0.600
	Various	Various	0.497	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.497	
Subtotal T&E			1.097	0.000		0.000		0.000		0.000	1.097	0.600
Remarks:												
Contractor Engineering Support												
Government Engineering Support	WX	NSWC DD Dahlgren VA	3.706	0.000	N/A	0.800	N/A	0.818	11/06	0.000	5.324	
	WX	NSWC PHD Pt Hueneme CA	1.630	0.000	N/A	0.300	N/A	0.300	11/06	0.000	2.230	
	WX	Various	13.107	2.135	11/04	1.931	N/A	1.558	11/06	0.000	18.731	
Program Management Support	CPFF	Various	2.873	0.000	N/A	0.600	N/A	0.600	11/06	0.000	4.073	
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			21.316	2.135		3.631		3.276		0.000	30.358	
Remarks:												
Total Cost			196.484	59.850		9.931		5.076		0.000	271.341	240.486
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DBR CDR	1Q						
Land-Based Testing			1Q-4Q	1Q			

R-1 SHOPPING LIST - Item No. 101

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3106 - Combat Systems Integration		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**0.000**	**14.370**	**37.704**	**64.095**	**126.391**	**92.554**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CG(X), the future cruiser, will focus on providing the Air and Missile Defense capabilities as part of the 21st Century family of surface combatants. CG(X) will replace the aging CG-47 class as they reach the end of their 35 year service life.

This project encompasses efforts for the integration of communications, electronics, command and control, weapons, surveillance and shipboard systems and combat system computer programs into the CG(X) class combat system. These integration efforts include systems engineering, analysis, computer program development/modification, interface design, technical documentation, combat system test site development and system testing to ensure fully functional combat sytems integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	PE 0604300N - DD(X) Total Ship Systems Engineering	3106 - Combat Systems Integration

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	8.650
RDT&E Articles Quantity			

FY07: Commence system integration requirements studies and assess DD(X) combat system component applicability to CG(X).

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.440
RDT&E Articles Quantity			

FY07: Establish Technical Team responsible for participation, oversight and monitoring of system integration effort.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.280
RDT&E Articles Quantity			

FY07: Conduct Milestone A preparations, to include contract solicitation development for systems integration efforts.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	3106 - Combat Systems Integration

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	0.000	0.000	50.349
FY 2007 President's Budget:	0.000	0.000	14.370
Total Adjustments	0.000	0.000	-35.979
Summary of Adjustments			
Inflation			0.167
Other General Provisions			-2.487
Warfare Center Rates			-0.001
Programmatic Changes			-33.658
Subtotal	0.000	0.000	-35.979

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	3106 - Combat Systems Integration

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 211400 / SCN	0.000	0.000	0.000	0.000	0.000	0.000	3,234.957	CONT	CONT

E. ACQUISITION STRATEGY:

TBD

F. MAJOR PERFORMERS:

Contractors - TBD
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NSWC Corona, NSWC Carderock
Universities - JHU/APL

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: **February 2006**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**							PROJECT NUMBER AND NAME 3106 - Combat Systems Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
											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	
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:												

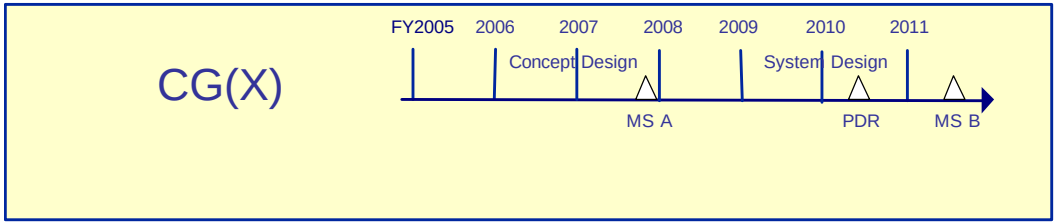
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: **February 2006**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**							PROJECT NUMBER AND NAME 3106 - Combat Systems Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	TBD	TBD						3.592	1QFY07	CONT	CONT	
										CONT	CONT	
Government Engineering Support	TBD	TBD						10.778	1QFY07	CONT	CONT	
										CONT	CONT	
										CONT	CONT	
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		14.370		CONT	CONT	
Remarks:												
Total Cost			0.000	0.000		0.000		14.370		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	3106 - Combat Systems Integration



R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3106 - Combat Systems Integration			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone A			4Q	1Q				
Preliminary Design Review						1Q-3Q		
Milestone B							4Q	

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3107 - CG (X) Development		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**29.658**	**9.282**	**102.577**	**187.069**	**254.605**	**239.731**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CG(X), the future cruiser, will focus on providing the Air and Missile Defense capabilities as part of the 21st Century family of surface combatants. CG(X) will replace the aging CG-47 class as they reach the end of their 35 year service life.

This project encompasses efforts for total ship system development and integration of Hull, Mechnical and Electrical (HM&E) and shipboard systems into the CG(X) class. These engineering development and integration efforts include systems engineering, analysis, computer program development, interface design, Engineering Development Models (EDMs), technical documentation and system testing to ensure a fully functional CG(X) system design. This project will mature the CG(X) design through several ship design cycles and baselines. Preparation and execution of a program level Preliminary Design Review (PDR) and Critical Design Reveiw (CDR) will occur through these efforts.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	PE 0604300N - DD(X) Total Ship Systems Engineering	3107 - CG (X) Development

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	14.500	2.000
RDT&E Articles Quantity			

FY06: Support the Maritime Air and Missile Defense of the Joint Forces (MAMDJF) Initial Capabilities Document (ICD) review to gain final Joint Requirements Oversight Council (JROC) approval. Conduct the Integrating Integrated Product Team (IIPT) and Overarching Integrated Product Team (OIPT) events in support of the Acquisition Decision Memorandum (ADM) for the AoA. Plan and begin execution of the Analysis of Alternatives effort. FY07: Complete the AoA and brief results to the Defense Acquisition Executive (DAE).

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	6.500	1.500
RDT&E Articles Quantity			

FY06: Conduct Concept Design model development and upgrades. Conduct CG(X) technology assessment.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	8.658	5.782
RDT&E Articles Quantity			

Execute Milestone A preparation and acquisition strategy development.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	3107 - CG (X) Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	0.000	30.110	60.035
FY 2007 President's Budget:	0.000	29.658	9.282
Total Adjustments	0.000	-0.452	-50.753
Summary of Adjustments			
Rescission		-0.315	
Inflation			0.156
Other General Provisions		-0.137	-3.948
Programmatic Changes		0.000	-46.961
Subtotal	0.000	-0.452	-50.753

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	3107 - CG (X) Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 211400 / SCN	0.000	0.000	0.000	0.000	0.000	0.000	3,234.957	CONT	CONT

E. ACQUISITION STRATEGY:

TBD

F. MAJOR PERFORMERS:

Contractors - TBD
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NSWC Corona, NSWC Carderock
Universities - JHU/APL

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3107 - CG (X) Development				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											CONT	
											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	
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:												

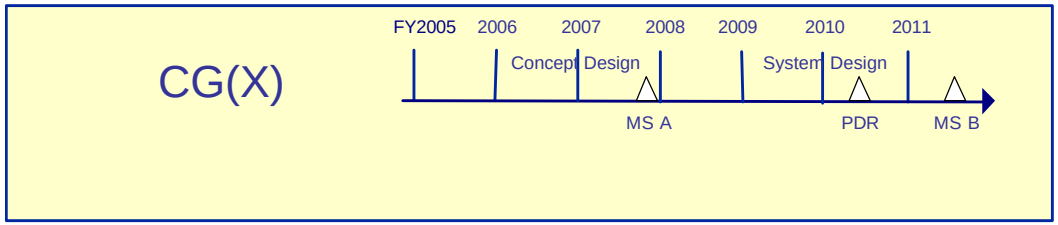
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3107 - CG (X) Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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		TBD				7.415	2QFY06	2.321	1QFY07	CONT	CONT	
										CONT	CONT	
Government Engineering Support		TBD				22.244	2QFY06	6.962	1QFY07	CONT	CONT	
										CONT	CONT	
										CONT	CONT	
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		29.658		9.282		CONT	CONT	
Remarks:												
Total Cost			0.000	0.000		29.658		9.282		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3107 - CG (X) Development



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 3107 - CG (X) Development			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone A			4Q					
Preliminary Design Review						1Q-3Q		
Milestone B							4Q	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**61.528**	**46.110**	**47.021**	**47.814**	**48.640**	**49.410**	**50.283**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

These funds provide for the development of the Advanced Gun System (AGS) and the development and qualification of the Long Range Attack Projectile (LRLAP) 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 10 rounds per minute) with a magazine capacity sufficient in size for meeting USMC operational requirements. LRLAP will be stored throughout its life cycle in an 8 round pallet which is handled by the AGS magazine. By palletizing the munition, AGS is able to significantly reduce manning and improve munition reliability, safety and resupply. The LRLAP EDM guided flight tests began in Dec 2004 and will be followed by final System Design and Development and qualification testing through 2010. The Long Range Land Attack Projectile (LRLAP) fired from AGS has a range of approximately 83 nautical miles and will deliver a high explosive unitary payload with GPS accuracy.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	PE 0604300N - DD(X) Total Ship Systems Engineering	4009 - Advanced Gun System (AGS)

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	20.365	0.000	0.000
RDT&E Articles Quantity			

Continued LRLAP EDM development and testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	12.334	0.000	0.000
RDT&E Articles Quantity			

Commenced Land Based testing of AGS EDM.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	23.639	0.000	0.000
RDT&E Articles Quantity			

Commenced integration of Gun, Magazine, ISC EDMs.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	4009 - Advanced Gun System (AGS)

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.037	2.388
RDT&E Articles Quantity			

AGS Qualification

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.190	40.410	35.764
RDT&E Articles Quantity			

LRLAP System Design and Development.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	4.663	8.869
RDT&E Articles Quantity			

LRLAP Qualification and Development testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	4009 - Advanced Gun System (AGS)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	45.951	46.812	47.003
FY 2007 President's Budget:	61.528	46.110	47.021
Total Adjustments	15.577	-0.702	0.018
Summary of Adjustments			
Rescission		-0.489	
Inflation			0.209
Other General Provisions	-1.123	-0.213	-0.171
Warfare Center Rates			-0.020
Programmatic Changes	16.700		
Subtotal	15.577	-0.702	0.018

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	4009 - Advanced Gun System (AGS)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
PE 0603513N / Shipboard Sys Component Dev	44.282	50.918	14.135	16.686	16.828	16.983	17.161	CONT	CONT
BLI 211900 / SCN	304.048	706.086	2,568.111	3,054.938	2,607.342	2,701.352	2,308.481	CONT	CONT

E. ACQUISITION STRATEGY:

DD(X) Phase IV includes the continuation of warfare system development, integration and testing from Phase III, as well as ship detail design and construction. The Navy intends to award contracts to BIW and NGSS for detail design and construction of a lead ship at each yard. It is planned that the Phase IV detail design will be contracted for on a Cost Plus Award Fee (CPAF) basis, and that ship construction efforts for the lead ships will be on a Cost Plus Incentive Fee (CPIF) basis with additional performance incentives. The Acquisition Strategy Report (ASR) reflecting the dual lead ship strategy was approved at the DD(X) Milestone B decision in November 2005.

F. MAJOR PERFORMERS:

Major Contractors- BAE Systems, Lockheed Martin and Northrop Grumman Ship Systems
Field Activities - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme, NSWC Port Hueneme Louisville detachment, NSWC Indian Head
Universities - N/A

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (2)	FY 07 Cost	FY 07 Award Date (2)	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	DD(X) Design Agent	201.235	41.449	1QFY05	0.000	N/A	0.000	N/A	0.000	242.684	242.684
	845/804	DD(X) Industry Teams	177.435	0.000	N/A	0.000	N/A	0.000	N/A	0.000	177.435	177.435
	CPAF	BAE/Lockheed Martin	0.000	0.000	N/A	43.498	1QFY 06	24.400	1QFY 07	CONT	CONT	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development												
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			378.670	41.449		43.498		24.400		CONT	CONT	420.119

Remarks: The DD(X) Phase IV contract is funded in the 1st Qtr. of each fiscal year.

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:

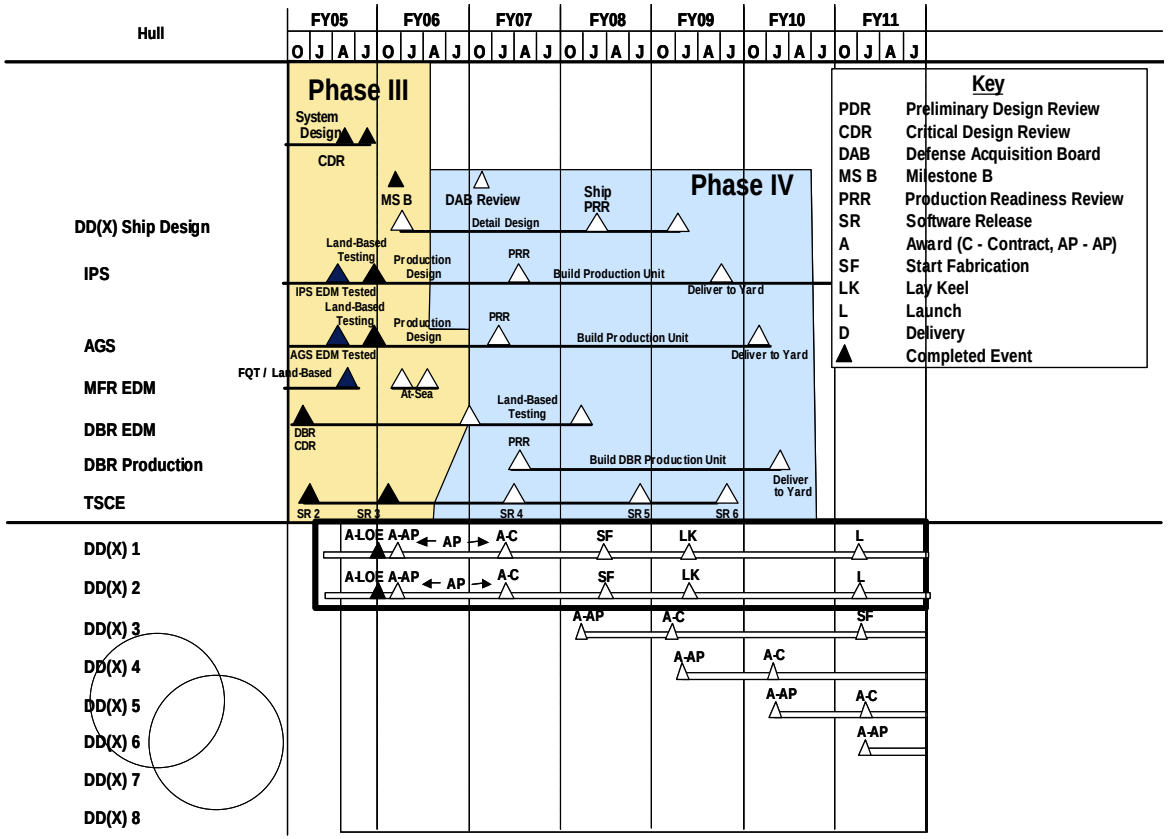
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation	CPAF	BAE/Lockheed Martin	0.000	0.000	N/A	0.800	1QFY06	20.600	1QFY07	0.000	21.400	21.400
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.800		20.600		0.000	21.400	21.400
Remarks:												
Contractor Engineering Support	GSA/CPFF	Anteon Arlington VA	6.448	0.578	10/04	0.341	10/05	0.467	10/06	CONT	CONT	
	Various	Other Contractors	0.000	15.577	Various	0.000	N/A	0.000	N/A	CONT	CONT	
Government Engineering Support	WX	NSWC DD Dahlgren VA	15.062	2.496	10/04	0.682	10/05	0.664	10/06	CONT	CONT	
	WX	NSWC PHD Pt Hueneme CA	7.842	1.103	10/04	0.639	10/05	0.722	10/06	CONT	CONT	
	WX	Other Gov't Activities	11.211	0.325	Various	0.150	10/05	0.168	10/06	CONT	CONT	
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			40.563	20.079		1.812		2.021		CONT	CONT	
Total Cost			419.233	61.528		46.110		47.021		CONT	CONT	441.519
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	4009 - Advanced Gun System (AGS)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering				PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
AGS EDM	3Q-4Q	1Q						
Land-Based Testing	3Q-4Q	1Q						
Production Design		1Q-4Q	1Q					
Production Readiness Review			2Q					
Build Production Unit			2Q-4Q	1Q-4Q	1Q-4Q	1Q		
Deliver to Yard						2Q		

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering				PROJECT NUMBER AND NAME 4010/Integrated Power Systems on DD(X)		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**62.679**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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 for DD(X) to 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 by: reducing ship acquisition cost through integration of propulsion and ship's service prime movers; reducing ship operational costs by creating more flexible operating characteristics and more efficient components; reducing ship construction costs by allowing more extensive modular construction of power generation, distribution, and loads; improving ship survivability and reducing vulnerability through increased arrangement flexibility and improved electrical system survivability; reducing manning by improving power management systems and reducing on-board maintenance requirements; improving ship signature characteristics; improving 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; simplifying technology insertion which allows new technologies to be installed within IPS much less expensively than presently possible; and reducing machinery system acquisition costs by utilizating commercially shared technologies and components.

FY05 Supplemental funding: $5M provided for Permanent Magnet Motor

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604300N/ DD(X) Total Ship Sys Engineering	4010/Integrated Power Systems on DD(X)

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	57.679	0.000	0.000
RDT&E Articles Quantity	0	0	0

Platform Specific Development: Fabricated DD(X) IPS Engineering Development Model (EDM) for land based testing. Performed factory acceptance tests of major components. In support of DD(X) IPS EDM land based testing, completed test site preparations and prepared test plans. Delivered DD(X) IPS EDMs to land based test site. Installed, checked, integrated and conducted testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.000	0.000	0.000
RDT&E Articles Quantity	0	0	0

Permanent Magnet Motor (PMM): Continued development of the Permanent Magnet Motor (PMM), specifically the insulation system. FY05 Supplemental Funding.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604300N/ DD(X) Total Ship Sys Engineering	4010/Integrated Power Systems on DD(X)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	59.495		
FY 2007 President's Budget:	62.679		
Total Adjustments	3.184	0.000	0.000
Summary of Adjustments			
Other General Provisions	-1.816		
Programmatic Changes	5.000		
Subtotal	3.184	0.000	0.000

Schedule:

Not Applicable

Technical:

Not Applicalbe

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604300N/ DD(X) Total Ship Sys Engineering	4010/Integrated Power Systems on DD(X)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
PE 0603513N / Shipboard Sys Component Dev	44.282	50.918	14.135	16.686	16.828	16.983	17.161	CONT	CONT
BLI 211900 / SCN	304.048	706.086	2,568.111	3,054.938	2,607.342	2,701.352	2,308.481	CONT	CONT

E. ACQUISITION STRATEGY:

DD(X) Phase IV includes the continuation of warfare system development, integration and testing from Phase III, as well as ship detail design and construction. The Navy intends to award contracts to BIW and NGSS for detail design and construction of a lead ship at each yard. It is planned that the Phase IV detail design will be contracted for on a Cost Plus Award Fee (CPAF) basis, and that ship construction efforts for the lead ships will be on a Cost Plus Incentive Fee (CPIF) basis with additional performance incentives. The Acquisition Strategy Report (ASR) reflecting the dual lead ship strategy was approved at the DD(X) Milestone B decision in November 2005.

F. MAJOR PERFORMERS:

IPS DD(X) Design Agent, Northrop Grumman Ship Systems

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROGRAM ELEMENT 0604300N/ DD(X) Total Ship Sys Engineering				PROJECT NUMBER AND NAME 4010/Integrated Power Systems on DD(X)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	DD(X) Design Agent	223.614	62.679	1QFY05					0.000	286.293	286.293
	845/804	DD(X) Industry Teams	66.661							0.000	66.661	66.661
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			290.275	62.679		0.000		0.000		0.000	352.954	352.954
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	
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

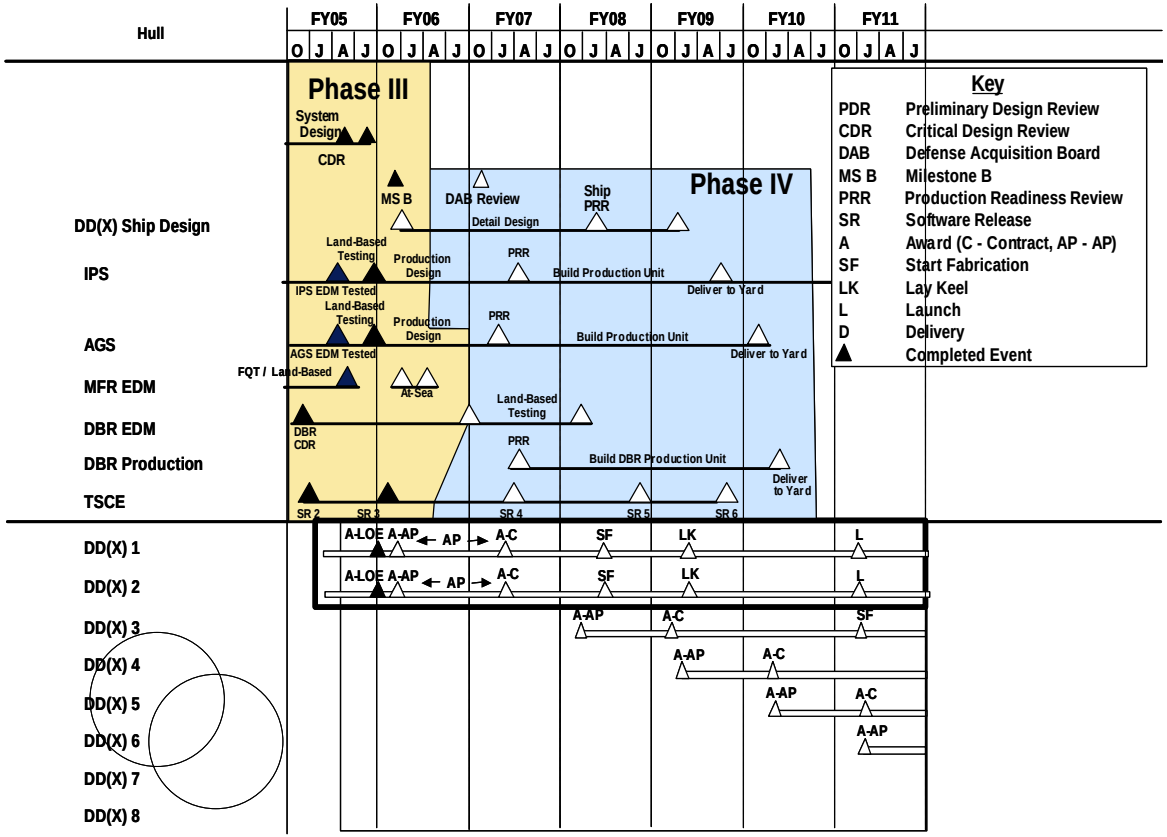
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROGRAM ELEMENT 0604300N/ DD(X) Total Ship Sys Engineering				PROJECT NUMBER AND NAME 4010/Integrated Power Systems on DD(X)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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		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			290.275	62.679		0.000		0.000		0.000	352.954	352.954
Remarks:												

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 4010/Integrated Power Systems on DD(X)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604300N/ DD(X) Total Ship Sys Engineering			PROJECT NUMBER AND NAME 4010/Integrated Power Systems on DD(X)				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Land Based Testing of IPS DD(X) EDMs	3Q-4Q	1Q						
Production Readiness Review			3Q					
Production Design	4Q	1Q-4Q	1Q-2Q					
Build Production Unit			2Q-4Q	1Q-4Q	1Q-3Q			
Deliver to Yard					4Q			

R-1 SHOPPING LIST - Item No. 101

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	9999 Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
9554C				
Naval Smartship	1.000			

Funding for FY06 Naval Smartship Congressional Add.

	FY 06			
9832N				
CG(X) System Concept and Design	30.000			

Funding for FY06 CG(X) system Concept and Design Congressional Add.

	FY 06			
9833N				
Floating Area Network	2.000			

Funding for FY06 Floating area network Congressional Add.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604300N - DD(X) Total Ship Systems Engineering	9999 Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
9834N				
Permanent Magnet Motor	6.600			

Funding for FY06 Permanent Magnet Motor Congressional Add.

	FY 06			
9835N				
Surface Vessel Electric Actuator Tech Dev	1.000			

Funding for FY06 Surface Vessel Electric Actuator Technology Development Congressional Add.

	FY 06			
9836N				
Wireless Maritime Inspection System	1.500			

Funding for FY06 Wireless Maritime Inspection System Congressional Add.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**				R-1 ITEM NOMENCLATURE 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			
COST (in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**148.939**	**228.932**	**190.059**	**209.311**	**218.081**	**242.782**	**268.415**
1447/Surface Combatant Combat System Improvements	136.011	200.743	151.594	95.169	72.118	88.068	87.825
3044/Solid State Spy Radar/AN/SPY-1 Radar System Readiness Improvement	3.174	12.289	38.465	114.142	145.963	154.714	180.590
9223/Silicon Carbide MMIC Production	2.907	0.000	0.000	0.000	0.000	0.000	0.000
9383/Smart Integration Data Env. (SIDE)	0.962	0.000	0.000	0.000	0.000	0.000	0.000
9555/AEGISTraveling Wave Tube Circuit	1.737	0.000	0.000	0.000	0.000	0.000	0.000
9556/Integrated Display & Enhanced Architecture (IDEA)	4.148	0.000	0.000	0.000	0.000	0.000	0.000
9999/Congressional Adds	0.000	15.900	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, the extensive use of Commercial Off-the-Shelf (COTS) equipment throughout the combat system requires necessary COTS refresh development efforts to pace the core Baseline development work. AEGIS Combat System engineering includes the CG/DDG Open Architecture (OA) effort, including rearchitected computer programs, to the AEGIS fleet. CG/DDG OA positions the cruisers and destroyers 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. The DDG Modernization Program will identify and introduce OA Category-3 compliant hardware and software. As part of the Naval Integrated Fire Control Counter Air (NIFC-CA) program, SM-6 integration efforts will begin in FY06.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NAME AND NUMBER **AEGIS COMBAT SYS ENG PE 0604307N**				R-1 ITEM NOMENCLATURE **1447 Surface Combatant Combat System Improvements**				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Surface Combatant Combat Sys/1447		**136.011**	**200.743**	**151.594**	**95.169**	**72.118**	**88.068**	**87.825**	
RDT&E Articles Qty **Not Applicable**									

A. Mission Description and Budget Item Justification:

This program provides cruiser & 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. The ACS capabilities have continually evolved. Baseline (B/L) 2 (CG 52-58) introduced the Vertical Launching System, TOMAHAWK Weapon System, and Anti-Submarine Warfare upgrades. B/L 3 (CG 59-64) introduced the AN/SPY-1B Radar, AN/UYQ-21 consoles, and UYK-43 "low boy" computers. B/L 4 (CG 65-73) introduced the production AN/UYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY1992 DDGs and included the Joint Tactical Information Distribution System (JTIDS) [Tactical Data Information Link (TADIL)16], Command and Control Processor (C2P), Combat Direction Finding, Tactical Data Information Exchange System, AN/SLQ-32 (V)3 Active Electronic Counter Countermeasures, and Aegis Extended Range (ER) Missile. B/L 5 was developed in two steps (Phases): Phase 1 integrated Aegis ER and supported the missile Initial Operational Capability; Phase 3 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. B/L 5 Phase 3 is now resident on baseline 3 & 4 CGs and DDG 51-78. Baseline 6 Phase I introduced COTS, FDDI LAN, UYQ-70 consoles, CEC for CGs, and an adjunct COTS computer for ADS. It supported OPEVAL of CEC in CGs 66 and 69 and was introduced in the DDG 51 class beginning with DDG 79. B/L 6 Phase 1 is now resident on CGs 59, 65, 66, 68, 69 and 71. B/L 6 Phase 3 was introduced on DDG 85-90 and is being backfit onto DDGs 79-84. B/L 6 Phase 3 upgrades included embarked helicopters, Fiber Optics as applied to Data Multiplexing (FODMS), implementation of affordability initiatives, adjunct computers for all AWS elements, CEC for DDGs, and Battle Force Tactical Trainer (BFTT), Advanced Display System, Evolved Sea Sparrow Missile (ESSM) Identification (ID) upgrades Phase 1, Advanced TOMAHAWK Weapon System (ATWCS) Phase II, Fire Control System Upgrades, and the Joint Maritime Command Information System (JMCIS). B/L 7 Phase 1 is installed in the DDG 51 class beginning with DDG 91. Major Baseline 7 upgrades include but are not limited to introduction and integration of a new radar (AN/SPY-1D(V) upgrade), all UYK-43 and adjunct computers to be replaced with COTS-based advanced computer processing, A/N-SQQ-89(V)15, and the Remote Mine Hunting System. The Cruiser Modernization Program will upgrade cruisers to provide enhanced Air Dominance and C4I improvements, enhanced Gun Weapon system capability, improved force protection, replaces UYA-4 consoles with COTS consoles, replaces obsolete UYK-7 computers with COTS computing architecture to introduce Open Architecture. Experience with COTS equipment in baselines 6 Phase 1 through Baseline 7 has shown that COTS equipment will require a nominal four year cyclical refresh (periodic replacement) plan. This is a fact of life introduced by COTS because industry stops supporting older COTS components as it progresses to the next version. Currently, these refresh efforts are not "plug and play." They require additional developmental efforts that will necessitate replacement of new components with updated operating systems, device drivers, and interfaces. This program introduces a CG/DDG Open Architecture (OA) effort, including rearchitected computer program components, in accordance with Navy Open Architecture guidance and standards. CG/DDG OA positions the cruisers and destroyers for maximum warfighting improvements and life cycle support benefit to meet evolving threats. It produces a system which is considerably less difficult to maintain and modernize and mitigates the cost of inevitable, required, and repetitive technology refreshes. The DDG Modernization Program will identify and introduce OA Category-3 compliant hardware and software. As part of the Naval Integrated Fire Control Counter Air (NIFC-CA) program, SM-6 integration efforts will begin in FY06. Due to FY05 Congressional action, the B/L 7 Phase 1C effort originally targeted for fielding in FY06 has been replanned as Cruiser Modernization CR2 (CGM CR2) for fielding in FY08 on B/L 2 CGs and FY11 on B/L 3/4 CGs and highly leverages AOA efforts and funding.

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	1447 Surface Combatant Combat System Improvements

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	27.196	0.000	0.000
RDT&E Articles Quantity			

Accomplishments: Continued maturation of Baseline 7 Phase I in support of SPY-1D(V) DT/OT and DDG 91-102 ship building milestones. Conducted demonstration of Baseline 7 Phase I capabilities. Included support of AWS Baseline Replan initiatives: capture of high priority CPCR fixes into Baseline 7 Phase I variants (7IC, 7IR); reducing number of deficiency workarounds; NSWC-DD Forward Engineering Test Team and SPY-1D (V) TECHEVAL.

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	27.751	16.197	0.000
RDT&E Articles Quantity			

Accomplishments: Continued coding, debugging and testing of Baseline 7 Phase I COTS Refresh necessary for fielding DDGs 103-112.
Planned: Continue to code, debug and conduct element test and multi-element integration tests, including CEC 2.1, culminating in a Navy Integrated test Event starting in 2Q FY06.

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	41.595	97.200	74.000
RDT&E Articles Quantity			

Accomplishments: Baseline 7 Phase II evolved into a three Spiral development effort to implement CG/DDG Open Architecture (OA) by providing open architected elements into B/L 7.1R and both cruiser and destroyer modernization. This effort re-architects Aegis computer program for the following elements: SPY (Radar), AEGIS Display System (ADS), and Weapon Control System (WCS) in accordance with and compliant with Navy Open Architecture specifications and standards. Incrementally introducing the re-architected products in a spiral fashion in 7 Phase 1 Refresh (DDG103+) and Cruiser Modernization COTS Refresh 2 (CGM CR2) (Baseline 2 Cruisers). Successfully demonstrated design and code portability of the preliminary SPY OA and WCOA elements.
Planned: Conduct Lifecycle Objective Review (LOR) and Lifecycle Architecture Review (LAR) for Spiral Three.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	1447 Surface Combatant Combat System Improvements

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	9.971	22.820	18.518
RDT&E Articles Quantity			

Accomplishments: Switched work from Baseline 7 Phase 1C development efforts originally targeted for a FY06 Cruiser in accordance with FY05 Congressional action to design of Cruiser Modernization CGM CR2 effort now targeted for Baseline 2 Cruisers in FY08 and applicable to Baseline 3/4 Cruisers in FY11. Completed product definition of COTS Refresh 2 computing environment that will integrate both legacy and Open Architecture (OA) computer programs for CGM CR2 . Effort highly leveraged to AOA.

Planned: Design, code, debug and test Cruiser unique modifications associated with interfacing to AOA products and computer program.

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	13.488	17.869	19.891
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 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	16.010	7.621	12.400
RDT&E Articles Quantity			

Accomplishments/Planned: Provided funds for labs and field activities to support forward fit and backfit baseline upgrades in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability. Studies produced by the Applied Physics Lab and the NSWC-DD ensure effective management of COTS. NSWC-DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the ACS.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	1447 Surface Combatant Combat System Improvements

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	0.000	15.700	14.100
RDT&E Articles Quantity			

Accomplishments/Planned: Begin development efforts to identify and introduce Open Architecture Category-3 compliant hardware and Crusier Modernization COTS Refresh 2 computer programs in support of the DDG Modernization program. Create a common set of specifications and drawings.

	FY 05	FY 06	FY 07
Accomplishments/Efforts/Subtotal Cost	0.000	23.336	12.685
RDT&E Articles Quantity			

Planned: Begin development efforts for Naval Integrated Fire Control Counter Air (NIFC-CA), SM-6/AEGIS integration. Conduct Performance Analyses and Trade studies, Modeling and Simulation studies and SM-6 algorithmic studies culminating in a development leading to a Family of Systems design.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	1447 Surface Combatant Combat System Improvements

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY06/07 Pres Controls)	143.889	203.837	182.518
Current President's Budget: (FY07 PB Controls)	136.011	200.743	151.594
Total Adjustments	-7.878	-3.094	-30.924
Execution Year Adjustments			
Other General Provisions	-3.130	-3.094	
Programmatic changes			-30.815
BTR	-4.748		
Other misc. changes			-0.109
PB07 Fuel Price Adjustments			
Subtotal	-7.878	-3.094	-30.924

Schedule:

1) Baseline 7P1R Initial Cert moved to 4Q FY06
2) Schedule Program Assessment Review (PAR) for 3Q FY07
3) CG/DDG OA Spiral 2 EA 2 moved to 3Q FY06
4) DDG Modernization Initial Cert moved to 2Q FY10

Technical:

N/A

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	1447 Surface Combatant Combat System Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
SCN 2122 - DDG 51	3,428.3	146.9	355.8	86.0				Cont.	Cont.
OPN 5246 - AEGIS Supt. Eqp	61.5	101.6	75.3	114.7	138.5	172.6	161.6	Cont.	Cont.
OPN 0900 - DDG Mod		3.0	2.2	55.7	200.8	177.9	180.3	Cont.	Cont.

E. ACQUISITION STRATEGY:

Combat System Improvements are implemented in Baselines as described in the project mission statement. In FY 1998, Lockheed Martin was awarded an 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)
NSWC/DD, Dahlgren, VA (Lifetime Support Engineering Agent)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 1447 Surface Combatant Combat System Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	887.166	89.478	01/05	145.104	01/06	105.593	01/07	Cont.	Cont.	
Systems Engineering	SS/CPFF	APL, Baltimore MD	27.643	0.100	10/04	0.617	10/05	0.817		Cont.	Cont.	
Systems Engineering	WR/RCP	NSWC, Dahlgren VA	157.819	6.682	11/04	12.748	11/05	9.915		Cont.	Cont.	
Systems Engineering	SS/CPAF	BAE Systems, Rockville, MD	0.000	6.089	10/04	6.855		6.089				
Systems Engineering	WR	NSWC, PHD CA	21.867	2.948	11/04	7.177	11/05	1.848		Cont.	Cont.	
Systems Engineering	WR/RCP	NWAS, Corona CA	16.559	2.570	11/04	1.650	11/05	1.325		Cont.	Cont.	
Systems Engineering	WR	SPAWAR	4.764	0.752	11/04	0.591	11/05	0.840		Cont.	Cont.	
Systems Engineering	WR/RCP	Dam Neck	7.015	0.038		0.100		0.000		Cont.	Cont.	
Systems Engineering	WR/RCP	Miscellaneous	35.126	4.088	Various	2.494		0.670		Cont.	Cont.	
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	117.880	10.737	07/05	11.536	07/06	14.561		Cont.	Cont.	
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	0.580	0.250	10/04	0.250		0.250		Cont.	Cont.	
Award Fees	SS/CPAF	Anteon, Washington, DC	0.000	0.250	10/04	0.250		0.250		Cont.	Cont.	
Award Fees	WR/RCP	Miscellaneous	2.790	0.000		0.000		0.000		Cont.	Cont.	
Subtotal Product Development			1279.209	123.982		189.372		142.158		Cont.	Cont.	

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604307N/AEGIS COMBAT SYSTEM ENGINEERING

PROJECT NUMBER AND NAME: 1447/9066 Surface Combatant Combat System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	SS/CPAF	Lockheed, Moorestown, NJ	19.622	3.390	07/05	4.218	07/06	2.838	07/07	Cont.	Cont.	
Test and Evaluation	WR	NSWC, Pt. Hueneme, CA	6.840	1.547	11/04	0.760	11/05	0.724		Cont.	Cont.	
Test and Evaluation	CPFF	APL, Baltimore MD	3.500	0.000		0.000		0.000		Cont.	Cont.	
Test and Evaluation	WR/RCP	Miscellaneous	11.527	1.829	Various	1.984	Various	1.523		Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
Subtotal T&E			41.489	6.766		6.962		5.085		Cont.	Cont.	
Remarks:												
Program Management Support	SS/CPAF	Anteon, Washington, DC	0.000	4.300	10/04	4.000		4.000				
	WR/RCP	Miscellaneous	7.246	0.963	Various	0.409	Various	0.351	Various	Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
SBIR Assessment										Cont.	Cont.	
Subtotal Management			7.246	5.263		4.409		4.351		Cont.	Cont.	
Remarks:												
Total Cost			1,327.944	136.011		200.743		151.594		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

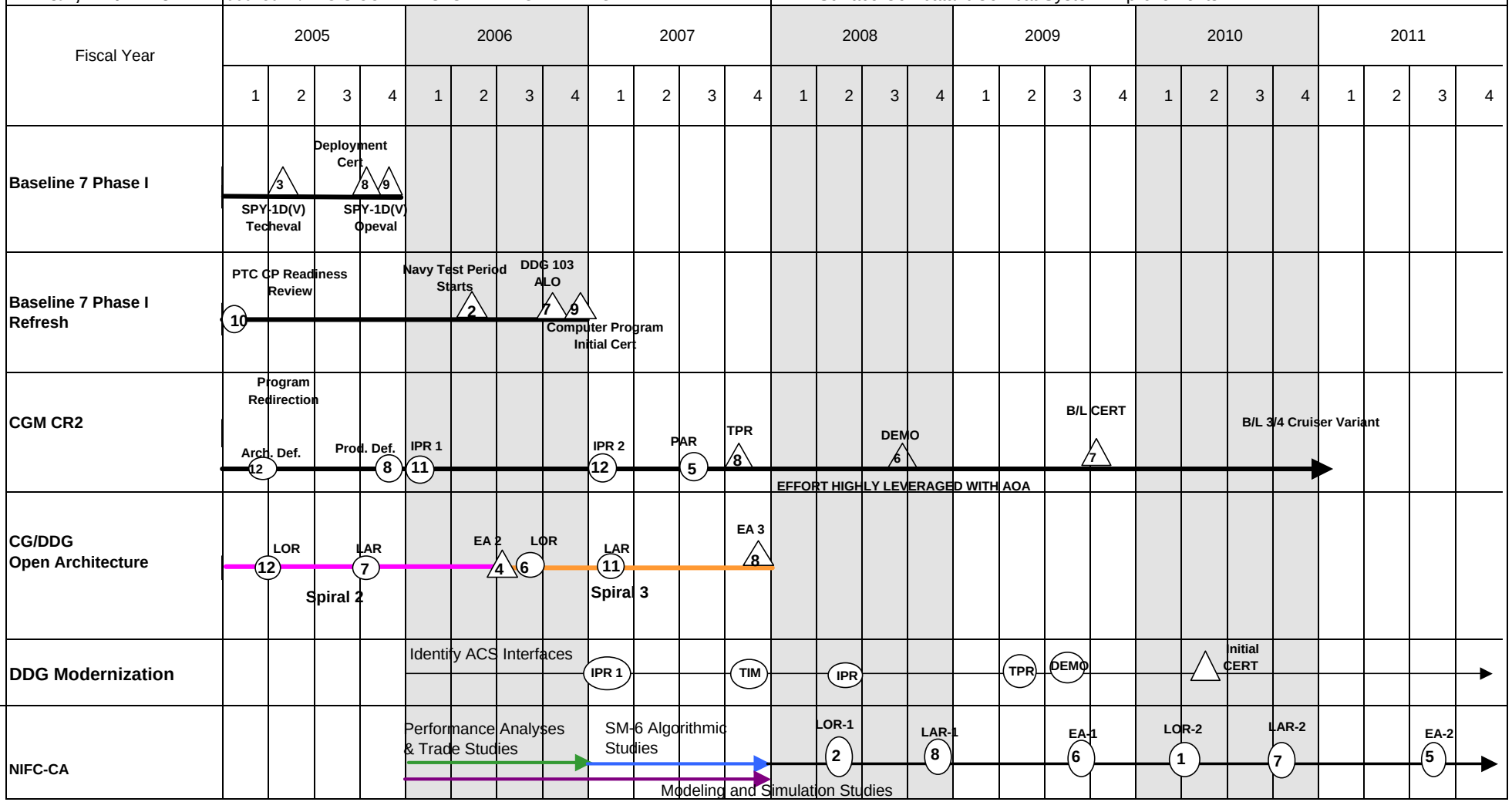
EXHIBIT R-4, RDT&E Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET A: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604307N/AEGIS COMBAT SYSTEM ENGINEERING

PROJECT NUMBER AND NAME: 1447 Surface Combatant Combat System Improvements



R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 1447 Surface Combatant Combat System Imp.			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
7 Phase I								
SPY-1D(V) Opeval	4Q							
Deployment Cert	4Q							
7 Phase I Refresh								
PTC CP Readiness Review	1Q							
Navy Integrated Test Period		2Q-4Q						
DDG 103 Aegis Light Off (ALO)		4Q						
Computer Program Initial Cert		4Q						
CGM CR2								
Architecture Definition	1Q							
Product Definition	4Q							
Initial Process Review (IPR) 1		1Q						
Initial Process Review (IPR) 2			1Q					
Program Assessment Review (PAR)			3Q					
Test Program Review (TPR)			4Q					
Demo				3Q				
B/L Cert					4Q			
CG/DDG Open Architecture								
Spiral 2 Lifecycle Objective Review (LOR)	1Q							
Spiral 2 Lifecycle Architecture Review (LAR)	4Q							
Spiral 2 Engineering Assessment (EA) 2		3Q						
Spiral 3 LOR		3Q						
Spiral 3 Lifecycle Architecture Review (LAR)			1Q					
Spiral 3 Engineering Assesment (EA) 3			4Q					
DDG Modernization								
Initial Process Review (IPR) 1			1Q					
Technical Interchange Meeting (TIM)			4Q					
Initial Process Review (IPR) 2				2Q				
Test Program Review (TPR)					2Q			
Demo					3Q			
Initial Cert						2Q		
NIFC-CA								
Performance Analyses and Trade Studies		1Q-4Q						
SM-6 Algorithmic Studies			1Q-4Q					
Modeling and Simulation Studies		1Q-4Q	1Q-4Q					
Lifecycle Objective Review (LOR) 1				2Q				
Lifecycle Architecture Review (LAR) 1				4Q				
Engineering Assesment (EA) 1					3Q			
Lifecycle Objective Review (LOR) 2						2Q		
Lifecycle Architecture Review (LAR) 2						4Q		
Engineering Assesment (EA) 2							3Q	

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604307N/AEGIS COMBAT SYSTEM ENG**			PROJECT NUMBER AND NAME **3044/9223/9555 - Solid State SPY Radar**			
COST ($ in Millions)	FY 2005*	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**7.818**	**12.289**	**38.465**	**114.142**	**145.963**	**154.714**	**180.590**
RDT&E Articles Qty	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

SOLID STATE SPY RADAR / SILICON CARBIDE MMIC PRODUCIBILITY PROGRAM:
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 multi-mission 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.

AN/SPY-1 RADAR SYSTEM READINESS IMPROVEMENT PROGRAM:
The AN/SPY-1 radar system is the Navy's primary radar for air defense and ballistic missile defense and will be so for the next 20+ years. Readiness improvements will be analyzed and systems engineering performed to improve the readiness of the AN/SPY-1 Radar. This program will improve AN/SPY-1 operational availability, reliability and reduce cost of operation. The AN/SPY-1 Readiness Improvement program also includes the production of intelligent automated maintenance tools, which will improve operational & combat effectiveness while improving system availability of the AN/SPY-1. The funding will go towards the non-recurring engineering costs for development of the AN/SPY-1 readiness improvements and related tools; as well as provide money for production drawings, interface/maintenance documents, and logistical planning. Additional readiness improvements will address transmitter, signal processor and microwave tube shortcomings.

AEGIS TRAVELING WAVE TUBE CIRCUIT:
This program defines the efforts necessary to identify and solve DMS issues with the 10KW traveling wave tube (TWT). In particular, changes to the slow wave structure will be identified that will provide an additional source for the slow wave structure used in the 10KW TWT.

CG(X) PROGRAM:
CG(X) transferred into P.E. 0604307N (3044) from P.E. 0604300N (3104)
The CG(X) is a multi-mission ship required to perform self-defense, area air defense, and ballistic missile defense. The CG(X) must have a radar capable of operating in different environmental and mission regimes against a wide variety of potential targets and profiles. A scalable radar design with major improvements in power, sensitivity, resistance to natural and man-made environments over current radar systems is needed for multi-mission TAMD (BMD and Area AAW). Modularity of hardware and software, a designed in growth path for technology insertion, and Open Architecture (OA) Compliance are required for performance and technology enhancements throughout service life.

* FY 2005 includes: Silicon Carbide MMIC Producibility Program congressional add, Improved Readiness for AN/SPY-1 Radar congressional add, and the AEGIS Traveling Wave Tube Circuit congressional add.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**3044/9223/9555 - Solid State SPY Radar**

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	4.480	17.309
RDT&E Articles Quantity	0	0	0

R&D / RISK REDUCTION
Planned:
- Digital Array Radar (DAR) build, integration, and component test
- Prototype build, integration, and initial test
- Conduct Navy Program Decision Milestone to finalize technology and radar baseline

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.500	0.000	0.000
RDT&E Articles Quantity	0	0	0

ADVANCED TECHNOLOGY MMIC DEVELOPMENT
Accomplishments:
- 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

R-1 SHOPPING LIST - Item No. 102

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**3044/9223/9555 - Solid State SPY Radar**

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.268	7.289	20.386
RDT&E Articles Quantity	0	0	0

SYSTEMS ENGINEERING

Accomplishments:

- Produced an operational, proof-of-concept, software demonstration/simulation model of Adaptive Diagnostic Electronic Portable Testset (ADEPT) and a stand-alone prototype system capable of performing alignment and maintenance procedures on the AN/SPY-1A radar in Phase I and Phase II of the ADEPT SBIR, respectively.
- Defined efforts necessary to identify and solve DMS issues with the 10KW traveling wave tube (TWT).

Planned:

- 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 issues.
- Perform supporting studies and analyses.
- Finalize Acquisition Strategy (AS), Acquisition Plan (AP), and Technical Data Package (TDP) for competition
- Conduct CG(X) Radar competiton

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.050	0.520	0.770
RDT&E Articles Quantity			

PROGRAM MANAGEMENT SUPPORT

Planned:

- Program planning, assessment of technical alternatives, risk identification and mitigation.
- Cost and schedule development and execution.

Total Cost:	7.818	12.289	38.465

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**3044/9223/9555 - Solid State SPY Radar**

C. (U) PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY06 PB Controls)	8.021	12.476	45.433
Current President's Budget: (FY07 PB Controls)	7.818	12.289	38.465
Total Adjustments	-0.203	-0.187	-6.968

Summary of Adjustments

Programmatic Changes	0.000	0.000	-6.723
Other General Provisions	-0.203	-0.187	
Other misc. changes			-0.245
Subtotal	-0.203	-0.187	-6.968

Schedule:

Not Applicable.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**3044/9223/9555 - Solid State SPY Radar**

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
RDTEN 0604300N - 3107 CG (X) Development	0.000	29.658	9.282	102.577	187.069	254.605	239.731	Cont.	Cont.

E. ACQUISITION STRATEGY:

SOLID STATE SPY RADAR / SILICON CARBIDE MMIC PRODUCIBILITY PROGRAM: 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.

AN/SPY-1 RADAR SYSTEM READINESS IMPROVEMENT PROGRAM: This is a Phase II SBIR managed by Mikros Systems Corporation.

AEGIS TRAVELING WAVE TUBE CIRCUIT PROGRAM: This program is managed by NSWC Crane.

CG(X): (U) Plans are to leverage research and development investments, integrate significantly matured fundamental advanced technologies from technology risk reduction efforts and allies, and incorporate Open Architecture approaches to develop a scalable radar design with major improvements in power, sensitivity, resistance to natural and man-made environments over current radar systems for multi-mission TAMD (BMD and Area AAW). System design will be accomplished using proven advanced technologies and commercial standards to lower schedule risk and

F. MAJOR PERFORMERS:

SS SPY: Lockheed Martin - Moorestown, NJ
Improved Readiness for AN/SPY-1 Radar: Mikros Systems Corporation, Princeton, NJ
Silicon Carbide Producibility MMIC Program: CREE, Inc. Durham, NC
CG(X): TBD

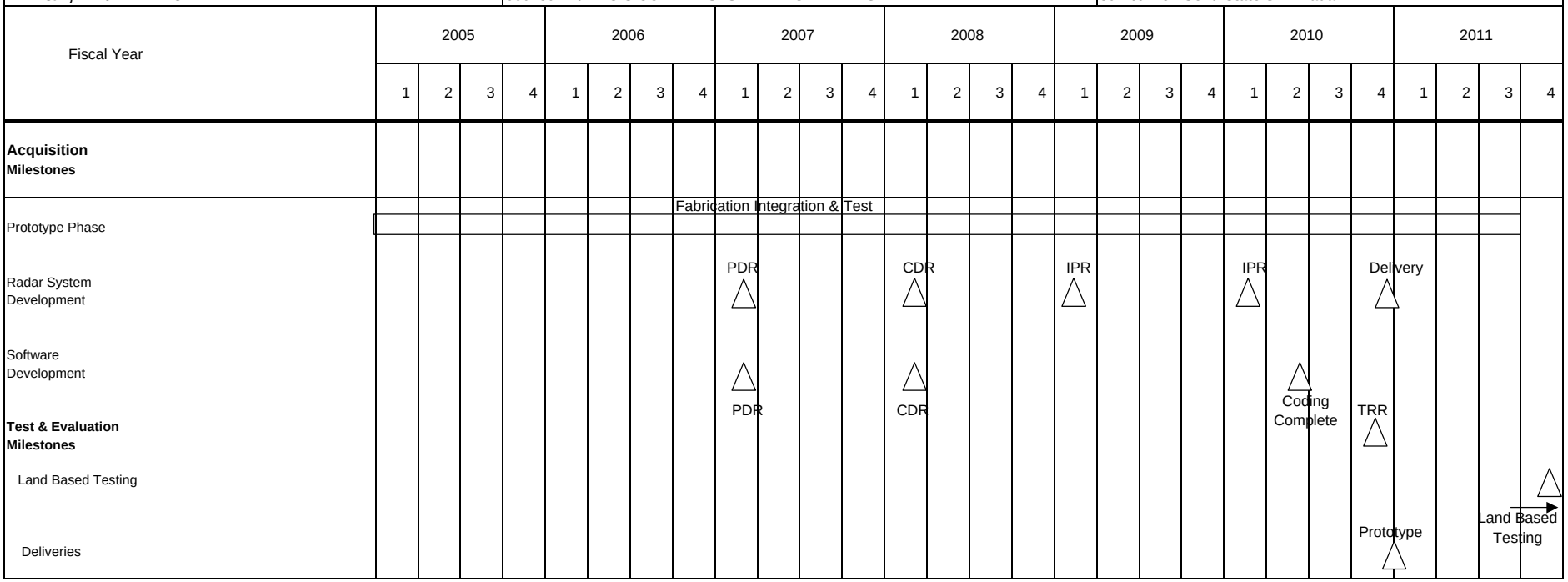
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 5**			PROGRAM ELEMENT NAME AND NUMBER **0604307N/AEGIS COMBAT SYSTEM ENG**			PROJECT NUMBER AND NAME **3044/9223/9555 - Solid State SPY Radar**						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
R&D / Risk Reduction	Various	Various	0.000	0.000	N/A	0.530	02/06	17.309	TBD	Continuing	Continuing	TBD
	CPFF	JHU/APL	0.000	0.000	N/A	0.550	02/06			Continuing	Continuing	TBD
	Cost Share	CREE	0.000	0.000	N/A	0.050	05/06			Continuing	Continuing	TBD
	SS/CPAF	Lockheed Martin (NJ)	22.204	0.000	N/A	0.000	N/A					
	MIPR	DCMA	8.000	0.000	N/A	0.000	N/A					
	MIPR	DMEA	0.000	0.000	N/A	2.500	05/06			Continuing	Continuing	TBD
	MIPR	MIT	0.000	0.000	N/A	0.350	02/06			Continuing	Continuing	TBD
	WX	NSWC DD	0.000	0.000	N/A	0.500	02/06			Continuing	Continuing	TBD
Advanced Technology MMIC Dev	Cost Share	CREE	2.759	0.000	N/A	0.000	N/A			Continuing	Continuing	TBD
	CPFF	AFRL	0.000	2.500	06/05	0.000	N/A					
System Engineering	Various	Various	1.565	0.000	N/A	0.854	02/06	17.881	TBD	Continuing	Continuing	TBD
	WX	Various	0.000	0.027	02/06	0.000	N/A			Continuing	Continuing	TBD
	CPAF	BAE Systems	0.000	0.283	11/05	0.605	02/06			Continuing	Continuing	TBD
	C NF	GTRI	0.000	0.000	N/A	0.200	03/06			Continuing	Continuing	TBD
	CPFF	JHU/APL	1.614	0.000	N/A	0.550	03/06			Continuing	Continuing	TBD
	CPFF	MIKROS	2.503	2.949	09/05	0.000	N/A			Continuing	Continuing	TBD
	MIPR	MIT	0.000	0.093	06/05	0.350	02/06			Continuing	Continuing	TBD
	WX	NAVFAC PAC	0.000	0.000	N/A	0.230	02/06			Continuing	Continuing	TBD
	WX	NRL	0.250	0.000	N/A	0.480	02/06			Continuing	Continuing	TBD
	WX	NSWC Crane	0.000	1.737	06/05	0.000	N/A			Continuing	Continuing	TBD
	WX	NSWC DD	2.050	0.055	06/05	0.500	02/06			Continuing	Continuing	TBD
	WX	PHD	0.050	0.120	06/05	0.000	N/A			Continuing	Continuing	TBD
	WX	PMRF	0.000	0.005	N/A	0.158	02/06			Continuing	Continuing	TBD
	WX	SPAWAR	0.000	0.000	N/A	0.087	02/06			Continuing	Continuing	TBD
Subtotal Product Development			40.995	7.768		8.494		35.190		Continuing	Continuing	TBD
Remarks:												
Contractor Engineering	Various	Various	0.155	0.000	N/A	0.000	N/A	2.430	TBD	Continuing	Continuing	TBD
	CPAF	BAE Systems	0.000	0.000	N/A	3.200	02/06		TBD	Continuing	Continuing	TBD
Support / Management Services	Various	Various	0.155	0.000	N/A	0.000	N/A	0.770	TBD	Continuing	Continuing	TBD
	CPAF	BAE Systems	0.000	0.050	11/05	0.520	02/06			Continuing	Continuing	TBD
Travel			0.000	0.000	N/A	0.075	02/06	0.075	TBD	Continuing	Continuing	TBD
Subtotal T&E:			0.310	0.050		3.795		3.275		Continuing	Continuing	TBD
Remarks:												
Total Cost			41.305	7.818		12.289		38.465		Continuing	Continuing	TBD

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604307N / AEGIS COMBAT SYSTEM ENGINEERING**	PROJECT NUMBER AND NAME **3044/9223 - Solid State SPY Radar**



R-1 SHOPPING LIST - Item No. 102

CDR	Critical Design Review
IPR	In-Progress Review
PDR	Preliminary Design Review
TRR	Test Readiness Review

CLASSIFICATION:

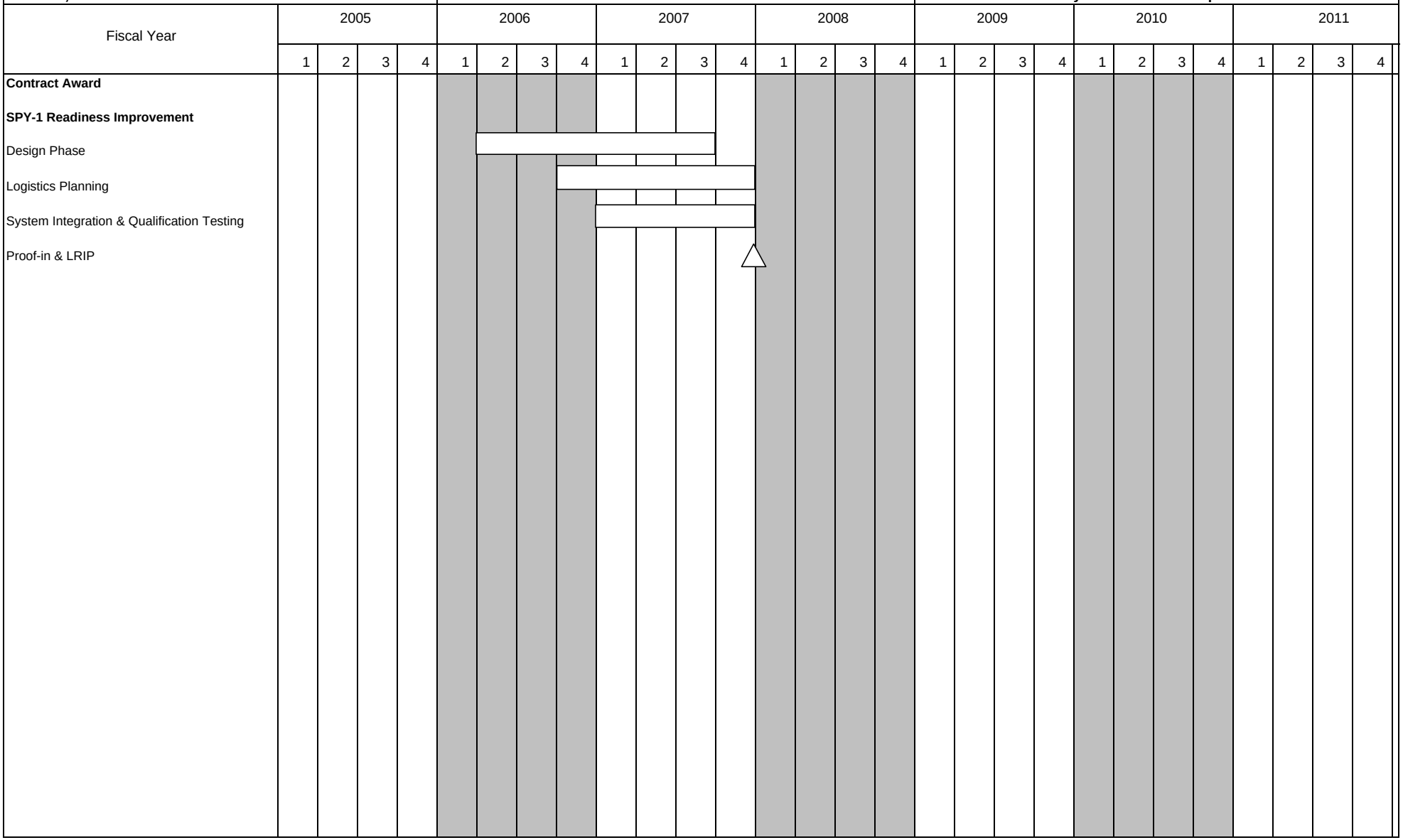
Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-5**	PROGRAM ELEMENT **0604307N/AEGIS COMBAT SYSTEM ENG**				PROJECT NUMBER AND NAME **3044/9223 - Solid State SPY Radar**		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase							
Radar System Development							
Preliminary Design Review (PDR)			1Q				
Critical Design Review (CDR)				1Q			
In-Process Review (IPR)					1Q	1Q	
Delivery						4Q	
Software Delivery							
Preliminary Design Review (PDR)			1Q				
Critical Design Review (CDR)				1Q			
Coding Complete						2Q	
Test & Evaluation							
Test Readiness Review (TRR)						4Q	
Land Based Test							4Q
Deliverables							
Prototype							
						4Q	

R-1 SHOPPING LIST - Item No. 102

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA - 5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**3044/AN/SPY-1 Radar System Readiness Improvement**



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

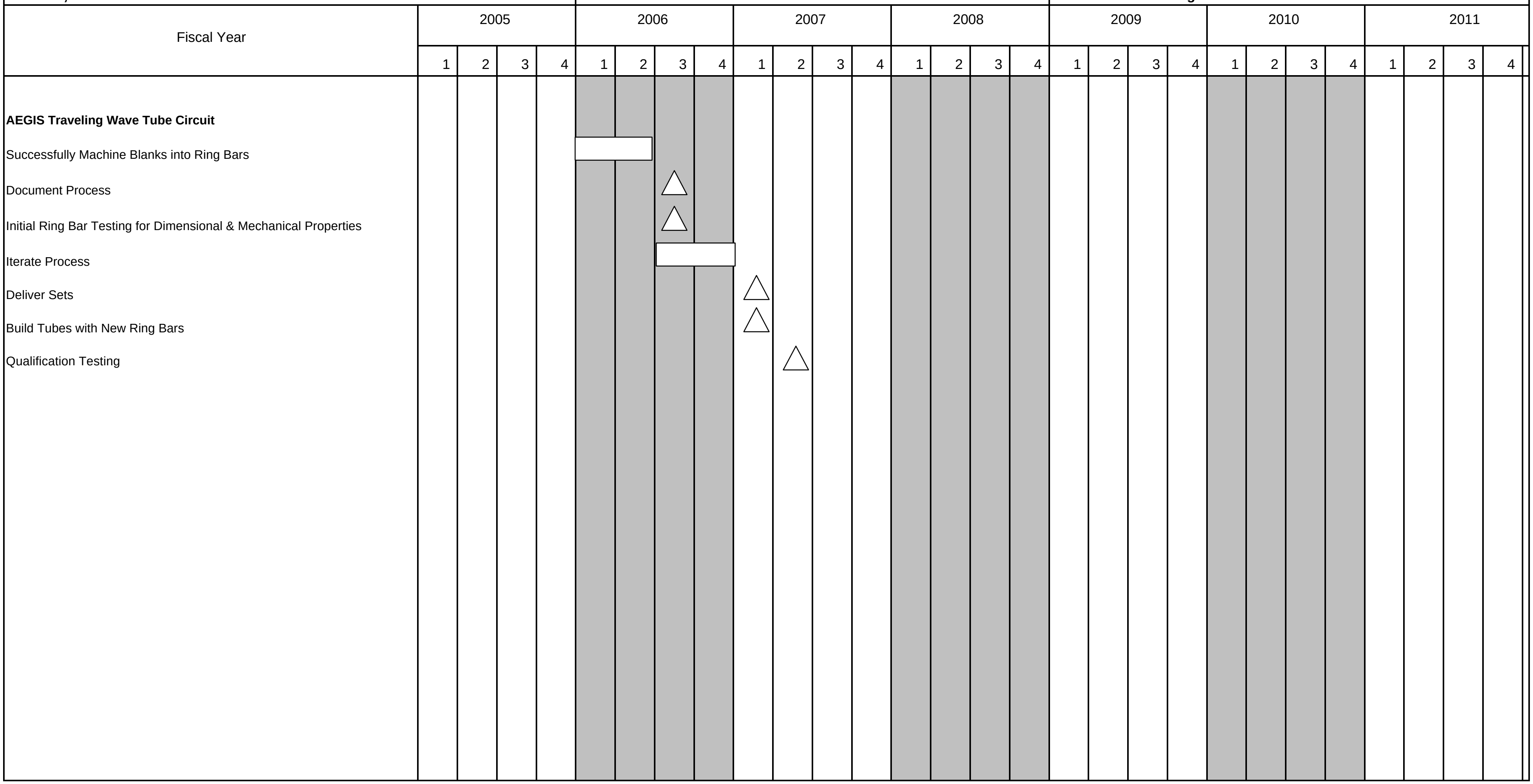
CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-5**	PROGRAM ELEMENT **0604307N/AEGIS COMBAT SYSTEM ENG**			PROJECT NUMBER AND NAME **3044/AN/SPY-1 Radar System Readiness Improvement**			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SPY-1 Readiness Improvement							
Design Phase		2Q-4Q	1Q-3Q				
Logistics Planning		4Q	1Q-4Q				
System Integration & Qualification Testing			1Q-4Q				
Proof-in & LRIP			4Q				

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 5**	PROGRAM ELEMENT NUMBER AND NAME **0604307N/AEGIS COMBAT SYSTEM ENG**	PROJECT NUMBER AND NAME **9555/AEGIS Traveling Wave Tube Circuit**



R-1 SHOPPING LIST - Item No. 102

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

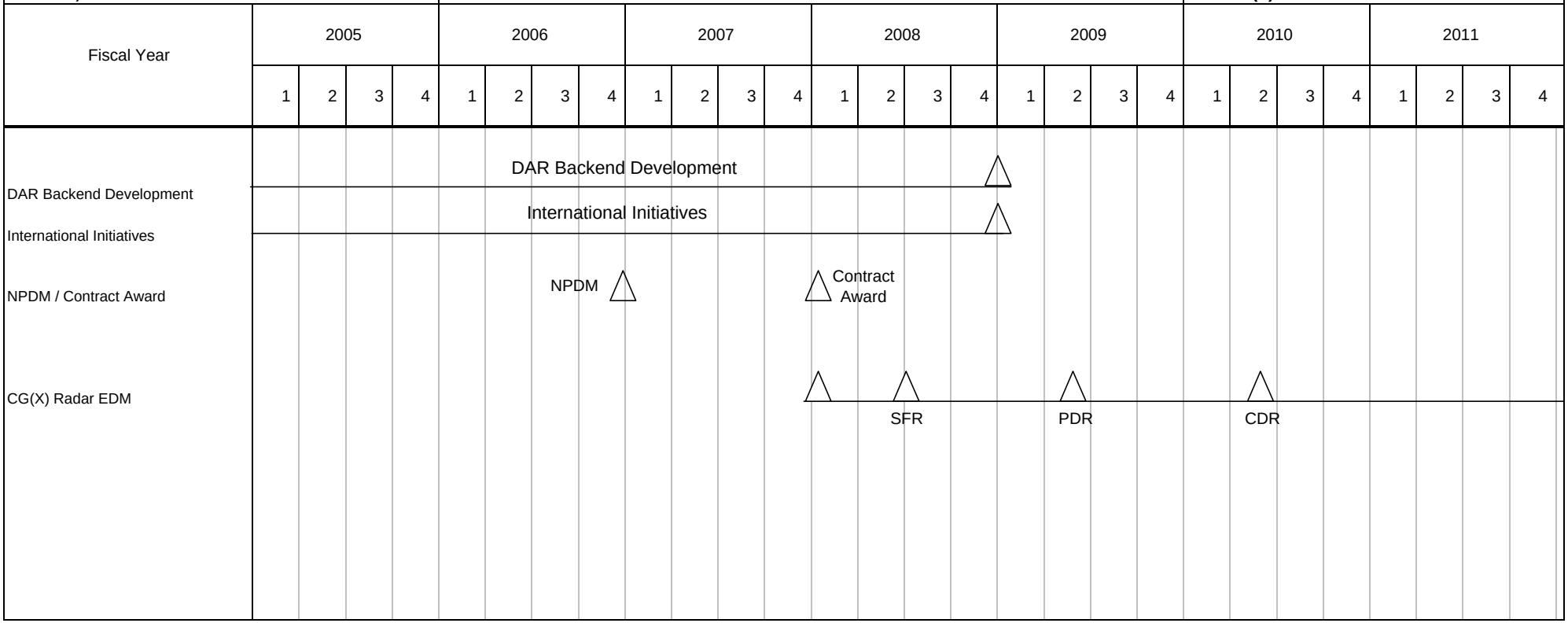
CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N / BA-5**	PROGRAM ELEMENT **0604307N/AEGIS COMBAT SYSTEM ENG**				PROJECT NUMBER AND NAME **9555/AEGIS Traveling Wave Tube Circuit**		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
AEGIS Traveling Wave Tube Circuit							
Successfully Machine Blanks into Ring Bars		1Q-2Q					
Document Process		3Q					
Initial Ring Bar Testing for Dimensional & Mechanical Properties		3Q					
Iterate Process		3Q-4Q					
Deliver Sets			1Q				
Build Tubes with New Ring Bars			1Q				
Qualification Testing			2Q				

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604307N / AEGIS COMBAT SYSTEM ENGINEERING**		PROJECT NUMBER AND NAME **3044/CG(X)**



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

LEGEND

CDR	Critical Design Review
EDM	Engineering Development Model
LBT	Land Based Testing
NPDM	Navy Program Decision Milestone
PDR	Preliminary Design Review
SFR	System Functional Review

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT **0604307N / AEGIS COMBAT SYSTEM ENGINEERING**					PROJECT NUMBER AND NAME **3044/CG(X)**		
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CG(X) EDM								
Navy Program Decision Milestone (NPDM)			4Q					
Contract Award(s)					1Q			
System Functional Review (SFR)					2Q			
Preliminary Design Review (PDR)						2Q		
Critical Design Review (CDR)							2Q	

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604307N/AEGIS COMBAT SYSTEM ENG**	**9999 / Congressional Adds: Various**

CONGRESSIONAL ADDS:

	FY 06			
3044C				
AN/SPY-1 Radar System Readiness Improvement	3.400			

The AN/SPY-1 radar system is the Navy's primary radar for air defense and ballistic missile defense and will be so for the next 20+ years. Readiness improvements will be analyzed and systems engineering performed to improve the readiness of the AN/SPY-1 Radar. This program will improve AN/SPY-1 operational availability, reliability and reduce cost of operation. The AN/SPY-1 Readiness Improvement program also includes the production of intelligent automated maintenance tools, which will improve operational & combat effectiveness while improving system availability of the AN/SPY-1. The funding will go towards the non-recurring engineering costs for development of the AN/SPY-1 readiness improvements and related tools; as well as provide money for production drawings, interface/maintenance documents, and logistical planning. Additional readiness improvements will address transmitter, signal processor and microwave tube shortcomings.

	FY 06			
9223C				
Silicon Carbide MMIC Producibility	2.000			

This program continues development of producible SiC high power MMICs for incorporation into Navy S-band advanced radar systems. This funding will be used to improve SiC MMIC manufacturing processes, significantly reducing MMIC component and radar system production costs.

	FY 06			
9566C				
Integrated Display & Enhanced Architecture CV-T	3.400			

IDEA permits an operator to immediately reconfigure his/her workstation and assume the responsibilities of any other operator, thereby facilitating real Navy manning reductions while still meeting operational requirements. In addition to reconfigurable display surfaces, IDEA enables HSI improvements for improved decision-making and increased productivity. Allows display components to be developed once and reused to realize cost savings across Navy programs.

R-1 SHOPPING LIST - Item No. 102

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**AEGIS COMBAT SYS ENG PE 0604307N**	**9999 / Congressional Adds : Various**

CONGRESSIONAL ADDS:

	FY 06			
9383C				
Smart Integrated Data Environment	1.000			

Provide a brief description of the Congressional Plus-Up.
The Smart Integrated Data Environment (SIDE) is a concept for a fully interactive, ship-wide integration of physical plant and supporting operations, maintenance, logistics, training, and other data. Decision-aids and automated processes are further integrated to make the data both dynamic and useful at every echelon of the organization. SIDE has potential to increase productivity and, hence, decrease Sailor workload. The funding will be used for the development of a limited capability, shore-based prototype that will prove the concept and provide an automated Engineering Operating Sequencing System (EOSS)/Combat Systems Operating Sequencing Systems (CSOSS) equipment tag-out capability for shore based validation teams. This initial capability will be expanded to incorporate an engineering casualty control exercise component and subsequently will be transitioned to shipboard use and further developed to incorporate the full range of potential capability.

	FY 06			
9837N				
Smart Link Planar Scanner Antenna Modernization	1.000			

Provide a brief description of the Congressional Plus-Up.
This project began as a light-weight, portable shipboard antenna utilizing C-Band mainly for enhancement of crew quality of life. Also under the original effort an additional, interchangeable antenna and feed at the Super High Frequency (SHF) was being designed. The Navy focus has changed to a requirement for designs that are stealthy with low radar cross section for new ships. To meet that requirement, Malibu Research has been retasked under the original effort to investigate an alternate optimum frequency and form factor configurations for an antenna to meet quality of life applications. This task is using a compact planar scanner using a lens scanning antenna technique and will be flush mounted/embedded into the ship structure. The task is therefore to design, fabricate and demonstrate a Super High Frequency (SHF) and a Global Broadcast System (GBS) antenna that will fit into the DOD's present and future information dominance architecture.

	FY 06			
9556C				
Integrated Display & Enhanced Architecture Aegis	5.100			

IDEA permits an operator to immediately reconfigure his/her workstation and assume the responsibilities of any other operator, thereby facilitating real Navy manning reductions while still meeting operational requirements. In addition to reconfigurable display surfaces, IDEA enables HSI improvements for improved decision-making and increased productivity. Allows display components to be developed once and reused to realize cost savings across Navy programs.

R-1 SHOPPING LIST - Item No. 102

EXHIBIT R-2, RDT&E Budget Item Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE
LPD 17 CLASS SYSTEMS INTEGRATION - 0604311N

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Total PE Cost	**8.405**	**11.271**	**5.960**	**4.294**	**0.988**	**1.034**	**0.980**		
LPD 17 Class Systems Integration/2283	**8.405**	**11.271**	**5.960**	**4.294**	**0.988**	**1.034**	**0.980**		
Quantity of RDT&E Articles									

A. Mission Description and Budget Item Justification: The 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. As the 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 Class was designed with unique system configurations that reduce operating and support costs and facilitate operational performance improvements. Therefore, RDT&E funding is being used for continued system engineering and integration efforts, including developing solutions for obsolescence, interface and performance issues. Once in the fleet, feedback from the operational forces for integrating system configurations will be accomplished. In FY 2005-2007, the RDT&E efforts also fund the testing events required for Live Fire Test & Evaluation (LFT&E) and Operational Evaluation (OPEVAL), which are performed on the lead ship as part of the Operational Test and Evaluation Requirements as described in the Test and Evaluation Master Plan (TEMP).

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-5	0604311N - LPD 17 CLASS SYSTEMS INTEGRATION	2283: LPD 17 CLASS SYSTEM INTEGRATION

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Systems Engineering/Integration	1.009	2.149	3.259
RDT&E Articles Quantity			

Continue Naval Expeditionary Warfare Systems Engineering and Integration efforts for unique LPD 17 systems.

	FY 05	FY 06	FY 07
OT&E	7.396	9.122	2.701
RDT&E Articles Quantity			

Continue operational test efforts. Funding allows for Operational Test Force Support, range time, procurement of rounds/targets for testing, interoperability certification and other related costs.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N/BA-5	0604311N - LPD 17 CLASS SYSTEMS INTEGRATION	2283: LPD 17 CLASS SYSTEM INTEGRATION

(U) C. PROGRAM CHANGE SUMMARY

(U) Funding:	FY 2005	FY 2006	FY 2007
FY2006 President's Budget	8.893	11.443	5.955
FY2007 President's Budget	8.405	11.271	5.960
Total Adjustments	-0.488	-0.172	0.005
Other General Provisions	-0.233	-0.052	-0.021
Inflation	0.000	0.000	0.026
Rescissions	0.000	-0.120	0.000
Programmatic Changes	-0.255	0.000	0.000
Total	-0.488	-0.172	0.005

(U) D. OTHER PROGRAM FUNDING SUMMARY

Line Items No. & Name ($M)	FY 2005	FY 2006	FY 2007
BLI 303600 (LPD 17 SCN)	961.7	1326.1	
BLI 303600 (LPD 17 SCN AP)			297.5

(U) E. ACQUISITION STRATEGY

(U) F. MAJOR PERFORMERS

Exhibit R-3 Cost Analysis (page 1)						DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT & E, NAVY/BA-5**			PROGRAM ELEMENT **PE 0604311N**			PROJECT NAME AND NUMBER LPD 17 CLASS SYSTEM INTEGRATION - Project 2283						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY $ Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	
Systems Engineering and Integration	Various	Various	6.144	1.009	01/05	2.149	01/06	3.259	01/07			
Subtotal Product Development			6.144	1.009		2.149		3.259				

Remarks: Systems Engineering and Integration funds efforts associated with developing LPD 17 unique systems, including obsolescence and ship integration efforts.

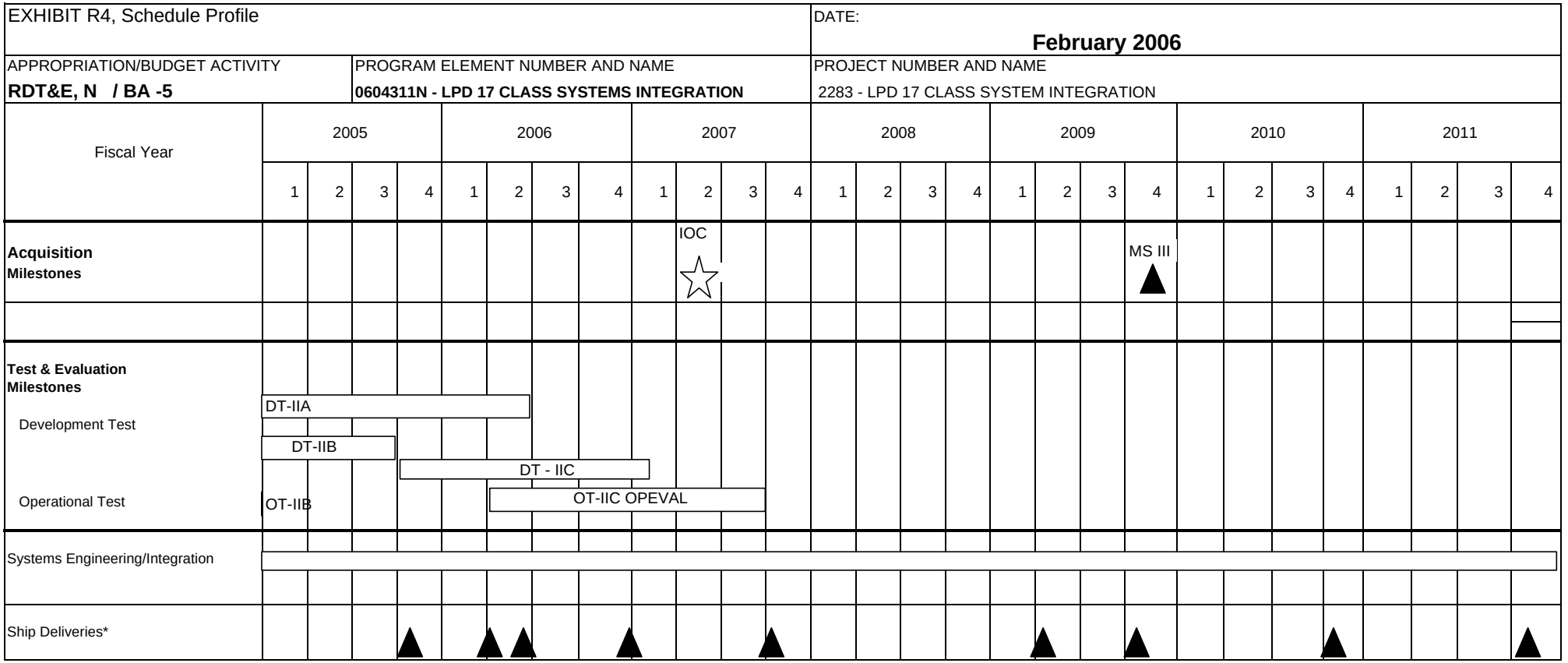
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support				0.000		0.000		0.000				

Remarks:

Exhibit R-3 Cost Analysis (page 2)						DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT & E, NAVY/BA-5**		PROGRAM ELEMENT **PE 0604311N**				PROJECT NAME AND NUMBER LPD 17 CLASS SYSTEM INTEGRATION - Project 2283						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY $ Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OT&E/Interoperability Cert	WX	OPTEVFOR/JITC	9.443	1.809	01/05	9.122	11/05	2.701	11/06			
Test Plan Development	Various	Various		2.400	02/05							
Testing	WX	Various		3.187	02/05							
Subtotal T&E			9.443	7.396		9.122		2.701				
Remarks: Funding to support LPD17 Operational Evaluation planned for FY 2006. This includes test plan development, interoperability certification (JTIC), characterization testing, gun qualification testing as well as costs associated with range time, ordance and targets and related OPTEVFOR support costs as agreed upon in the TEMP.												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management				0.000		0.000		0.000				
Remarks:												
Total Cost			15.587	8.405		11.271		5.960				
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA -5	**0604311N - LPD 17 CLASS SYSTEMS INTEGRATION**		2283 - LPD 17 CLASS SYSTEM INTEGRATION



***Ship Deliveries are under review as a result of Hurricane Katrina**

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604311N - LPD 17 CLASS SYSTEMS INTEGRATION				PROJECT NUMBER AND NAME 2283 - LPD 17 CLASS SYSTEM INTEGRATION			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Developmental Testing (DT-IIB) Started Sep 02		1Q-4Q						
Developmental Testing (DT-IIC)		4Q	1Q - 4Q	1Q				
Operational Evaluation (OT-IIC) (OPEVAL)			2Q - 4Q	1Q - 3Q				
Lead Ship IOC				2Q				
Lead Ship Delivery		4Q						
Milestone III						4Q		

R-1 SHOPPING LIST - Item No. 103

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05**					R-1 ITEM NOMENCLATURE 0604312N Tri-Service Standoff Attack Missile (TSSAM)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**26.497**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
2242 Joint Air to Surface Standoff Missille (JASSM)		**26.497**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JASSM is an Air Force program designated ACAT 1C by the Defense Acquisition Board (DAB) during the Low Rate Initial Production (LRIP) decision. This program provides an affordable 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 or relocatable targets. Aircraft integration is complete on the B-52H, F-16 (Block 50), B-1, and B-2. Objective aircraft include the F-15E, F-16 (Block 40), F-117, and F/A-18E/F. The JASSM-ER increased standoff range will allow us to attack high value targets with precision, deeper into enemy territory while minimizing the threat to the launch aircraft. The threshold integration platform for JASSM-ER is the B-1. Follow-on development/component upgrades include two-way communications and time sensitive targeting (e.g. Data Link) capabilities. 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 Responsibility (TSPR) as defined in the SPS and warrants system performance for 15 years. In late Summer/Fall 2004, OSD/Air Force convened an independent Reliability Enhancement Team (RET) to review JASSM processes and system engineering procedures, and to investigate reliability/quality initiatives. The Air Force is implementing RET recommendations through a combination of detailed design analysis, production quality reviews, and comprehensive ground and flight testing. This activity is reflected in Budget Activity 7, Operational Systems Development, because production (Low Rate Initial Production) started in FY02.

The F/A-18E/F, F/A-18C/D, S-3, P-3 and JSF were designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The Navy funding only provided for unique testing for the Carrier Operability KPP and integration aboard the Navy F/A-18E/F including mission planning. Due to higher Navy prioriities and redundancy in mission, Navy participation in JASSM was terminated in FY05.

FY05 funds are required for termination liabilities (contractor and service commitments).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)				PROJECT NUMBER AND NAME 2242 Joint Air-to-Surface Standoff Missile (JASSM)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**26.497**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JASSM is an Air Force program designated ACAT 1C by the Defense Acquisition Board (DAB) during the Low Rate Initial Production (LRIP) decision. This program provides an affordable long range, conventional air-to-surface, autonomous, precision guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. Aircraft integration is complete on the B-52H, F-16 (Block 50), B-1, and B-2. Objective aircraft include the F-15E, F-16 (Block 40), F-117, and F/A-18E/F. The JASSM-ER increased standoff range will allow us to attack high value targets with precision, deeper into enemy territory while minimizing the threat to the launch aircraft. The threshold integration platform for JASSM-ER is the B-1. Follow-on development/component upgrades include two-way communications and time sensitive targeting (e.g. Data Link) capabilities. 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 Responsibility (TSPR) as defined in the SPS and warrants system performance for 15 years. In late Summer/Fall 2004, OSD/Air Force convened an independent Reliability Enhancement Team (RET) to review JASSM processes and system engineering procedures, and to investigate reliability/quality initiatives. The Air Force is implementing RET recommendations through a combination of detailed design analysis, production quality reviews, and comprehensive ground and flight testing. This activity is reflected in Budget Activity 7, Operational Systems Development, because production (Low Rate Initial Production) started in FY02.

The F/A-18E/F, F/A-18C/D, S-3, P-3 and JSF were designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The Navy funding only provided for unique testing for the Carrier Operability KPP and integration aboard the Navy F/A-18E/F including mission planning. Due to higher Navy prioriities and redundancy in mission, Navy participation in JASSM was terminated in FY05.

FY05 funds are required for termination liabilities (contractor and service commitments).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604312N Tri-Service Standoff Attack Missile (TSSAM)	2242 Joint Air-to-Surface Standoff Missile (JASSM)

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
F/A-18 E/F JASSM Integration		9.997	0.000	0.000
RDT&E Articles Quantity				

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 Operational Test and Initial Operational Capability. 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 H5. Program is terminated in FY2005. FY2005 funding remains to pay termination liability costs.

		FY 05	FY 06	FY 07
JASSM PTM to PC Migration		16.500	0.000	0.000
RDT&E Articles Quantity				

JASSM Mission Planning efforts. The USAF is paying for the Joint Mission Planning System Unique Product Code development and integration. Navy is paying for the JASSM Precision Terminal Module to Personal Computer (PTM to PC) efforts. FY05 funding pays the remaining efforts to complete the contracted PTM to PC efforts as part of the Navy's termination agreement.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604312N Tri-Service Standoff Attack Missile (TSSAM)	2242 Joint Air-to-Surface Standoff Missile (JASSM)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	27.041	0.000	0.000
Current President's Budget:	26.497	0.000	0.000
Total Adjustments	-0.544	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.550		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments	0.006		
Subtotal	-0.544	0.000	0.000

Schedule:

Due to higher Navy priorities, Navy participation in JASSM was terminated in FY05.

Technical:

Not applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604312N Tri-Service Standoff Attack Missile (TSSAM)	2242 Joint Air-to-Surface Standoff Missile (JASSM)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
USAF MPAF	136.388	98.676	184.191	233.799	342.978	292.41	203.984	2,137.961	3,825.643
USAF, RDT&E U.S. Air Force P.E. 0207325F Joint Air to Surface Standoff Missile (JASSM) Extended Range (ER)	43.298	66.042	40.881	9.935					1,063.806

E. ACQUISITION STRATEGY:

All major contracts within the program were awarded through full and open competition. The EMD phase option for JASSM is Cost Plus Award Fee (CPAF). This contract type provides the Government the flexibility to periodically evaluate contractor performance while motivating the contractor to execute a successful program with emphasis on EMD schedule, system performance, and management effectiveness. 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 Average Unit Procurement Price (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&E) program to verify the missile system performance. In its role as facilitator and advisor to the contractor, the Government formally arranges and funds the use of Government flight test support for DT&E. Although funded by the Government, flight test support funds are part of the negotiated commitment between the contractor and the Government ensuring the contractor is able to execute the DT&E program according to the scope of the EMD contract.

Due to higher Navy prioriities and redundancy in mission, Navy participation in JASSM was terminated in FY05. FY05 funds are required for termination liabilities (contractor and service commitments).

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05**					R-1 ITEM NOMENCLATURE 0604329N Small Diameter Bomb (SDB)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**9.513**	**9.816**	**10.021**				
3072 Small Diameter Bomb		**9.513**	**9.816**	**10.021**				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Small Diameter Bomb (SDB) Increment II is a joint interest program providing the warfighter a capability to attack mobile targets in weather. SDB Increment II addresses the following warfighter requirements: attack mobile targets; multiple kills per pass; multiple ordnance carriage; all weather operations; near-precision munitions capability; capability against fixed targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures and provides a migration path to net centric ops capability. Threshold aircraft is the F-15E. Objective aircraft include the F/A-22, B-1, B-2, Joint Strike Fighter (JSF), F-117, F-16, B-52, Predator B, and the Joint Unmanned Combat Air System (JUCAS). SDB Increment II will continue incremental development to pursue network CENTRIC interoperability. SDB Increment II is a key component of the Air Force's Global Strike Task Force CONOP.

The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604329N Small Diameter Bomb (SDB)				PROJECT NUMBER AND NAME 3072 Small Diameter Bomb			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**9.513**	**9.816**	**10.021**				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Small Diameter Bomb (SDB) Increment II is a joint interest program providing the warfighter a capability to attack mobile targets in weather. SDB Increment II addresses the following warfighter requirements: attack mobile targets; multiple kills per pass; multiple ordnance carriage; all weather operations; near-precision munitions capability; capability against fixed targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures and provides a migration path to net centric ops capability. Threshold aircraft is the F-15E. Objective aircraft include the F/A-22, B-1, B-2, Joint Strike Fighter (JSF), F-117, F-16, B-52, Predator B, and the Joint Unmanned Combat Air System (JUCAS). SDB Increment II will continue incremental development to pursue network CENTRIC interoperability. SDB Increment II is a key component of the Air Force's Global Strike Task Force CONOP.

The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)	3072 Small Diameter Bomb

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		9.513	9.816	10.021
RDT&E Articles Quantity				

FY05 - FY 07 funding is to perform risk reduction pre-integration testing during Increment II to include Seeker and Other Trade Studies, Joint Strike Fighter (JSF) Fit checks, Shipboard Suitability, Electromagnetic Environmental Effects, System Safety, Climatic/Dynamic Environments, Structures/Loads/Materials, Separations Wind Tunnel, Catapult/Arrested Landings testing, weapon data link network efforts, and multiple weapon carriage system requirements. The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)	3072 Small Diameter Bomb

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	9.843	9.965	9.958
Current President's Budget	9.513	9.816	10.021
Total Adjustments	-0.330	-0.149	0.063
Summary of Adjustments			
Congressional Reductions		-0.104	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.184		
Congressional Increases			
Economic Assumptions		-0.045	0.097
Miscellaneous Adjustments	-0.146		-0.034
Subtotal	-0.330	-0.149	0.063

Schedule:

The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)	3072 Small Diameter Bomb

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
RDT&E (PB07)									
US Air Force (USAF) PE 0604329F (SDB)	73.573	63.521	104.08	143.723	123.533	128.009	76.895	322.743	1036.077
Missile Procurement (PB07)									
US Air Force (USAF) PE 0207327F (SDB)	29.122	53.336	99.062	96.386	148.23	164.543	137.449	481.091	1209.219
Quantity	199	567	1343	1395	3212	3558	2667	11059	24000

E. ACQUISITION STRATEGY:

The Air Force selected Boeing in August 2003 as the SDB Increment I prime contractor following a 24-month CAD. Currently, SDB Increment I is in Low Rate Initial Production (LRIP). Successfully achieved Milestone C in April 2005. Small Diameter Bomb (SDB) Increment II has not yet been awarded to a prime contractor; however, it is planned to be a competitively awarded cost-type development effort. The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

The Navy funding will support pre-integration risk reduction efforts for SDB Phase II, such as aircraft integration, ship suitability, studies and analysis, and program management and government in-house support. These efforts will be performed on several cost-type contracts or through cost reimbursable work requests to government activities and contractors.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604329N Small Diameter Bomb (SDB)			PROJECT NUMBER AND NAME 3072 Small Diameter Bomb							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
Aircraft Integration	SS/CPFF	EDO Mtech, Huntingdon, PA		0.101	01/05						0.101	0.101
											0.000	
Product Development	C/CPFF	TBD				1.817	05/06	3.363	12/06		5.180	
Ship Suitability	Various	Various	4.180			0.334	11/05	0.500	11/06		5.014	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			4.180	0.101		2.151		3.863		0.000	10.295	

Remarks: The Air Force's approved acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering SDD. The Navy funding will provide for risk reduction activities, Navy participation in common efforts, and evaluation and development of Navy-unique and interoperability requirements.

Studies & Analyses	SS/CPFF	QNT/FMDI, Rome, NY	0.103	2.333	04/05						2.436	2.436
Studies & Analyses (APL)	SS/CPFF	JHU APL, Baltimore, MD		1.600	12/04	0.500	12/05	0.500	12/06		2.600	2.600
Studies & Analyses (Raytheon)	SS/CPFF	Raytheon, Tuscon, AZ		2.000	12/04	0.600	12/05		12/06		2.600	2.600
Studies & Analyses	Various	Various		0.623	12/04						0.623	
Software Development	SS/CPFF	Boeing, St. Louis				3.400	12/05	2.500	12/06		5.900	5.900
											0.000	
											0.000	
											0.000	
Subtotal Support			0.103	6.557		4.500		3.000		0.000	14.160	

Remarks:
Studies and Analyses include Navy activities to define CONOPS and better define Navy-specific and interoperability requirements, such as Weapon Data Link ACTD, Seeker Trade Studies, and Data Link Trade Studies.

The Weapon Data Link software development effort develops requirements, establishes design architecture and dramatically reduces risk for integration of SDB Increment II WDLN ICD into JSF. H5E F/A-18 SCS will be utilized as a surrogate test bed to incorporate WDLN ICD.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604329N Small Diameter Bomb (SDB)				PROJECT NUMBER AND NAME 3072 Small Diameter Bomb						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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:												
Contractor Engineering Support	RX	Various		0.460	11/04	0.200	11/05	0.200	11/06		0.860	
Government Engineering Support	WX	Various	0.121	2.033	11/04	2.403	11/05	2.383	11/06		6.940	
Program Management Support	Misc	Various		0.262	11/04	0.362	11/05	0.375	11/06		0.999	
Travel	Misc	Various	0.070	0.100	10/04	0.200	10/05	0.200	10/06		0.570	
											0.000	
											0.000	
Subtotal Management			0.191	2.855		3.165		3.158		0.000	9.369	
Remarks:												
Total Cost			4.474	9.513		9.816		10.021		0.000	33.824	
Remarks:												

R-1 SHOPPING LIST - Item No. 105

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)	3072 Small Diameter Bomb

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
Navy Seeker and Other Trade Studies																																
Carrier Suitability																																
Ground and Fit Checks																																
Product Development																																

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604329N Small Diameter Bomb (SDB)				PROJECT NUMBER AND NAME 3072 Small Diameter Bomb			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Navy Only Increment II								
Seeker and Other Trade Studies		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q			
Carrier Suitability		1Q - 4Q	1Q - 4Q	1Q - 4Q				
Ground Testing and Fit Checks			3Q - 4Q	1Q - 4Q	1Q-3Q			
Product Development			3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		

R-1 SHOPPING LIST - Item No. 105

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5**			R-1 ITEM NOMENCLATURE 0604366N/STANDARD MISSILE IMPROVEMENTS				
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
Total PE Cost	**110.568**	**148.532**	**186.144**	**221.751**	**237.271**	**159.471**	**67.458**
0439/Standard Missile Improvements	**56.329**	**24.551**	**8.039**	**15.762**	**7.887**	**0.290**	**0.390**
3092/Standard Missile 6 Program	**49.890**	**118.881**	**178.105**	**205.989**	**229.384**	**159.181**	**67.068**
9559/MK-41 Open Architecture Upgrades	**2.866**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9560/Real Time Image Processing - Silicon Brain	**1.483**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9999/Congressional Adds	**0.000**	**5.100**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. In FY04 a new program started 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.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS				PROJECT NUMBER AND NAME 0439 Standard Missile Improvement			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**56.329**	**24.551**	**8.039**	**15.762**	**7.887**	**0.290**	**0.390**	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Funding Includes FY05 Congressional Add; $3.5M Advanced Missile data link.

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 1821, 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. In FY04 a new program started 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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	0439 Standard Missile Improvement

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.150	0.150	0.293
RDT&E Articles Quantity			

Studies:
FY05/FY06/FY07: Failure analyses, technology assessments, analyses of missile capablity vs. threat, and long-range planning to keep pace with the evolving and proliferating threat.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	32.339	11.125	0.000
RDT&E Articles Quantity			

Advanced Surface Missile Demonstration.
FY05 - Continue transition of advanced technology, risk reduction, mitigation activities, and preparation for feasibility demo.
FY06 - Complete transition of advanced technology, risk reduction, mitigation activities, and preparation for execution of feasibility demo.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	11.342	10.776	0.000
RDT&E Articles Quantity			

Replacement of obsolete digital signal processor for SM-2 Block IIIB.
FY 05: Round level integration.
FY06: Critical Design Review.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	0439 Standard Missile Improvements

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.500	7.746
RDT&E Articles Quantity			

Interrupted Continuous Wave Illumination (ICWI)
FY:06/07: To integrate (ICWI) functionality into the DD (X) ship combat system.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.500	0.000	0.000
RDT&E Articles Quantity			

Advance Missile Data Link: FY05- Improving the link to evaluate interrupted continuous wave illumination for application to DDX.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	8.998	0.000	0.000
RDT&E Articles Quantity			

Sea Base Terminal: FY05 - Conduct a demonstration of a capability to engage and intercept unitary short range ballistic missiles using an Aegis ship with a modified Linebacker Computer Program and modified SM-2 BLK IV missile against a Lance BM target. The FY05 major tasks to be completed are modification of and firing authorization for the Linebacker Computer Program and the modification and build-up of 2 modified SM-2 BLK IV missile rounds for an FY06 test.

R-1 SHOPPING LIST - Item No. 106

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	0439 Standard Missile Improvements

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Presidents Budget (PB06)	52.780	24.926	8.047
Presidents Budget (PB07)	56.329	24.551	8.039
Total Adjustments	3.549	-0.375	-0.008
Summary of Adjustments			
Other General Provisions	-1.449	-0.375	
BTR	4.998		
Other misc. changes			-0.008
PBD 606 CIVPERS Pay Raise Rate			
Subtotal	3.549	-0.375	-0.008

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 106

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	0439 Standard Missile Improvements

D. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

E. ACQUISITION STRATEGY: *

Not Applicable

F. MAJOR PERFORMERS: **

Commencing in FY04 Raytheon Missile Systems, Tucson, AZ is the Prime contractor for a live fire demonstration for Advanced Surface Missile System (09/04).

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

R-1 SHOPPING LIST - Item No. 106

Exhibit R-3 RDT&E, N Project Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604366N/STANDARD MISSILE IMPROVEMENTS

PROJECT NUMBER AND NAME: 0439 Standard Missile Improvements

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Design and Analysis												
	SS/CPAF	Raytheon	54.026	52.574	11/04	14.153	11/05	5.094	11/06	Continuing	Continuing	
	PR	JHU/APL	1.640	0.380	11/04	1.625	11/05	0.245	11/06	Continuing	Continuing	
	MP	MIT	0.050							Continuing	Continuing	
	WX	NSWC Dahlgren	785.794	0.250	11/04	2.500	11/05	1.350	11/06	Continuing	Continuing	
	WX	NSWC/IH	0.250	0.060	11/04					Continuing	Continuing	
	WX	NAWC China Lake	0.510							Continuing	Continuing	
	WX	NSWC /PHD	0.220	0.040	12/04					Continuing	Continuing	
	PR	Lockheed Martin		3.000	12/04	2.500	11/05	1.350	11/06	Continuing	Continuing	
	WX	CNO	0.010									
	PD	CMDP	4.795									
	PR	CAN	0.000									
	WX	NSWC/CRANE	0.050									
	WX	ONR	0.000									
	WX	NWS EARLE	0.000									
	WX	COMPTEVFOR	0.100									
	WX	CARDEROCK	0.050									
	WX	WMSR				2.548	11/05			Continuing	Continuing	
	PR	BAE		0.025	01/05	0.075	11/05			Continuing	Continuing	
	WX	JSPO				0.200	11/05			Continuing	Continuing	
Subtotal Product Development			847.495	56.329		23.601		8.039		0.000	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 106

Exhibit R-3 RDT&E Project Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604366N/STANDARD MISSILE IMPROVEMENTS

PROJECT NUMBER AND NAME: 0439 Standard Missile Improvements

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
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	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											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:

R-1 SHOPPING LIST - Item No. 106

Exhibit R-3 RDT&E Project Cost Analysis (page 3)											DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 0439 Standard Missile Improvements							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	WX	NSWC Port Hueneme	0.145			0.175	11/05				Continuing	Continuing	
	WX	WSMR	0.000								Continuing	Continuing	
Operational Test & Evaluation													
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Subtotal T&E			0.145	0.000		0.175		0.000		0.000	Continuing		
Remarks:													
Contractor Engineering Support	C/CPAF	various	1.212			0.750	11/05				Continuing	Continuing	
Government Engineering Support													
Program Management Support	C/CPAF	various	1.824								Continuing	Continuing	
Travel			0.048			0.025					Continuing	Continuing	
Transportation													
SBIR Assessment													
Subtotal Management			3.084	0.000		0.775		0.000		0.000	Continuing		
Remarks:													
Total Cost			850.724	56.329		24.551		8.039		0.000	Continuing		
Remarks:													

R-1 SHOPPING LIST - Item No. 106

EXHIBIT R-2a, RDT&E Project Justification					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /**			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program	
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**49.890**	**118.881**	**178.105**	**205.989**	**229.384**	**159.181**	**67.068**
3092/Standard Missile 6 Program	**49.890**	**118.881**	**178.105**	**205.989**	**229.384**	**159.181**	**67.068**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Funding includes FY05 Congressional Add: $5.0M Insensitive munition improvements.

This project addresses the Navy's requirement for an extended range shipboard air defense missile. The SM-6 Extended Range Active Missile (ERAM) is the Navy's transformational enabler for the Sea Shield Operational Concept and enables the opportunity for Sea Basing Sea Strike. This effort includes risk reduction, and SD&D design, development, insensitive munitions improvement, transition to production and operational test of the latest STANDARD Missile with the kinematic performance to defeat current and projected threats that possess low altitude, high altitude, high velocity and maneuver characteristics at the max kinematic range of the missile.

This program leverages existing missile technology and advanced missile technology. It aligns missile technology roadmaps across the Services (NAVSEA, NAVAIR, USAF, USMC and USA) and missile variants within the Services, taking 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 manned-fixed and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight, thereby contributing to the continuous protection of forward deployed ground maneuver forces as well as theater rear assets as discussed in the Joint TAMD MNS, DPG, QDR, TAMD Capstone Requirements Document, Forward From the Sea, Joint Vision 2010/2020, the 2002/2003 Naval Transformational Roadmap and the Operational Requirements Document for SM-6 Extended Range Active Missile (ERAM).

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	3092/Standard Missile 6 Program

B. Accomplishments/Planned Program

	FY05	FY06	FY 07
Accomplishments/Effort/Subtotal Cost	7.234	11.960	9.900
RDT&E Articles Quantity			

SM-6/AWS & VLS Integration
FY05/FY06/FY07:Aegis Weapon System and MK 41 Vertical Launch System integration.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	37.656	100.021	149.205
RDT&E Articles Quantity			

Missile development.
FY 05: Preliminary Design Review
FY 06: Design Readiness Review (Critical Design Review)
FY07: Ground Integration and Test/Environmental Tests/Flight Test Round Integration and Round Level Test
* This effort is also integrated with and funded from the Advanced Surface Missile System element of Project 0439

	FY05	FY06	FY 07
Accomplishments/Effort/Subtotal Cost	5.000	6.900	19.000
RDT&E Articles Quantity			

SM-6 Insensitive Munitions. FY05 - Analyze and conduct tests utilizing COTS.
FY06 - Conduct feasibility studies utilizing COTS.
FY07 - Funding used for Research and Development of new technologies to solve high-end problems with data provided from analysis of COTS.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	3092/SM-6

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Presidents Budget (PB06)	53.574	120.708	180.576
Presidents Budget (PB07)	49.890	118.881	178.105
Total Adjustments	-3.684	-1.827	-2.471
Summary of Adjustments			
Other General Provisions	-1.289	-1.827	
PBD 604 Inflation			
Other misc. changes			0.029
Programmatic changes			-2.500
ATR	-2.395		
Subtotal	-3.684	-1.827	-2.471

Schedule: SSD CONTRACT AWARDED IN SEPTEMBER 2004. MS B DAB WAS HELD JUNE 2004.

Technical: TBD.

R-1 SHOPPING LIST - Item No. 106

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	3092/SM6

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
WPN 2234	0.000	0.000	0.000	0.000	99.974	133.769	145.600	CONT.	CONT.
QTY					15	25	30		

E. ACQUISITION STRATEGY: *

SM-6 Acquisition Strategy signed by OSD AT&L 3 March 2004

F. MAJOR PERFORMERS: **

Raytheon Missile Systems, Tucson, Arizona.: SM-6 SD&D Contract awarded September 2004

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

R-1 SHOPPING LIST - Item No. 106

Exhibit R-3 RDT&E Project Cost Analysis (page 1)						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/SM-6						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Component Development												
Design and Analysis	PR	RAYTHEON	25.115	32.966	11/04	98.239	11/05	152.727	11/06			
	PR	JHU/APL, Laurel MD	2.200	4.090	11/04	3.500	11/05	4.000	11/06	Continuing	Continuing	
	PR	MIT Lincoln Lab, Lexington, M	0.050	0.300	11/04	0.100	11/05	0.100	11/06	Continuing	Continuing	
	WX	NAWC WD China Lake, CA	0.100	0.050	11/04	0.100	11/05	0.100	11/06	Continuing	Continuing	
	WX	NSWC Dahlgren, VA	0.285	1.345	11/04	1.500	11/05	1.210	11/06	Continuing	Continuing	
	WX	NSWC Indian Head, MD	0.038	0.200	11/04	0.000	11/05	0.000	11/06	Continuing	Continuing	
	WX	NSWC Port Hueneme, CA	0.546	0.600	11/04	0.500	11/05	0.500	11/06	Continuing	Continuing	
	WX	NSWC Crane, IN		0.020	11/04	0.025	11/05	0.040	11/06	Continuing	Continuing	
	MP	JSPO/EGLIN	1.868	0.000	11/04	0.000	11/05	0.000	11/06			
	PR	LOCKHEED MARTIN	3.854	0.000	11/04	0.000	11/05	0.000	11/06			
	WX	NSWC Corona	0.020	0.025	11/04	0.032	11/05	0.078	11/06			
	RX	ONR	0.150	0.150	11/04	0.150	11/05	0.150	11/06			
		NRL	0.090	0.000	11/04	0.150	11/05	0.150	11/06			
	WX	COMOPTEVFOR	0.135	0.115	11/04	0.150	11/05	0.150	11/06			
	WX	CARDEROCK		0.150	01/05							
	PR	BAE		0.200	11/05							
	MP	Army, Redstone Arsenal		0.050	04/05							
	WX	NAWCAD, Patuxent River		0.270	11/05							
Ship Integration	PR/WX	various	4.320	4.100	01/05	8.000	11/05	6.700	11/06	Continuing	Continuing	
	PR/WX	various	1.230	3.134	01/05	3.360	11/05	3.200	11/06			
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			40.001	47.765		115.806		169.105		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 106

Exhibit R-3 RDT&E Project Cost Analysis (page 2)													DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS				PROJECT NUMBER AND NAME 3092/SM-6						
Cost Categories	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
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	
												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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Exhibit R-3 RDT&E Project Cost Analysis (page 3)						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/SM-6						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NSWC Port Hueneme, CA	0.000	0.200	11/04	1.000	11/05	5.500	11/06	Continuing	Continuing	
	WX	White Sands Missile Range,	0.000	0.050	11/04	0.100	11/05	0.200	11/06	Continuing	Continuing	
	WX	PMRF				0.400	11/05	1.700	11/06			
Targets												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.250		1.500		7.400		Continuing	Continuing	
Remarks												
Contractor Engineering Support	CPAF	various	1.300	1.775	11/04	1.500	11/05	1.500	11/06	Continuing	Continuing	
Government Engineering Support												
Program Management Support												
Travel			0.053	0.100		0.075		0.100		Continuing	Continuing	
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			1.353	1.875		1.575		1.600		Continuing	Continuing	
Remarks:												
Total Cost			41.354	49.890		118.881		178.105		Continuing	Continuing	
Remarks:												

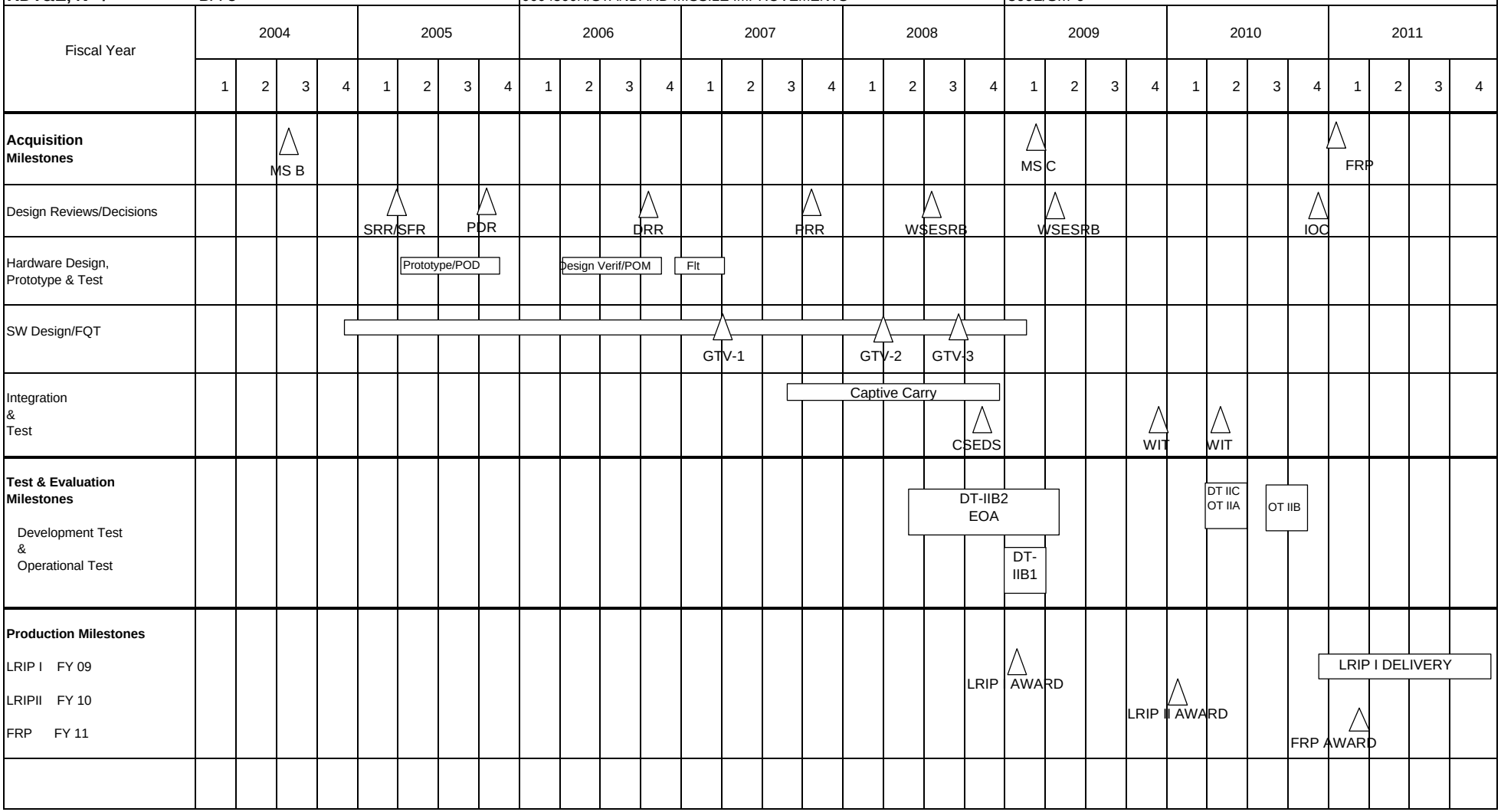
R-1 SHOPPING LIST - Item No. 106

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N /** BA-5

PROGRAM ELEMENT NUMBER AND NAME: 0604366N/STANDARD MISSILE IMPROVEMENTS

PROJECT NUMBER AND NAME: 3092/SM-6



R-1 SHOPPING LIST - Item No. 106

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

Exhibit R-4a, Schedule Detail					DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**				PROJECT NUMBER AND NAME 3092/SM-6			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acquisition Strategy							
J&A							
Milestone II (MSII)							
Contract Preparation							
SRR	1Q						
SFR	1Q						
Preliminary Design Review (PDR)	4Q						
Design Readiness Review		3Q-4Q					
CSEDS				4Q			
WSESRB				3Q	2Q		
Developmental Testing (DT-IIA1)			1Q-4Q	1Q-4Q			
Developmental Testing (DT-IIA2)					1Q-4Q		
Preproduction Readiness Review (PRR)			4Q				
Milestone C (MS C)					1Q		
Start Low-Rate Initial Production I (LRIP I)					1Q		
Developmental Testing (DT-IIB1)					1Q		
Developmental Testing (DT-IIB2)				2Q-4Q	1Q-2Q		
Start Low-Rate Initial Production II						1Q	
Developmental Testing (DT-IIC/OTIIA)						2Q	
Operational Testing (OT-IIB)						3Q-4Q	
Low-Rate Initial Production I Delivery						4Q	1Q-4Q
Low-Rate Initail Production II Delivery							4Q
IOC						4Q	
Full Rate Production (FRP) Decision							1Q
Full Rate Production Start							1Q
First Deployment							1Q

R-1 SHOPPING LIST - Item No. 106

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604366N/STANDARD MISSILE IMPROVEMENTS	9999 / Congressional Adds : Various

CONGRESSIONAL PLUS-UPS: $5.100

	FY 06			
9559C				
MK41 Vertical Launcing System Open Architecture	2.800			

Initiate the redesign and requirement development of the MK41 VLS Launch Control System.

	FY 06			
9838N				
Alternative Thermal Battery Program	1.000			

Conduct a trade study analysis on an alternative thermal battery production capability

	FY 06			
9839N				
Insensitive munition improvements.	1.300			

Conduct feasibility studies utilizing COTS.

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**						R-1 ITEM NOMENCLATURE **0604373N Airborne Mine Countermeasures**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Total PE Cost	**461.260**		**50.600**	**53.837**	**56.145**	**36.616**	**11.198**	**23.760**	**51.001**	**Continuing**	**Continuing**
Airborne Mine Hunt System / 0529	**206.747**		**2.400**	**3.369**	**10.965**	**5.107**	**2.372**	**10.077**	**20.543**	**Continuing**	**Continuing**
ALMDS / 2047	**81.555**		**7.288**	**11.365**	**11.620**	**6.485**	**1.638**	**11.718**	**25.740**	**Continuing**	**Continuing**
OASIS / 2427/2883	**53.452**		**10.898**	**13.775**	**12.094**	**4.081**	**0.000**	**0.000**	**2.776**	**Continuing**	**Continuing**
AMNS / 2473	**115.814**		**27.334**	**23.528**	**19.168**	**17.066**	**4.350**	**0.000**	**0.000**	**0.000**	**207.260**
C4I, Tactics and Mission Planning / 4026	**0.000**		**1.234**	**1.800**	**2.298**	**3.877**	**2.838**	**1.965**	**1.942**	**Continuing**	**Continuing**
SNUITT / 9197	**3.692**		**1.446**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**5.138**
Quantity of RDT&E Articles	**9**		**5**								**14**

FY05 Congressional Adds: SNIUTT ($1.5M)

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 Strike Group/Expeditionary Strike Group (CSG/ESG) 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.

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	R-1 ITEM NOMENCLATURE **0604373N Airborne Mine Countermeasures**

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	51.450	54.659	50.998
FY07 President's Budget	50.600	53.837	56.145
Total Adjustments	(0.850)	(0.822)	5.147
Summary of Adjustments:			
Inflation	0.000	0.000	0.257
Fuel Rates	0.000	0.000	0.033
Pay Rates	0.000	0.000	0.039
Programmatic Changes	(0.850)	(0.822)	4.818
Subtotal	(0.850)	(0.822)	5.147

Schedule: 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. **AN/AQS-20A** In response to a delay in a test ready MH-60S (deployment platform) and expansion of test/integration requirements, from PB05, the program schedule has been modified to incorporate platform of opportunity (MH-53) CT & DT testing during FY03 through FY04 to mitigate impacts of MH-60S availability. MH-60S DT and MH-60S OT testing will be conducted during FY06 and FY07 in support of an FY07 FRPD. IOC will now occur by December 07. **ALMDS** Following Congressional reduction of FY04 procurement units, SH-60F Developmental Testing (DT-IIC) is scheduled for FY05, MH-60S Developmental Testing (DT-IID/E is scheduled for FY07, and Operational Testing (OT) is scheduled for FY08. MS C and LRIP decision is scheduled for 3Q FY05 to support IOC. A revised Acquisition Program Baseline with updated schedule parameters from April 02 was signed on 29 November 02. **OASIS** Schedule adjusted to meet availability of MH-60S helicopter for development testing. MH-53E alternate platform testing will be completed in FY2006 along with an Operational Assessment (OA). MH-60S CT will be completed in FY06, DT testing in FY07, and OT has moved to FY08. LRIP production will begin in FY07. **AMNS** MH-60S Block 2B aligned AMNS schedule extends SD&D phase out to end of FY07 but preserves FY07 IOC. MS C will be based on Alternate Platform tests to be conducted in FY05 and FY06. **RAMICS** MH-60S Block 2B aligned RAMICS extends SD&D phase out to end of FY08 and IOC from FY07 to FY10.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N/Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **0529 Airborne Mine Hunt Systems**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**206.747**		**2.400**	**3.369**	**10.965**	**5.107**	**2.372**	**10.077**	**20.543**	**Continuing**	**Continuing**
RDT&E Articles Qty	**3**										**3**

(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 mine hunting sonar component for the Remote Mine hunting System (RMS). The AN/AQS-20A will be developed to meet the requirements of the Organic MCM platforms.

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	4.750	3.421	4.797
FY07 President's Budget	2.400	3.369	10.965
Total Adjustments	(2.350)	(0.052)	6.168
Summary of Adjustments:			
Inflation	0.000	0.000	0.049
Fuel Rates	0.000	0.000	0.033
Programmatic Changes	(2.350)	(0.052)	6.086
Subtotal	(2.350)	(0.052)	6.168

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N , BA-5	**0604373N Airborne Mine Countermeasures**	**0529 Airborne Mine Hunt Systems**

B. Accomplishments/Planned Program

Product Development		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.586	1.874	6.955
RDT&E Articles Quantity				

Complete EDM fabrication, including incorporation of Electro-Optic Identification (EOID) sensor capabilities.
Conduct EDM testing with maintainability requirements and refurb EDMs. Acquire EOID test units.
Commence Pre-Planned Product Improvement (P3I) to improve FLS/VSS sensors.
Develop CAD/CAC algorithm fusion.
Develop environmental data collection capabilities.

Support /T&E		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.254	1.020	3.350
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 parallel MH-60S Console test and common console/Aircraft Integration. Conduct platform of opportunity (MH-53) testing, i.e., CT, DT, AUTEC Tests in addition to WSIT CT and AFCS.
Conduct testing on P3I improvements to the sonar.

Management		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.560	0.475	0.660
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.
Develop ILS & supportability products and engineering support for P3I improvements

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N , BA-5	**0604373N Airborne Mine Countermeasures**	**0529 Airborne Mine Hunt Systems**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
424800 OPN									
AQS-20A	42.290	26.603	46.207						

(U) D. ACQUISITION STRATEGY: *

Upon successful completion of DT and MS C, Sole Source MH-60S systems LRIP procurement will begin in FY05 & FY06 with a Full Rate Procurement Option following a Full Rate Production Decision Review (FRPDR) in FY07. Full competition for FRP will begin in FY08.

AN/AQS-20A acheived Milestone C on 10 May 2005.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **0529 Airborne Mine Hunt Systems**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	SS/CPIF	Raytheon, Portsmouth, RI	26.400			0.586	10/04	1.674	10/05	4.455	10/06	Continuing	Continuing	
Hardware/Software Development	C/CPFF	Raytheon, Portsmouth, RI	60.150									0.000	60.150	
Hardware/Software Development	WX	NSWC, Panama City, FL	4.966					0.200	10/05	2.500	10/06	Continuing	Continuing	
Hardware/Software Development	C/FP	Northrop, Grumman	4.572									0.000	4.572	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			96.088			0.586		1.874		6.955		Continuing	Continuing	

Remarks:

Engineering Services	WX	NSWC, Panama City, FL	28.379			0.519	10/04	0.320	10/05	0.500	10/06	Continuing	Continuing	
Engineering Services	C/CPFF	Raytheon, Portsmouth, RI	3.286					0.200	10/05	0.900	10/06	Continuing	Continuing	
Engineering Services	VAR	Various	53.168			0.150	10/04	0.200	10/05	0.500		0.000	53.518	
Engineering Services	SS/CPIF	Raytheon, Portsmouth, RI	3.264			0.200	10/04					0.000	3.464	
ILS Functions	WX	NSWC, Panama City, FL	5.769					0.200	10/05	0.230	10/06	Continuing	Continuing	
ILS Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.826					0.050	10/05	0.720	10/06	Continuing	Continuing	
ILS Functions	VAR	Various	0.736			0.245	10/04					0.000	0.981	
Subtotal Support			95.428			1.114		0.970		2.850		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **0529 Airborne Mine Hunt Systems**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E Functions	WX	NSWC, Panama City	9.868									Continuing	Continuing	
T&E Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.984					0.050	10/05	0.500	10/06	Continuing	Continuing	
T&E Functions	VAR	Various	1.443			0.140	10/04					0.000	1.583	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal T&E			12.295			0.140		0.050		0.500		Continuing	Continuing	
Remarks:														
Management Support			2.547			0.500	10/04	0.450	10/05	0.630	10/06	Continuing	Continuing	
Travel			0.389			0.060	10/04	0.025	10/05	0.030	10/06	Continuing	Continuing	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Management			2.936			0.560		0.475		0.660		Continuing	Continuing	
Remarks:														
Total Cost			206.747			2.400		3.369		10.965		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 107

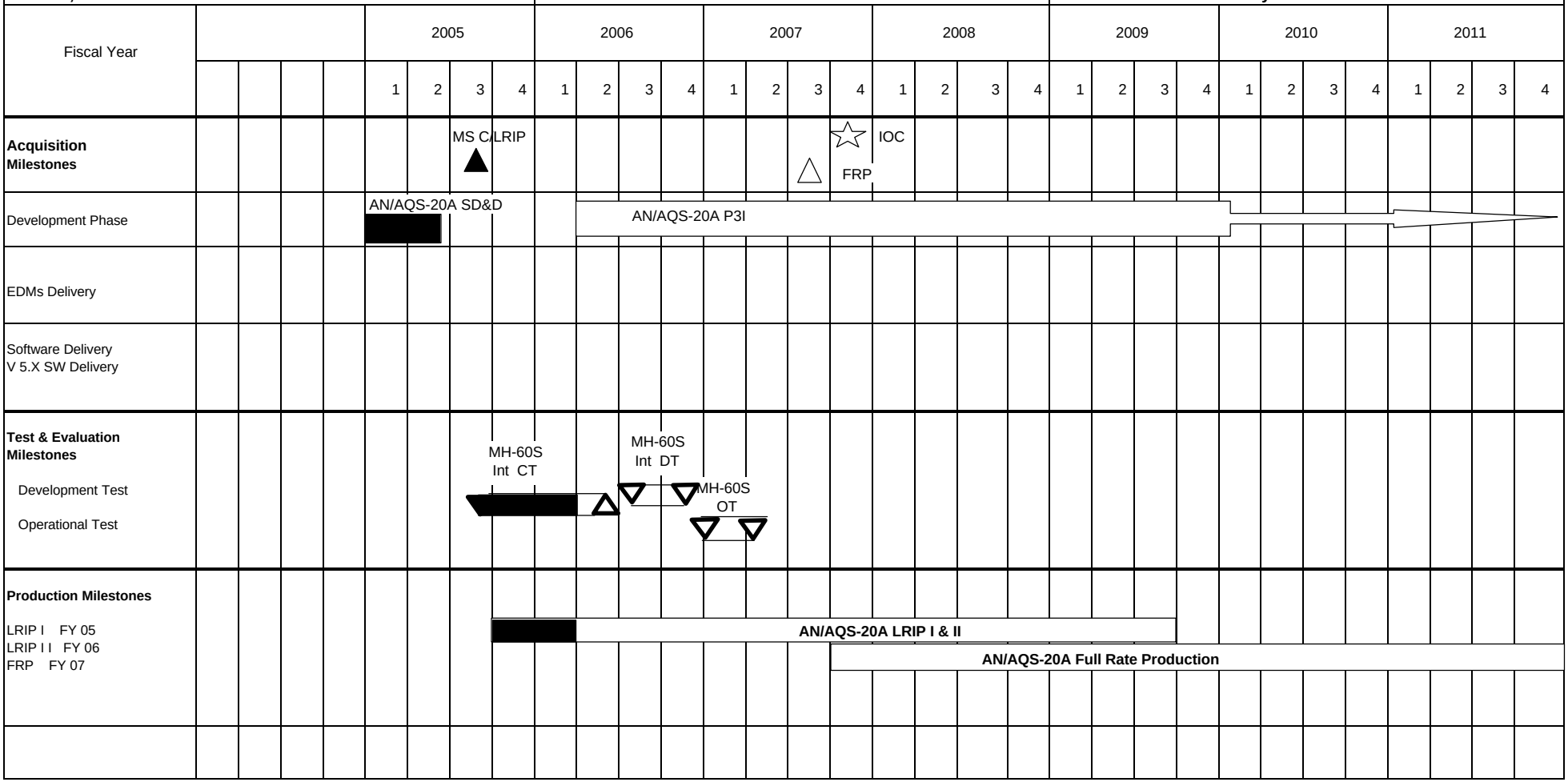
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **0529 Airborne Mine Hunt Systems**



R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **0529 Airborne Mine Hunt Systems**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MH-60S Int CT		3Q	1Q-2Q					
MH-60S Int. DT			3Q-4Q					
Milestone C (MS C)/LRIP		3Q						
MH-60S OT				1Q-2Q				
Low Rate Intial Prodcution I & II		4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
AN/AQS-20A Full Rate Production (FRP) Decision				3Q				
IOC				4Q				
AN/AQS-20A Full Rate Production				4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
AN/AQS-20A P3I			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **2047 Airborne Laser Mine Detection System**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**81.555**		**7.288**	**11.365**	**11.620**	**6.485**	**1.638**	**11.718**	**25.740**	**Continuing**	**Continuing**
RDT&E Articles Qty	**3**										

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

The Airborne Laser Mine Detection System (ALMDS), designation AN/AES-1, is a light detection and ranging (LIDAR) Airborne Mine Countermeasures (AMCM) high area coverage system that detects, classifies, and localizes floating and near-surface , moored sea mines. The system is deployed from the MH-60S helicopter and will provide organic airborne mine defense to the battle force. The system represents a capability that does not exist in the current Mine Countermeasures (MCM) inventory. ALMDS first spiral development phase, very shallow water capability, begins in FY2006.

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	3.493	11.539	11.882
FY07 President's Budget	7.288	11.365	11.620
Total Adjustments	3.795	(0.174)	(0.262)
Summary of Adjustment			
Inflation	0.000	0.000	0.053
Pay Rates	0.000	0.000	0.008
Programmatic Changes	3.795	(0.174)	(0.323)
Subtotal	3.795	(0.174)	(0.262)

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2047 Airborne Laser Mine Detection System**

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.435	7.935	7.168
RDT&E Articles Quantity				

LRIP development, and software coding.
Continue to conduct technical studies, MH-60S Interface, C4I Interface, and MEDAL.
Design and implement performance enhancements.
Develop algorithms and redesign system for very shallow water capability.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.375	0.960	0.627
RDT&E Articles Quantity				

Integrated Logistics Support and delivery of Technical Data Package
Continue to monitor contractor performance and technical review of CDRLs.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.478	2.470	3.825
RDT&E Articles Quantity				

Developmental Testing-IIC (FY05)
Risk Reduction Flight (FY06)
DT-IID and WSIT CT (FY07)
DT-IIE (FY07/FY08)
Operational Testing (OPEVAL) (FY08)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2047 Airborne Laser Mine Detection System**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
424800 OPN	20.561	5.800	22.192						

(U) D. ACQUISITION STRATEGY:

The first LRIP lot of two units will be awarded as a new sole-source contract to the SD&D contractor in FY05. This will be a Fixed-Price Incentive (FPI) contract with cost and schedule incentives. LRIP Lot 2 will be for four units procured in FY07 (combined N75 and N76 funding) as an FFP option to LRIP 1; and full-rate production (FRP) Lot 1 will also be an FFP option to LRIP 1. The Contractor will provide the FPI and FFP cost proposals based upon the March 15, 2005 ALMDS Technical Data Package (TDP). Changes from this baseline configuration to incorporate technical improvements will be accepted as Engineering Change Proposals (ECPs) and will renegotiate the target cost of the FPI base contract and FFP options. FRP Lot 2 will be a new, competitively awarded, FFP contract; and FRP Lots 3 and 4 will be FFP options to the FRP 2 contract.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2047 Airborne Laser Mine Detection System**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WX	NSWC, Panama City	0.565									0.000	0.565	
Hardware/Software Development	WX	NSWC, PC, (Prime Contractor)	22.742			0.719	10/04	5.158	10/05	2.607	10/06	Continuing	Continuing	
Hardware/Software Development	RX	Metron	0.625									0.000	0.625	
Hardware/Software Development	RX	SAIC	0.200									0.000	0.200	
													0.000	
													0.000	
													0.000	
													0.000	
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													0.000	
													0.000	
Subtotal Product Development			24.132			0.719		5.158		2.607		Continuing	Continuing	
Remarks:														
Engineering Services	WX	NSWC, Panama City	8.887			1.102	10/04	0.957	10/05	0.552	10/06	Continuing	Continuing	
Engineering Services	WX	NSWC, PC, (Prime Contractor)	11.850			1.297	10/04	1.175	10/05	1.835	10/06	0.000	16.157	
Engineering Services	VAR	Various	6.900			0.194	10/04	1.257	10/05	2.495	10/06	Continuing	Continuing	
Engineering Services	RX	Various	3.322									Continuing	Continuing	
ILS Functions	WX	NSWC, Panama City	1.446			0.250	10/04	0.228	10/05	0.300	10/06	Continuing	Continuing	
ILS Functions	WX	NSWC, PC, (Prime Contractor)	5.725							0.125	10/06	Continuing	Continuing	
ILS Functions	VAR	Various/NRL Stennin	1.062									0.000	1.062	
ILS Functions	WX	NSWC, Panama City	0.200			0.100	10/04					0.000	0.300	
Subtotal Support			39.392			2.943		3.617		5.307		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2047 Airborne Laser Mine Detection System**									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Testing and Evaluation	WX	NSWC, PC, (Prime Contracto	8.072			1.114	10/04	0.300	10/05	0.250	10/06	Continuing	Continuing	
Testing and Evaluation	WX	NSWC, Panama City	6.392			1.878	10/04	1.665	10/05	2.175	10/06	Continuing	Continuing	
Testing and Evaluation	VAR	Various	0.392									0.000	0.392	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal T&E			14.856			2.992		1.965		2.425		Continuing	Continuing	
Remarks:														
Management Support	PD	Travel	0.260			0.025	10/04			0.050	10/06	Continuing	Continuing	
Management Support	VAR	Various	1.747			0.154	10/04	0.314	10/05	0.594	10/06	Continuing	Continuing	
Management Support	WX	NSWC, PC, (Prime Contracto	0.579					0.040	10/05	0.280	10/06	Continuing	Continuing	
Management Support	WX	NSWC, Panama City	0.589			0.455	10/04	0.271	10/05	0.357	10/06	Continuing	Continuing	
													0.000	
													0.000	
Subtotal Management			3.175			0.634		0.625		1.281		Continuing	Continuing	
Remarks:														
Total Cost			81.555			7.288		11.365		11.620		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 107

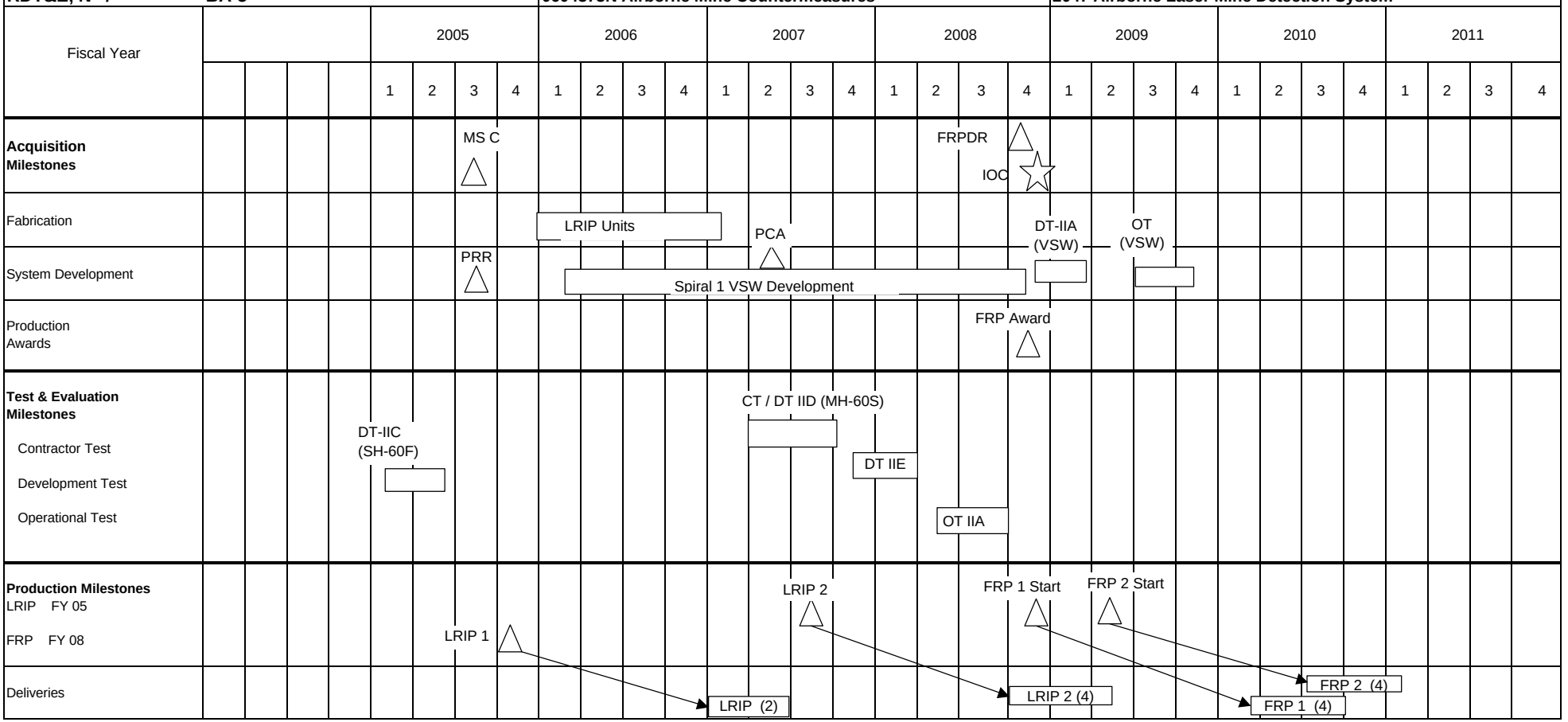
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **2047 Airborne Laser Mine Detection System**



R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **2047 Airborne Laser Mine Detection System**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C (MS C)		3Q						
Developmental Testing (DT-IIC - SH-60F)		1Q-2Q						
Start Low-Rate Initial Production I (LRIP I)		4Q						
Preproduction Readiness Review (PRR)		3Q						
CT/DT IID				2Q-3Q				
DT IIE				4Q	1Q			
Operational Testing (OPEVAL - MH-60S)					2Q-3Q			
Physical Configuration Audit (PCA)				2Q				
Full Rate Production (FRP) Decision					4Q			
Low-Rate Initial Production I Delivery				1Q	4Q			
IOC					4Q			
Full Rate Production Start (FRP 1)					4Q			
Full Rate Production Start (FRP 2)						2Q		
Full Rate Production Delivery (FRP 1)							1Q-3Q	
Full Rate Production Delivery (FRP 2)							3Q-4Q	1Q
DT-IIA (VSW)					4Q	1Q		
OT (VSW)						3Q-4Q		

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **2427/2883 Organic Airborne and Surface Influence Sweep**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**53.452**		**10.898**	**13.775**	**12.094**	**4.081**	**0.000**	**0.000**	**2.776**	**Continuing**	**Continuing**
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 in support of the Carrier Strike Groups (CSG) and Expeditionary Strike Groups (ESG). The system provides a rapid response sweeping capability against bottom and moored, buried, 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, tow and sweep cable systems, power inverter, power distribution unit and storage/shipping containers. System interfaces with the MH-60S helicopter via the 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. Production is planned to begin with LRIP in FY07 and full rate production to start in FY08. A Pre-Planned Product Improvement (P3I) program will be initiated to develop an autonomous sweep capability in FY11.

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	11.097	13.985	12.478
FY07 President's Budget	10.898	13.775	12.094
Total Adjustments	(0.199)	(0.210)	(0.384)
Summary of Adjustments:			
Inflation	0.000	0.000	0.055
Pay Rates	0.000	0.000	0.008
Programmatic Changes	(0.199)	(0.210)	(0.447)
Subtotal	(0.199)	(0.210)	(0.384)

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2427/2883 Organic Airborne and Surface Influence Sweep**

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.559	1.936	0.954
RDT&E Articles Quantity		3		

Continue SD&D contract to complete Design, Conduct CDR, Fabricate 3 EDM, and begin to integrate EDMs into platform.
Conduct technical reviews such as PDR, SRDR, and CDR.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		8.524	10.877	10.704
RDT&E Articles Quantity				

Conduct technical studies on MH-60S interface and other technical studies.
Conduct testing including CT/DT/OA on an MH-53E helicopter and CT, DT abd OT on an MH-60S helicopter.
Conduct studies on C4I Interface and MEDAL requirements.
Conduct engineering and design work.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.815	0.962	0.436
RDT&E Articles Quantity				

Monitored Contractor performance and technical review of CDRLs. Conduct CDR and PDR.
Continue to monitor Contractor performance and technical review of CDRLs.
Support platform integration.

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2427/2883 Organic Airborne and Surface Influence Sweep**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
424800 OPN	0.000	0.000	10.326						

(U) D. ACQUISITION STRATEGY:

After Milestone B review in FY02, a SD&D contract was awarded. In FY07, following a successful CT/OA and MS C, LRIP procurement options will be exercised. In FY08 after a successful OT Full rate production will begin.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)												DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **Airborne Mine Countermeasures/0604373N**			PROJECT NUMBER AND NAME **2427/2883 Organic Airborne and Surface Influence Sweep**									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Hardware/Software Development	C/CPFF	EDO Corp.	1.722									0.000	1.722		
Hardware/Software Development	C/CPIF	EDO Corp.	7.872			1.559	10/04	1.936	10/05	0.954	10/06	Continuing	Continuing		
Hardware/Software Development	SS/CPFF	Aeptec Microsystems Inc	5.898									Continuing	Continuing		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
Subtotal Product Development			15.492			1.559		1.936		0.954		Continuing	Continuing		
Remarks:															
Engineering Services	WX	NUWC Keyport	0.659									0.000	0.659		
Engineering Services	C/CPIF	EDO Corp	10.214			1.104	10/04	1.375	10/05	2.120	10/06	Continuing	Continuing		
Engineering Services	WX	NSWC Panama City	8.024			1.710	10/04	2.096	10/05	0.655	10/06	Continuing	Continuing		
Engineering Services	WX	NSWC Carderock MD	0.725									0.000	0.725		
Engineering Services/ILS	VAR	Various	0.548									0.000	0.548		
Engineering Services	PD	ONR	3.465			1.100	10/04	1.890	10/05	1.441	10/06	Continuing	Continuing		
ILS Functions	C/CPIF	EDO Corp	2.419			1.065	10/04	0.441	10/05	0.400	10/06	Continuing	Continuing		
ILS Functions	WX	NSWC Panama City	1.234			0.311	10/04	0.387	10/05	0.404	10/06	Continuing	Continuing		
Subtotal Support			27.288			5.290		6.189		5.020		Continuing	Continuing		
Remarks:															

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2427/2883 Organic Airborne and Surface Influence Sweep**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E Functions	C/CPIF	EDO Corp	3.958			1.172	10/04	1.386	10/05	1.450	10/06	Continuing	Continuing	
T&E Functions	WX	NSWC Panama City, FL	2.838			2.062	10/04	3.302	10/05	4.234	10/06	Continuing	Continuing	
T&E Functions	VAR	Various	0.554									0.000	0.554	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal T&E			7.350			3.234		4.688		5.684		Continuing	Continuing	
Remarks:														
Management Support	VAR	Various	3.127			0.785	10/04	0.932	10/05	0.406	10/06	Continuing	Continuing	
Management Support	PD	Travel	0.195			0.030	10/04	0.030	10/05	0.030	10/06	Continuing	Continuing	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Management			3.322			0.815		0.962		0.436		Continuing	Continuing	
Remarks:														
Total Cost			53.452			10.898		13.775		12.094		Continuing	Continuing	
Remarks:														

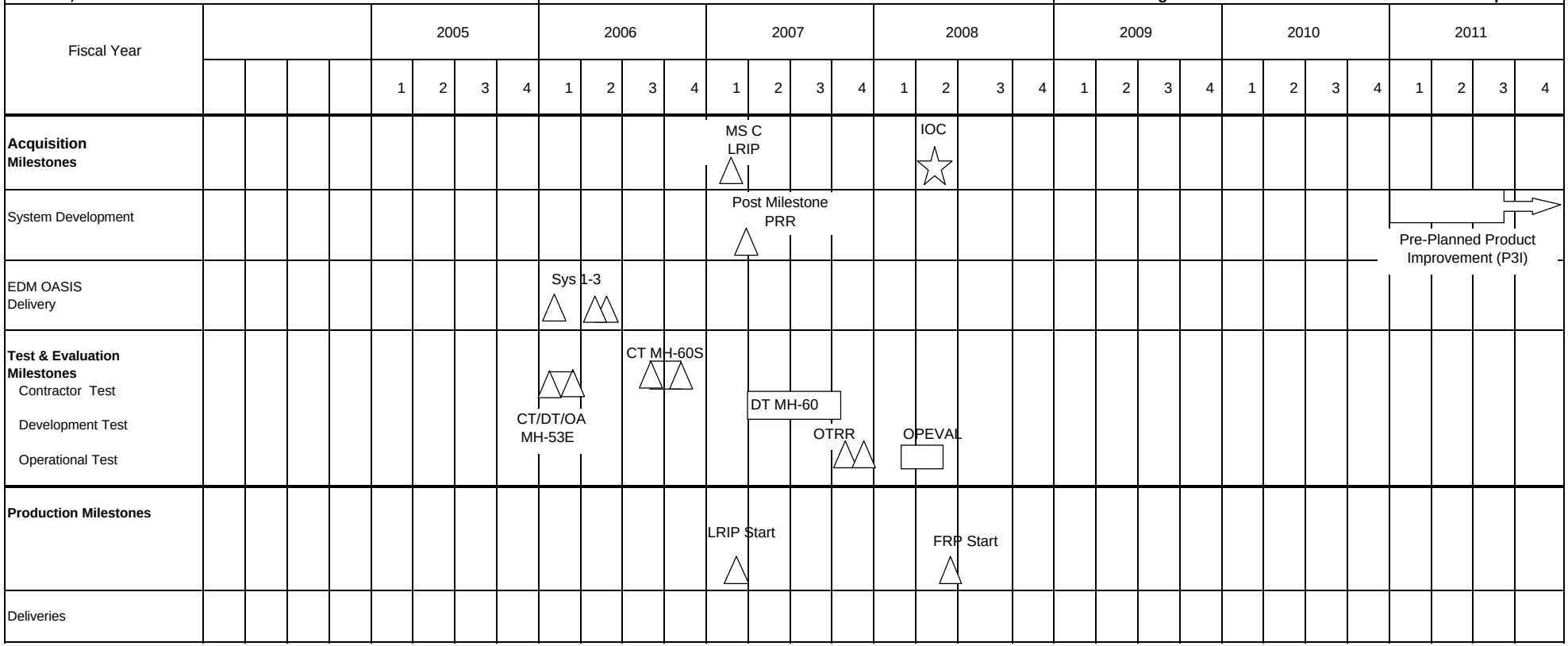
R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2427/2883 Organic Airborne and Surface Influence Sweep**



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **2427/2883 OASIS**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
EDM System 1 Delivery			1Q					
EDM System 2 Delivery			2Q					
EDM System 3 Delivery			2Q					
CT/DT/OA MH-53E Testing			1Q					
CT MH-60S Testing			3Q-4Q					
DTII Testing				2Q-4Q				
OPEVAL					1Q-2Q			
Milestone C (LRIP)				1Q				
LRIP Contract Award				1Q				
FRP Contract Award					2Q			
Initial Operational Capability					2Q			
Pre-planned Product Improvement (P3I)								1Q-4Q

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization Systems**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**115.814**		**27.334**	**23.528**	**19.168**	**17.066**	**4.350**	**0.000**	**0.000**	**0.000**	**207.260**
RDT&E Articles Qty	**AMNS 3**		**RAMICS 2**								**5**

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

The Airborne Mine Neutralization Systems (AMNS) research and development effort was restarted in FY97 in Project 0529 P.E. 0604373N. AMNS will provide the MH-60S helicopter 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 helicopter 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 Strike Groups (CSG) and Expeditionary Strike Groups (ESG). This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA). MH-60S Block 2B aligned AMNS, extends SD&D phase out later in the FYDP. MS C will be based on Alternate Platform tests to be conducted in FY06 as well as Contractor Testing (CT) on the MH-60S helicopter to be conducted in FY06 and FY07.

The AN/AWS-2 Rapid Airborne Mine Clearance System (RAMICS) MIW 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 mine hunting 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 Strike Groups (CSG) and Expeditionary Strike Groups (ESG). 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; protection/offense against small craft/vehicles; air to air operations; very shallow water MCM; swimmer defense and torpedo defense; and ASW capabilities. this program received a Congressional Add in FY04 ($2M) for RAMICS ASW capabilities. RAMICS ASW capabilities will provide a reliable rapid response weapon system to effectively defeat large surface, near surface, and underwater targets in the littorals. RAMICS program was restructured to align with MH-60S Helicopter Block 2B schedule.

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2473 Airborne Mine Neutralization Systems**

(U) B. PROGRAM CHANGE SUMMARY:

	FY 2005	FY 2006	FY 2007
FY06 President's Budget	29.367	23.887	20.281
FY07 President's Budget	27.334	23.528	19.168
Total Adjustments	(2.033)	(0.359)	(1.113)
Summary of Adjustments:			
Inflation	0.000	0.000	0.090
Pay Rates	0.000	0.000	0.013
Programmatic Changes	(2.033)	(0.359)	(1.216)
Subtotal	(2.033)	(0.359)	(1.113)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2473 Airborne Mine Neutralization Systems**

(U) B. Accomplishments/Planned Program

AMNS		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		14.475	7.571	12.151
RDT&E Articles Quantity				

FY05 PLAN: Prepare documentation for MH-60S contract award (production), complete development of alternate platform tactical software, and continue fabrication of EDMs.

FY06 PLAN: Complete fabrication of EDMs. Conduct alternate platform testing. Begin MH-60S Contractor Testing (CT). Continue to monitor Contractor performance and technical review of CDRLs. Develop program documentation to achieve MS C.

FY07 PLAN: Complete MH-60S contractor test and initiate MH-60S TECHEVAL. Achieve MS C decision. Exercise Low Rate Initial Production (LRIP) option in SD&D contract.

RAMICS		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		12.859	15.957	7.017
RDT&E Articles Quantity		2		

FY05 PLAN: Continue RAMICS MIW design, development under the SD&D contract. Conduct final laser acceptance testing, gun sub-system concept demonstrator RAP test.

FY06 PLAN: Continue RAMICS design, develop, and fabrication of Engineering Development Models (EDMs).

FY07 PLAN: Conduct contractor testing (CT). Start captive carriage and jettison testing on the MH-60S helicopter.

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2473 Airborne Mine Neutralization System**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
AMNS 424800 OPN	0.000	0.000	4.481						
AMNS 422500 WPN	0.000	1.495	3.151						

(U) D. ACQUISITION STRATEGY:

In FY07 following a successful alternate platform test, contractor test, and MS-C, an LRIP award is planned for two (2) MH-60S systems. FRPDR is planned for FY09. Full and open competition is planned for the AMNS (MH-60S) FRP contract.

AMNS ONLY

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**2473 Airborne Mine Neutralization System**

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

(U) E. ACQUISITION STRATEGY:

RAMICS: Achieved MS B in July 2002 and awarded SD&D contract in August 2002 based on a full and open competition. Following MS C , a competitive LRIP award is planned for two (2) systems for fleet use. Full Rate Production (FRP) option is scheduled to start in FY10.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)												DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization System**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/845	Lockheed Syracuse, NY	3.331									0.000	3.331	
Hardware/Software Development	VAR	Various	3.359						.			0.000	3.359	
Hardware/Software Development	WX	NSWC Panama City, FL	1.273			0.190	10/04					0.000	1.463	
Hardware/Software Development	C/CPIF	Raytheon, Portsmouth RI	11.907			3.769	10/04					0.000	15.676	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			19.870			3.959		0.000		0.000		0.000	23.829	
Remarks: AMNS Only														
Engineering Services	VAR	Various	3.300									0.000	3.300	
Engineering Services	WX	NSWC Panama City, FL	11.703			3.108	10/04	2.681	10/05	2.982	10/06	3.525	23.999	
Engineering Services	C/CPIF	Raytheon, Portsmouth RI	4.894			1.210	10/04	0.656	10/05	2.160	10/06	1.720	10.640	
ILS Functions	WX	NSWC Panama City, FL	3.219			0.115	10/04	0.089	10/05			0.000	3.423	
ILS Functions	SS/BOA	Lockheed Syracuse, NY	0.227									0.000	0.227	
ILS Functions	C/CPIF	Raytheon, Portsmouth RI	1.260			0.475	10/04	0.320	10/05			0.000	2.055	
													0.000	
Subtotal Support			24.603			4.908		3.746		5.142		5.245	43.644	
Remarks: AMNS ONLY														

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization System**									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	VAR	Various	0.300									0.000	0.300		
Developmental Test & Evaluation	WX	CSS Panama City, FL	8.647			1.313	10/04	0.671	10/05	2.865	10/06	0.000	13.496		
Developmental Test & Evaluation	SS/BOA	Lockheed Syracuse, NY	1.254									0.000	1.254		
Developmental Test & Evaluation	C/CPIF	Raytheon, Portsmouth RI				3.885	10/04	2.755	10/05	3.740	10/06	0.000	10.380		
Operational Test & Evaluation	WX	COTF Norfolk, VA	1.388									3.475	4.863		
Operational Test & Evaluation	SS/BOA	Lockheed Syracuse, NY	0.767									0.000	0.767		
													0.000		
Subtotal T&E			12.356			5.198		3.426		6.605		3.475	31.060		
Remarks:															
Program Management Support	VAR	Various	1.476			0.370	10/04	0.359	10/05	0.364	10/06	0.268	2.837		
Travel	PD		0.174			0.040	10/04	0.040	10/05	0.040	10/06	0.040	0.334		
													0.000		
													0.000		
													0.000		
													0.000		
Subtotal Management			1.650			0.410		0.399		0.404		0.308	3.171		
Remarks:															
Total Cost			58.479			14.475		7.571		12.151		9.028	101.704		
Remarks: AMNS ONLY															

R-1 SHOPPING LIST - Item No. 107

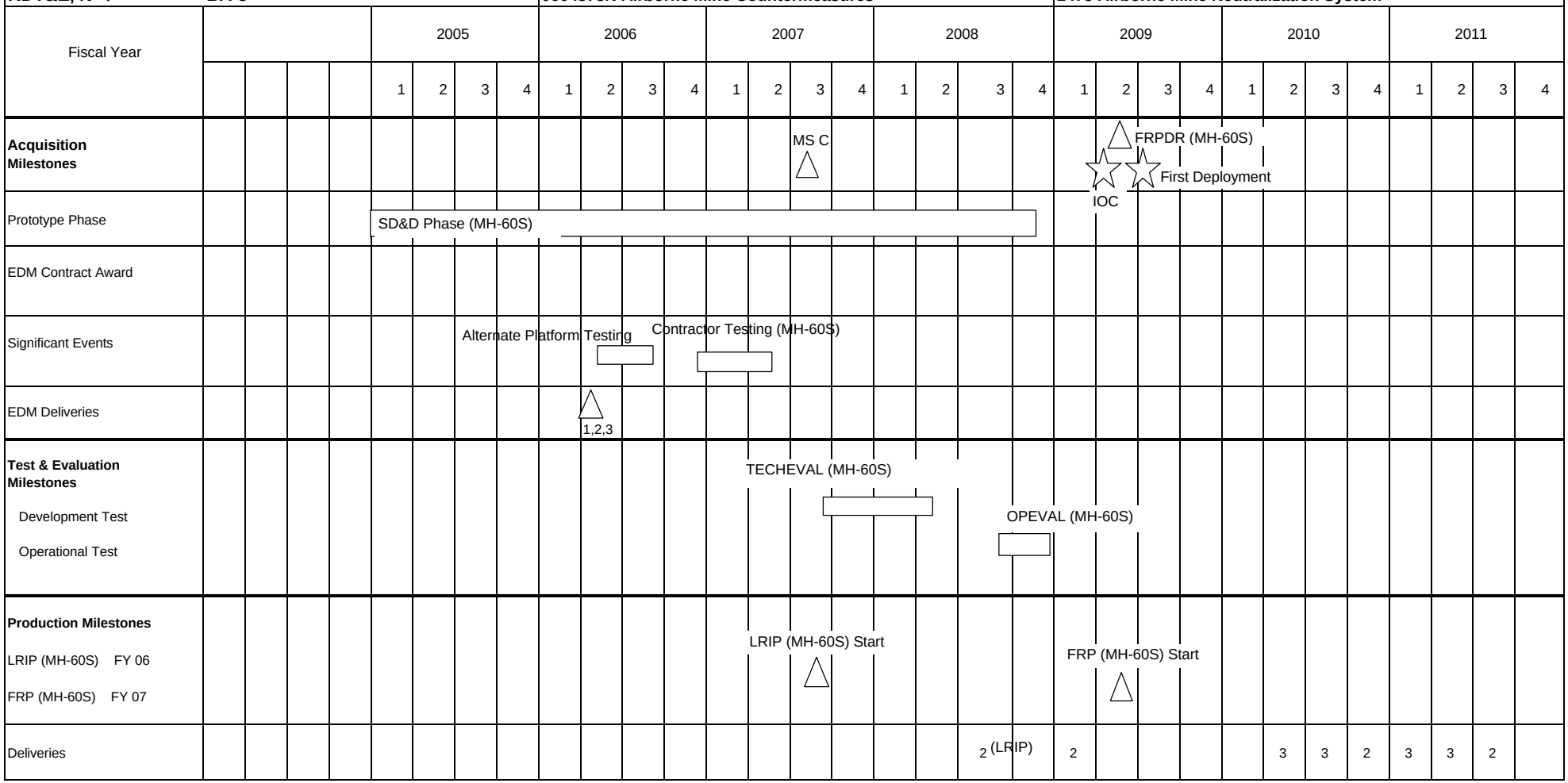
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **2473 Airborne Mine Neutralization System**



AMNS ONLY

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization System**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SD&D Phase (MH-60S)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
EDM Deliveries (MH-60S)			2Q					
Alternate Platform Testing			2Q-3Q					
Contractor Testing (MH-60S)			4Q	1Q-2Q				
TECHEVAL (MH-60S)				3Q-4Q	1Q-2Q			
Milestone C (MS C)		.		3Q				
OPEVAL (MH-60S)					3Q-4Q			
LRIP (MH-60S) Start				3Q				
FRPDR (MH-60S)						2Q		
Low-Rate Initial Production (LRIP) Delivery (MH-60S)					3Q			
FRP (MH-60S) Start						2Q		
Initial Operational Capability (IOC) (MH-60S)						2Q		
First Deployment (MH-60S)						2Q		
AMNS ONLY								

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)													DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization System**									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Hardware/Software Development	C/CPIF	Northrop Grumman, FL	18.930			6.935	10/04	4.096	10/05	0.649	10/06		30.610		
Hardware/Software Development	WX	CSS - Panama City, FL	1.634										1.634		
Hardware/Software Development	RCP	Crane - Crane, IN	1.381			0.714	10/04						2.095		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
Subtotal Product Development			21.945			7.649		4.096		0.649		0.000	34.339		
Remarks: This is RAMICS only .															
Engineering Services	C/CPIF	Northrop Grumman, FL	7.382			0.589	10/04	1.293	10/05	3.005	10/06	1.000	13.269		
Engineering Services	WX	CSS - Panama City, FL	6.505			0.907	10/04	0.322	10/05	0.700	10/06	0.603	9.037		
Engineering Services	Various	Crane - Crane, IN	2.200			0.232	10/04			0.300	10/06	0.400	3.132		
Engineering Services	WX	Various	1.506			0.021	10/04	0.880	10/05	0.050	10/06	0.500	2.957		
													0.000		
ILS Functions	C/CPIF	Northrop Grumman, FL	4.266			0.811	10/04	0.943	10/05			0.800	6.820		
ILS Functions	WX	CSS Panama City, FL	0.885			0.195	10/04	0.255	10/05			0.764	2.099		
ILS Functions	Various	Various	1.500					0.280	10/05				1.780		
Subtotal Support			24.244			2.755		3.973		4.055		4.067	39.094		
Remarks: This is RAMICS only .															

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5** | PROGRAM ELEMENT: **0604373N Airborne Mine Countermeasures** | PROJECT NUMBER AND NAME: **2473 Airborne Mine Neutralization System**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	C/CPIF	Northrop Grumman, FL	2.330			1.059	10/04	3.590	10/05	0.416	10/06	1.521	8.916	
Test & Evaluation	WX	CSS - Panama City, FL	1.230			0.364	10/04	2.885	10/05	0.400	10/06	1.923	6.802	
Test & Evaluation	WX	Crane - Crane, IN	0.500			0.177	10/04	0.190	10/05	0.167	10/06	0.217	1.251	
Test & Evaluation	Various	Various	4.788			0.527	10/04	0.893	10/05	1.000	10/06	4.000	11.208	
													0.000	
													0.000	
													0.000	
Subtotal T&E			8.848			2.127		7.558		1.983		7.661	28.177	
Remarks: This is RAMICS only .														
Management Support	Various	Various	2.146			0.300	10/04	0.300	10/05	0.300	10/06	0.600	3.646	
Management Support	PD	Travel	0.152			0.028	10/04	0.030	10/05	0.030	10/06	0.060	0.300	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Management			2.298			0.328		0.330		0.330		0.660	3.946	
Remarks: This is RAMICS only .														
Total Cost			57.335			12.859		15.957		7.017		12.388	105.556	
Remarks: This is RAMICS only .														

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

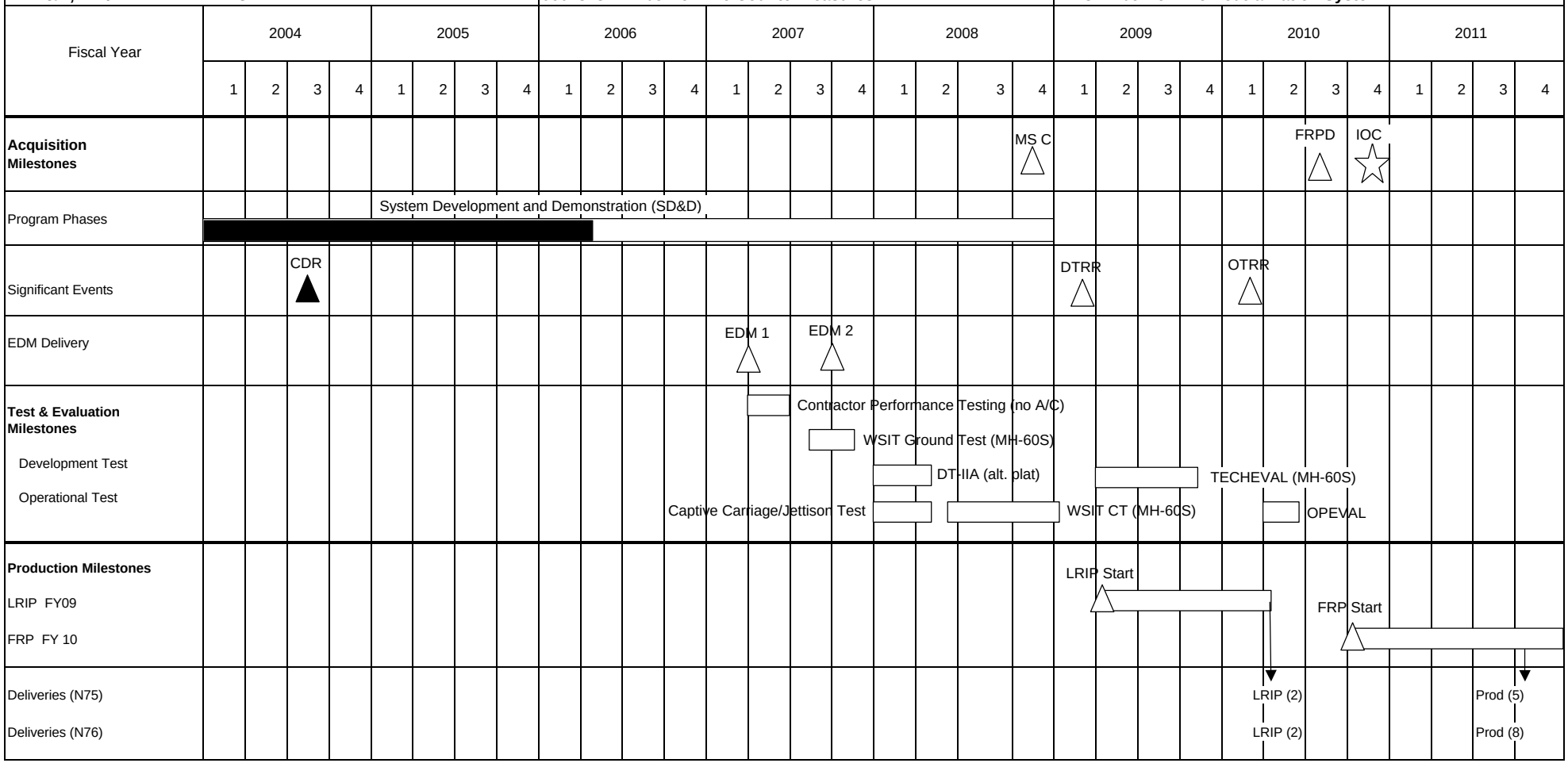
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **2473 Airborne Mine Neutralization System**



RAMICS ONLY

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **2473 Airborne Mine Neutralization System**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
System Development and Demonstration (SD&D) Phase		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
Engineering Development Model (EDM) Delivery (2 units)				1Q, 3Q				
Technical Evaluation (TECHEVAL) - MH-60						2Q-4Q		
Milestone (MS) C					4Q			
Start Low Rate Initial Production (LRIP)						2Q		
Captive Carriage / Jettison Testing					1Q-2Q			
Operational Evaluation (OPEVAL)							2Q	
Full Rate Production Decision (FRPD)							3Q	
LRIP Production Delivery (2 Units)							2Q	
Initial Operational Capability (IOC)							4Q	
Full Rate Production Start							4Q	
First Production Delivery (2 units)								4Q
Contractor Performance Testing (No A/C)				2Q				
Visit Ground Test (MH-60s)				3Q-4Q				
DT-IIA (Alternate Platform)					1Q-2Q			
WSIT CT(MH-60s)					2Q-4Q			
RAMICS ONLY								

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **4026 - C4I, Tactics, and Mission Planning**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**0.000**		**1.234**	**1.800**	**2.298**	**3.877**	**2.838**	**1.965**	**1.942**	**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

The C4I, Tactics, Mission Planning, and Post-Mission Analysis (CTMP) program began in FY97 as an initiative to provide near-real-time data linking of mine sensor data between the MH-53E aircraft and ship- and/or shore-based command centers. Additionally, the program began to develop MEDAL modules for each "Next Generation" system; and plans to develop "Next Generation" tactics; provide threat data and system requirements and capabilities to the MEDAL software development effort; and develop a common post-mission analysis tool for "Next Generation" systems. This program was previously funded under PE-0603502N, project 1233.

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	1.257	1.827	1.560
FY07 President's Budget	1.234	1.800	2.298
Total Adjustments	(0.023)	(0.027)	0.738
Summary of Adjustments:			
Inflation	0.000	0.000	0.010
Pay Rates	0.000	0.000	0.002
Programmatic Changes	(0.023)	(0.027)	0.726
Subtotal	(0.023)	(0.027)	0.738

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**4026 - C4I, Tactics, and Mission Planning**

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.139	0.430	0.541
RDT&E Articles Quantity				

Mission Planning and MEDAL

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.955	1.149	1.234
RDT&E Articles Quantity				

Organic Post Mission Analysis (OPMA) and CTMP Common Support

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.140	0.221	0.523
RDT&E Articles Quantity				

Tactics Evaluation, Data Bases, and Algorithms
Tactics Documentation and Training

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**0604373N Airborne Mine Countermeasures**	**4026 - C4I, Tactics, and Mission Planning**

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

(U) D. ACQUISITION STRATEGY:

The Organic Post-Mission Analysis (OPMA) capability for the OAMCM systems will be developed by NSWC PC, Panama City, FL. The OPMA project will leverage existing system-specific developmental PMA software, maximize commonality, and host the software on a common shipboard computer. OPN funding will be used to procure ruggedized portable OPMA computers for ship of opportunity deployments, land basing, and training. Development of OAMCM-system-specific MEDAL modules will be performed by SAIC, McLean, VA. This effort will include post-test updates for the system-specific MEDAL modules to allow transition to a Fleet release. NSWC-PC will contract for this work on a time and materials basis. The tactics development, tactics training, and tactics algorithms/database efforts are performed by NSWC-PC. These efforts will provide reach back support as the OAMCM systems begin to be fielded; will develop modifications to environmental databases necessary to support OAMCM mission planning; will update the MIW Tactics Continuum to address OAMCM; and will update the gear and mine database for threats addressed by the OAMCM systems.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)												DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **4026 - C4I, Tactics, and Mission Planning**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	RX	SAIC				0.082	10/04	0.352	10/05	0.055	10/06	Continuing	Continuing	
Hardware/Software Development	WX	NSWC, Panama City, FL				0.520	10/04	0.489	10/05	0.355	10/06	Continuing	Continuing	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			0.000			0.602		0.841		0.410		Continuing	Continuing	
Remarks:														
Engineering Services	WX	NAVO								0.015	10/06	Continuing	Continuing	
Engineering Services	VAR	Various				0.002	10/04	0.114	10/05	0.399	10/06	Continuing	Continuing	
Engineering Services	WX	NSWC, Panama City, FL				0.408	10/04	0.382	10/05	0.632	10/06	Continuing	Continuing	
Engineering Services	RX	TBD								0.221	10/06			
Engineering Services	RX	SAIC								0.240	10/06			
ILS	WX	NSWC, Panama City, FL						0.201	10/05	0.181	10/06		0.382	
													0.000	
													0.000	
Subtotal Support			0.000			0.410		0.697		1.688		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)													DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**			PROJECT NUMBER AND NAME **4026 - C4I, Tactics, and Mission Planning**									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Test and Evaluation	WX	NSWC, Panama City, FL								0.040	10/06	Continuing	Continuing		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
													0.000		
Subtotal T&E			0.000			0.000		0.000		0.040		Continuing	Continuing		
Remarks:															
Management Support	WX	NSWC, Panama City, FL				0.202	10/04	0.242	10/05	0.140	10/06	Continuing	Continuing		
Management Support	RX	SAIC				0.020	10/04	0.020	10/05	0.020	10/06	Continuing	Continuing		
													0.000		
													0.000		
													0.000		
													0.000		
Subtotal Management			0.000			0.222		0.262		0.160		Continuing	Continuing		
Remarks:															
Total Cost			0.000			1.234		1.800		2.298		Continuing	Continuing		
Remarks:															

R-1 SHOPPING LIST - Item No. 107

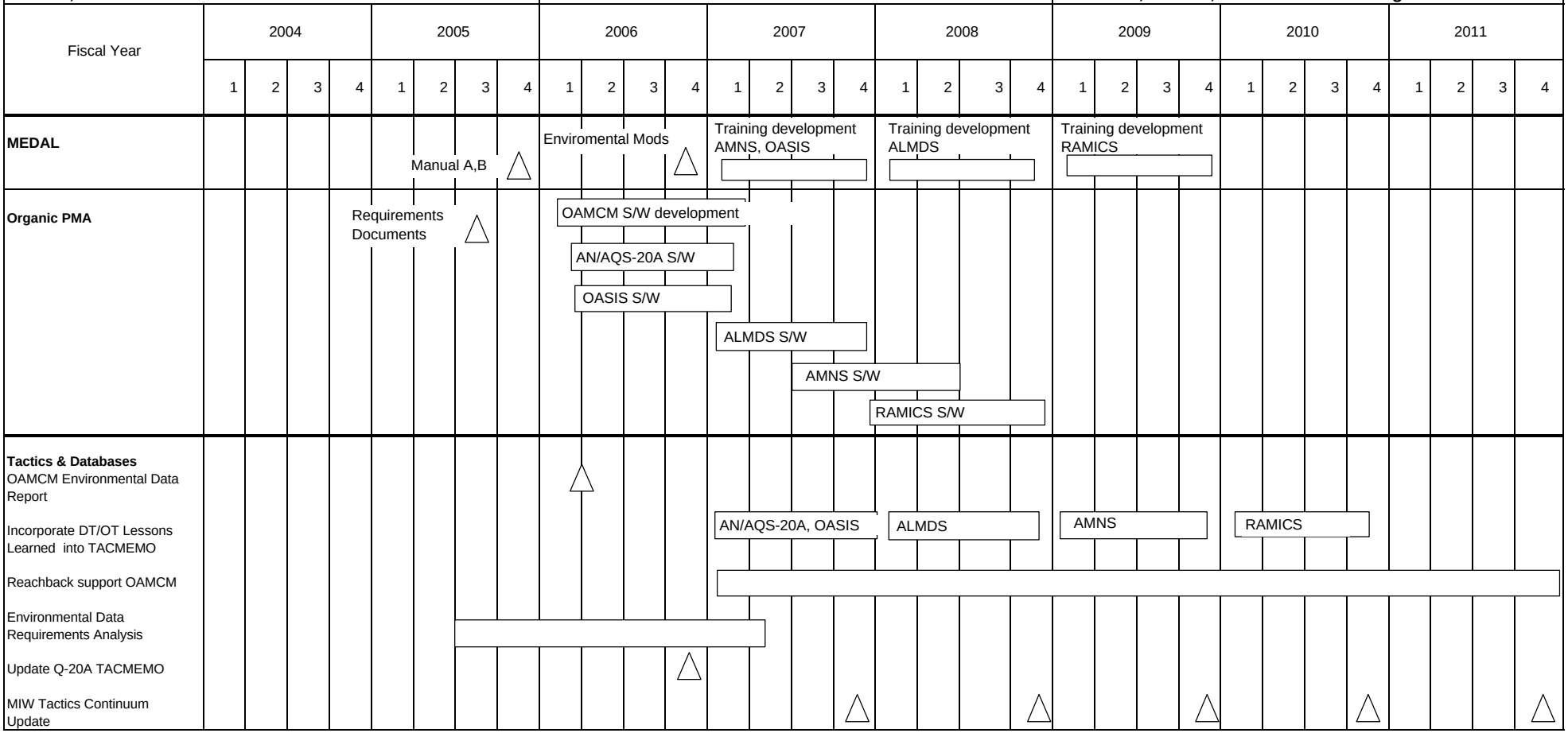
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: **0604373N Airborne Mine Countermeasures**

PROJECT NUMBER AND NAME: **4026 - C4I, Tactics, and Mission Planning**



R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT **0604373N Airborne Mine Countermeasures**				PROJECT NUMBER AND NAME **4026 - C4I, Tactics, and Mission Planning**			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPMA requirements documents		3Q						
Environmental data requirement analysis		3Q-4Q	1Q-4Q	1Q-2Q				
MEDAL : manual A, B, mu Bn inputs		4Q			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
OPMA; OAMCM software development (core)			1Q-4Q	1Q				
OPMA; AN/AQS-20A software			1Q-4Q	1Q				
OPMA; OASIS software			1Q-4Q	1Q				
OAMCM enviromental data report			2Q					
MEDAL; Enviromental mods to query water current by depth			4Q					
Update AN/AQS-20A TACMEMO for NAVO Bottom Mapping			4Q					
MEDAL; training development AMNS, OASIS				1Q-4Q				
OPMA; ALMDS Software				1Q-4Q				
Incorporate DT/OT lessons learned into TACMEMO; Q20A, OASIS				1Q-4Q				
Reachback Support				1Q-4Q	1Q-2Q	1Q-4Q	1Q-4Q	1Q-4Q
OPMA; AMNS Software				3Q-4Q	1Q-2Q			
OPMA; RAMICS Software				4Q	1Q-4Q			
MEDAL training development, ALMDS					1Q-4Q			
MIW Tactics Continumum update				4Q	4Q	4Q	4Q	4Q
Incorporate DT/OT lessons learned into TACMEMO; ALMDS					1Q-4Q			
MEDAL Training development RAMICS						1Q-4Q		
Incorporate DT/OT lessons learned into TACMEMO; AMNS						1Q-4Q		
Incorporate DT/OT lessons learned into TACMEMO; RAMICS							1Q-4Q	

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **0604373N Airborne Mine Countermeasures**					PROJECT NUMBER AND NAME **9179 Surface Navy Integrated Undersea Tactical Technology**					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**3.692**		**1.446**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**5.138**
RDT&E Articles Qty											**0**

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

This congressional add for Surface Navy Inegrated Undersea Tactical Technology (SNIUTT) will be used to develop AN/AQS-14, AN/AQS-24 and AN/AQS-20A sensor training module for a LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA -5	**0604373N Airborne Mine Countermeasures**	**Q9179 Surface Navy Integrated Undersea Tactical Technology**

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.446	0.000	0.000
RDT&E Articles Quantity				

Congressional Add. - Investigate development of an AN/AQS-14, AN/AQS-24 and AN/AQS-20A sensor training module for a LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5** | PROGRAM ELEMENT: **0604373N Airborne Mine Countermeasures** | PROJECT NUMBER AND NAME: **9179 Surface Navy Integrated Undersea Tactical Technology (SNIUTT)**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/CPFF	AAC, Ronkonkoma, NY	3.359			0.880	03/05						4.239	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			3.359			0.880		0.000		0.000		0.000	4.239	
Remarks:														
Development Support	WR	NSWC, PC Panama City, FL	0.333			0.566	03/05						0.899	
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			0.333			0.566		0.000		0.000		0.000	0.899	
Remarks:														
Total Cost			3.692			1.446		0.000		0.000		0.000	5.138	

R-1 SHOPPING LIST - Item No. 107

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification				**Date: February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /**		R-1 ITEM NOMENCLATURE PE 0604378N Naval Integrated Fire Control - Counter Air System Engineering					
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**0.000**	**0.000**	**14.792**	**11.133**	**10.322**	**11.875**	**5.118**
3159/Naval Integrated Fire Control-Counter Air SE&I	**0.000**	**0.000**	**14.792**	**11.133**	**10.322**	**11.875**	**5.118**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Naval Integrated Fire Control - Counter Air (NIFC-CA) Systems Engineering Integration and Test (SEI&T) will extend the Naval Theater Air and Missile Defense battlespace out to the maximum effective range of the weapon. It extends the battlespace to distances that are well beyond the existing, stand-alone capability of surface ship controlled air defense weapons. NIFC-CA is a capabilities based program that takes current and emerging technology from Core Pillar Programs (Cooperative Engagement Capability (CEC), Aegis, Standard Missile (SM-6) and E-2D Advanced Hawkeye (AHE)) and other related programs and integrates them together to form the successful implementation of a System of Systems (SoS) Capability. The NIFC-CA focus is on Integrated Fire Control for over-the-horizon (beyond visual range) and engage-on-remote capability. NIFC-CA is a key component of Navy Transformation "SEA SHIELD".

NIFC-CA is a SoS Systems Engineering capability designed to define the functional allocation for the pillar elements within NIFC-CA (SM-6, E-2D, CEC and Aegis). This PE will support SoS SE efforts including System Requirements Review (SRR), Preliminary Design Review (PDR), Critical Design Review (CDR), Modeling and simulation, required for successful convergence of the pillar programs.

The funding identified will provide for NIFC-CA SEI&T risk reduction for engage-on-remote capability and SoS integration.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		**February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.810	
RDT&E Articles Quantity				

Efforts: Integration and Test including participation in the Air Directed Surface to Air Missile Demonstration (DEMO) activities and other pillar program test planning and events. Also included is data reduction and analysis. Examination of CONOPS for fleet integration.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.555	
RDT&E Articles Quantity				

Efforts: Project Planning including technical management of contracts, coordination of pillar schedules and configuration management. Technical management tools and products include the Engineering notebook, Integrated Engineering Master Plan, Integrated Master Schedules, a NIFC-CA SEI&T Work Breakdown Structure (WBS), security plans, and configuration management plans. Integration engineering efforts with Army, Air Force and Marine Corps Programs will lead to a Joint Integrated Fire Control capability.

R-1 SHOPPING LIST - Item No. 108

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		**Date: February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	9.427	
RDT&E Articles Quantity				

Efforts: Engineering management and System Definition including the development of the Systems Performance Document (SPD), SoS functional allocations, requirements traceability, System Trade studies, SoS interface documents, sensor net capability analysis, performance analysis, risk mitigation, and scenario development. Architecture development with supporting documentation is also an on going effort. Modeling and simulation activities will be an area of effort. Performance analysis in terms of SoS performance documents, distributed weapons control and engagement timelines are completed within the systems capabilities arena. System Integrator (industry) efforts supporting systems capabilities with a collaborative role alongside of government rounds out the system capability efforts.

R-1 SHOPPING LIST - Item No. 108

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		**Date: February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	0.000	0.000	0.000
FY07 President's Budget:	0.000	0.000	14.782
Total Adjustments	0.000	0.000	14.782
Summary of changes:			
Programmatic change			14.782
Subtotal	0.000	0.000	14.782

Schedule:

N/A

Technical:

Systems Engineering Integration and Test (SEI&T) for SoS is required for identification, tracking and management of SoS risks, and the integration and test of component programs. Project NIFC-CA SEI&T develops and recommends performance trade-offs and allocates functionality to systems in order to achieve a cost-effective, life-cycle balanced engage-on-remote, over the horizon SoS mission capability leading to a joint integrated fire control. NIFC-CA requires up-front SoS SE for Pillar contributions to From the Sea (FTS) Kill Chain. The FTS Kill Chain is one of 3 kill chains. The other two are the From the Air (FTA) Kill Chain and From the Land (FTL) Kill Chain. All 3 Kill Chains comprise the Naval contribution to Joint IFC. Proof of concept demonstration planned 2007/08 consisting of ADSAM demo with multiple kill chains. FTS and FTL DT 2010/11. NIFC-CA IOC is 2014.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		**Date: February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / 1319 BA-4	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Other RDT&E related:
0603658N (CEC)
0604366N (Standard Missile SM-6)
0604307N (AEGIS)
0604234N (E-2D Advanced Hawkeye)

E. ACQUISITION STRATEGY:

F. MAJOR PERFORMERS:

NSWC Dahlgren Division (NSWC DD)- Dahlgren, VA
NSWC Port Huenume Division (NSWC PHD), Port Huenume, CA
Lockhead Martin (LM) Maritime Systems and Sensors (MS2) - Moorsetown, NJ
Raytheon Co. , Tucson, AZ
Northrup Grumman Corp. (NGC) Integrated Systems (IS), Bethpage, NY
Boeing Integrated Defense Systems (IDS), St. Louis, MO
CACI Federal Inc., Chantilly, VA
Northrup Grumman Corp. (NGC) Mission Systems (MS), Reston, VA
Johns Hopkins University (JHU) Applied Physics Laboratory (APL), Laurel , MD

R-1 SHOPPING LIST - Item No. 108

CLASSIFICATION:

Exhibit R-3 Project Cost Analysis (page 1)

Date:
February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC DD - Dahlgren, VA				0.000		3.920	TBD					
Systems Engineering	WR	NSWC PHD, Port Huenume, CA				0.000		1.270	TBD					
Systems Engineering	CPAF	CACI Federal Inc., Chantilly, VA				0.000		0.830	10/06			Continuing	Continuing	
Systems Engineering	CPAF	JHU/APL Laurel, MD	0.000	0.000		0.000		0.450	10/06			Continuing	Continuing	
Systems Engineering	CPAF	NGMS, Reston, VA	0.000	0.000		0.000		0.252	10/06			Continuing	Continuing	
Systems Engineering	CPAF	NGIS, Bethpage, NY	0.000	0.000		0.000		1.980	10/06			Continuing	Continuing	
Systems Engineering	CPAF	LM MS2 - Moorestown, NJ	0.000	0.000		0.000		1.980	10/06			Continuing	Continuing	
Systems Engineering	CPAF	Raytheon Co., Tucson, AZ	0.000	0.000		0.000		3.050	10/06			Continuing	Continuing	
Systems Engineering	CPAF	Boeing IDS, St. Louis, MO	0.000	0.000		0.000		0.510	10/06			Continuing	Continuing	
Systems Engineering	CPAF	CSCI	0.000	0.000		0.000		0.300	10/06			Continuing	Continuing	
Systems Engineering	WR	SWDG	0.000	0.000		0.000		0.125	TBD			Continuing	Continuing	
Systems Engineering	WR	COTF	0.000	0.000		0.000		0.125	TBD			Continuing	Continuing	
Total Product Development			0.000	0.000		0.000		14.792				Continuing	Continuing	

Remarks:

			0.000			0.000		0.000				Continuing	Continuing	
			0.000			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				Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 108

CLASSIFICATION:

Exhibit R-3 Project Cost Analysis (page 2)

Date:
February 2006

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-4**

PROGRAM ELEMENT: 0604378N Naval Integrated Fire Control

PROJECT NUMBER AND NAME: 3159 Naval Integrated Fire Control-Counter Air SE&I

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
			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	0.000		0.000		0.000				Continuing	Continuing	
						0.000								
						0.800		0.000						
Subtotal Management			0.000	0.000		0.800		0.000				Continuing	Continuing	

Remarks:

Total Cost			0.000	0.000		0.000		14.792		0.000		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 108

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **Date: February 2006**

APPROPRIATION: **RDT&E, N /B** | PROGRAM ELEMENT NUMBER AND NAME: 0604378N Naval Integrated Fire Control | PROJECT NUMBER AND NAME: 3159 Naval Integrated Fire Control-Counter Air SE&I

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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
Capability																								FTL				FTA
T&E Events													WSMR EVENTS															
NIFC-CA Project Reviews				QPR	QPR	QPR	QPR	QPR	QPR	QPR	QPR	QPR									IPR							
AHE	PDR				CDR										DEMO							E-2D PP Delivery					E-2D RMP IOC	
CEC P3I (AHE Integration)									Build 1 Start (AHE)				Build 2 Start (AHE)															CEC AHE IOC
CEC P3I (AWS Integration)				CSEDS		CEC/AWS DEMO			Certification				AWS/CEC NIFC-CA Capability - TBD															
AWS	Spiral 1/2								Spiral 3					Capability 10								Capability 12						
																								Capability 14 (NIFC-CA) (goes past FY11)				
SM-6				PDR				DRR		CTV-1				------GTV----------				MS C						Block I IOC				
F/A-18		LRIP 3			LRIP 4			AESA IOC																Block I IOC				
CLAWS/MACCS Increment 0		MS C							Inc 0 IOC																			
CLAWS/MACCS Increment 1												MS C			ARMY IOC									G/ATOR IOC				
JLENS					MS B															MS C					First Unit Equipped			

R-1 SHOPPING LIST - Item No. 108

From The Sea
From the Land
From The Air

Exhibit R-4a, Schedule Detail						Date: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-4**	PROGRAM ELEMENT 0604378N Naval Integrated Fire Control				PROJECT NUMBER AND NAME 3159 Naval Integrated Fire Control-Counter Air SE&I		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Capability Milestones							
FoS NIFC-CA SE IPRs						1Q	
WSMR EVENTS			4Q	1Q-4Q			
Demos ADSAM-L						4Q	
Demos ADAAM							4Q
IPR						1Q	
AHE							
PDR	1Q						
CDR		1Q					
C130 Flight TEST				3Q			
E-2D PP Delivery						2Q	
E-2D RMP IOC							4Q
CEC							
Bld 1 Start (C130) integration			1Q				
Bld 2 Start (AHE)					4Q	1Q	
CEC IOC							4Q
SM-6							
PDR	4Q						
DRR		4Q					
CTV-1			2Q				
ADSAM Captive Carry			2Q-4Q	1Q-4Q	1Q		
GTV				1Q-3Q			
MS C					1Q		
Block 1 IOC						4Q	
AWS							
SPIRAL 1/2	1Q-4Q	1Q-2Q					
SPIRAL 3		3Q-4Q	1Q-4Q				
AWS/SM6 Integ and NIFC-CA Capability				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Aegis IOC							
F/A-18							
CLAWS/MACCS & SLAM RAAM							
DT Events			1Q-3Q				
MS C			4Q				
In c 0, Army, G/ATOR IOC				4Q		4Q	
JLENS							
MS B		1Q					
MS C					3Q		
First Unit Equipped							1Q

R-1 SHOPPING LIST - Item No. 108

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION , NAVY/ BA-5**				R-1 ITEM NOMENCLATURE 0604503N/Submarine Systems Equipment Development			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**96.865**	**106.048**	**94.839**	**113.241**	**123.616**	**101.222**	**110.525**
0775/Submarine Support Equipment	**1.357**	**1.384**	**1.699**	**1.378**	**1.407**	**1.441**	**1.474**
0219/Submarine Sonar Improvements	**44.034**	**53.518**	**58.078**	**63.383**	**66.253**	**62.943**	**75.051**
0742/Submarine Integrated Antenna Systems	**23.916**	**24.579**	**18.606**	**32.051**	**41.839**	**27.484**	**25.018**
1411/Submarine Tactical Communications Systems	**7.428**	**14.567**	**16.456**	**16.429**	**14.117**	**9.354**	**8.982**
9999/Congressional Adds	**20.130**	**12.000**					

Defense Emergency Responses Funds (DERF) Funds: NOT APPLICABLE

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (EWS) techniques, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability 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 EWS to be operationally effective in the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime Protection, and Joint Strike.

The Submarine Sonar Improvement 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.

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

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	**BA-5**	0604503N/ Submarine Systems Equipment Development

B. (U) Program Change Summary:

Funding: For BLIs 0775/0219/0742/1411	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Controls)	74.485	95.499	111.507
FY07 President's Budget	76.735	94.048	94.839
Total Adjustments	2.250	-1.451	-16.668

		Summary of Adjustments Issue Number			
F0219	Small Business Innovation Rese	60070	-0.558		
	Dept. of Energy Transfer	74501	-0.031		
	Execution Realignment by Fund	90001	4.287		
	Trusted Foundry (OSD-14)	61228	0.055		
	Contract Support Reduction	51002			-3.479
	NWCF Civpers Efficiencies	51051			-0.241
	Delay procurement and development	51075			-3.400
	N7 Respread of Contractor Support	51078			1.754
	Vxx Shortfall	52036			-10.400
	PBD 604 Inflation	61956			0.326
	PB07 Fuel Price Adjustments	61967			0.135
	PBD606 CIVPERS Pay Raise	62069			0.040
	Sec. 8125: Revised Economic As.	62428		-0.247	
	Congressional Action 1% Reduction	63206		-0.568	
742	Small Business Innovation Research		-0.349		
	Federal Technology Tansfer Tax		-0.007		
	Department of Energy Transfer		-0.019		
	Miscellaneous Navy Adjustments		-1.014		
	Nuclear Physical Security (OSD-09)		0.005		
	Trusted Foundry (OSD-14)		0.026		
	NWCF Civpers Efficiencies				-0.110
	PBD 604 Inflation				0.082
	PB07 Fuel Price Adjustment				0.115
	Civpers Pay Raise				0.027
	Federally Funded Research			-0.114	0.000
	Revised Economic Assumptions			-0.018	0.000
	Congressional Action 1% Reduction			-0.261	0.000
1411	Small Business Innovation Research (SBIR)		-0.049		
	Department of Energy Transfer		-0.006		
	Nuclear Physical Security (OSD-9)		0.002		
	Trusted Foundry (OSD-14)		0.015		
	Miscellaneous Navy Adjustments		-0.107		
	Contract Support Reduction				-1.566
	NWCF Civpers Efficiencies				-0.063
	PBD 604 Inflation				0.080
	Sec 8125 Revised Economic Assumptions			-0.067	
	Civpers Pay Raise Rate Change			0.000	0.023
	Congressional Action 1% Reduction			-0.155	0.000
0775	Dept. of Energy Transfer		-0.001		
	Trusted Foundry (OSD-14)		0.001		
	Inflation				0.008
	Civpers Pay raise				
	Revised Economic			-0.006	
	Congressional 1% reduction			-0.015	
	PBD 606 Pay Raise Rate				0.001
	Total Changes		2.250	-1.451	-16.668

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine System Equipment Development				PROJECT NUMBER AND NAME 0775/Submarine Support Equipment			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.357**	**1.384**	**1.699**	**1.378**	**1.407**	**1.441**	**1.474**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program develops and improves techniques, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability 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 (ES) systems to be operationally effective in the following mission areas: Joint Littoral Warfare; Joint Surveillance, Space and Electronic Warfare and Intelligence Collection; Maritime Protection; and Joint Strike. Efforts include: (1) Integration of the technology developed and transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770 into the tactical ES system**;** (2) Resolultion of software trouble reports during technology updates, from fleet feedback reports, and Submarine Warfare Federated Tactical System (SWFTS)/Non Proplusion Electronic System (NPES) Tactical Local Area Network (TACLAN) migrations**;** (3) Integration, test, and installation of COTS technology for system enhancements.

The program supports three submarine mission support categories; Threat Warning/Self Protection; Situational Awareness; and Intelligence, Surveillance and Reconnaissance (ISR). Threat Warning/Self Protection projects evaluate the vulnerability of submarine masts, periscopes and sensors to visual, radar, and infrared detection. It also evaluates state of the art technology to implement periscope/mast and engineering improvements into the tactical ES system, ie AN/BLQ-10 to reduce counter detection threats. Both Situational Awareness and ISR projects develop submarine unique improvements based on emerging technologies that are available from DOD exploratory development programs and other sources.

Threat Warning/Self Protection sub-projects include: Low Probability of Intercept (LPI) Receiver and AN/BLQ-10 software enhancements.

Situational Awareness sub-projects include: Embedded National Tactical Receiver (ENTR), Integration of GALE, and Multifunction Modular Mast (MMM) Antenna

ISR sub-projects include: Advanced EW Tuners and MMM Antenna..

RDTE Funding line supports the entire AN/BLQ-10 ES procurement program. Average FY OPN and SCN hardware procurement yearly funds are $80M.

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine System Equipment Development	PROJECT NUMBER AND NAME 0775/Submarine Support Equipment

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.357		
RDT&E Articles Quantity				

Conduct Test of Specific Emitter Identification, Automatic Contact Correlation, and LPI Receiver
NPES and SWFTS software baseline changes.
IA and RM C&A
Research and resolve AN/BLQ-10 SPRs.
ESM software enhancements.
Integrate ENTR/GALE into AN/BLQ-10.
LPI Development and Integration into AN/BLQ-10
Support development of MMM Antenna and new classified capabilities

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.384	
RDT&E Articles Quantity				

NPES and SWFTS software baseline changes.
Research and resolve AN/BLQ-10 SPRs.
ESM software enhancements.
At-Sea Test and Deployment of ENTR/GALE with AN/BLQ-10.
Support development of MMM Antenna.
Plan and support AN/BLQ-10(V)1 ES Virginia Class DT/OT

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				1.699
RDT&E Articles Quantity				

NPES software and SWFTS baseline changes.
Research and resolve AN/BLQ-10 SPRs.
ESM software enhancements.
Support development of MMM Antenna.
Support AN/BLQ-10(V)1 ES Virginia Class DT/OT
LPI Receiver Spiral 1 Development and Integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine System Equipment Development	0775/Submarine Support Equipment

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Budget Controls)	1.357	1.405	1.690
FY 07 President's Budget Controls:	1.357	1.384	1.699
Total Adjustments	0.000	-0.021	0.009

Schedule:

Technical:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604503N/Submarine System Equipment Development	0775/Submarine Support Equipment	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN Line 256000									
ML003 SSEP Special Purpose Equipment	0.265	0.27	0.275	0.28	0.285	0.291	0.297	Continuing	Continuing
ML007 ICADF	9.079	17.490	6.448	17.327	16.689	12.142	-	Complete	79.175
ML008 ICADF Antenna	10.529	15.770	9.580	17.047	19.833	22.714	23.123	Continuing	Continuing
ML009 APB-EW	1.452	0.150	0.282	0.648	1.178	1.087	1.246	Continuing	Continuing
ML010 Tech Refresh Upgrades	2.093	0.160	0.306	0.801	1.226	1.131	1.296	Continuing	Continuing
ML013 ESM IMA Support	0.041	0.182	0.186	0.190	0.193	0.197	0.201	Continuing	Continuing
ML015 AN/BLQ-10(V) SSN ES Backfit Systen	35.650	45.682	44.878	45.261	52.630	46.962	13.494	Continuing	Continuing
ML016 AN/BLQ-10(V) SSBN ES Systems	-	-	-	-	-	6.248	38.244	Continuing	Continuing
ML017 AN/BLQ-10 Field Change Kits	6.958	3.292	6.010	6.783	3.717	5.084	16.460	Continuing	Continuing
MLCA1 AN/BLQ-10(V) Tech Refresh	7.000	3.150	-						
SCN LI 201300									
PE 0204287N Partial (AN/BLQ-10 ES Only)	19.327	19.752	20.320	20.824	21.240	21.665	22.098	Continuing	145.226

Related RDT&E:
(U) PE 0603562N/Submarine Tactial Warfare System/F0770 Advanced Submarine Support Equipment Program (ASSEP)

E. ACQUISITION STRATEGY:

AN/BLQ-10 (V) ES System - Procurements are executed/managed in accordance with the Acquisition Strategy Report (Rev 3) for AN/BLQ-10(V) ES System dtd 10/10/00 and the Acquisition Plan (Rev 5) for AN/BLQ-10(V) ES System dtd 6/30/04.

F. MAJOR PERFORMERS:

Lockheed-Martin, Syracuse, NY - AN/BLQ-10 system developer and End-to-End Integrator
NUWC, Newport, RI - EW Library developer, AN/BLQ-10 systems engineering, TEMPALT development, integration support, DT/OT support, ISEA, and TDA.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)						DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604503N/Submarine System Equipment Development			PROJECT NUMBER AND NAME 0775/Submarine Support Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AN/BLQ-10 ES Product Improvement	CPFF	Lockheed Syracuse, NY		0.430	03/05	0.446	02/06	0.671	03/07	CONT	CONT	NA
Systems Engineering and Test Support	WR	NUWC Newport, RI		0.417	11/04	0.475	11/05	0.546	11/06	CONT	CONT	N/A
Miscellaneous	VARIOUS	VARIOUS		0.024	Numerous	0.000	11/05	0.018	11/06	CONT	CONT	N/A
Subtotal Product Development			0.000	0.871		0.921		1.235		CONT	CONT	N/A
Remarks:												
Software Development											0.000	NA
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Engineering Technical Services	CPIF	AT&T GSI, Vienna VA		0.250	11/04	0.250	11/05	0.213	11/06	CONT	CONT	NA
GFE											0.000	
Subtotal Support			0.000	0.250		0.250		0.213		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604503N/Submarine System Equipment Development					PROJECT NUMBER AND NAME 0775/Submarine Support Equipment				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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											0.000	
Travel				0.150	11/04	0.150	11/05	0.150	11/06	CONT	CONT	
Labor (Research Personnel)											0.000	
SBIR Assessment				0.086		0.056		0.101		CONT	CONT	
Subtotal Management				0.236		0.213		0.251		CONT	CONT	
Remarks:												
Total Cost			0.000	1.357		1.384		1.699		CONT	CONT	
Remarks:												

CLASSIFICATION:

EXHIBIT R-4, RDT&E Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT NAME AND NUMBER 0604503N/Submarine Sys Equip Development	PROJECT NAME AND NUMBER 0775/Submarine Support Equipment

SSEP F0775 SCHEDULE	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Specific Emitter ID/Auto Contact Correlation and Virginia Class DT/OT	DT/OT △		Virginia DT/OT △				
AN/BLQ-10 Baseline SWFTS and NPES Changes, SPR Resolution, and Software Enhancements	S/W Update △	S/W Update △	S/W Update △	S/W Update △	S/W Update △	S/W Update △	S/W Update △
Low Probability of Intercept (LPI) Receiver	Integration △		Spiral 1 △	Spiral 2 △			
Enhanced National Tactical Receiver (ENTR)/GALE	Integration △	At Sea Test △					
Advanced EW Tuners					Research △	Testing △	Downselect & Integration △
Multifunction Modular Mast (MMM) Antenna	Specification △	Integration △		Spiral 1 △		Spiral 2 △	

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**	PROGRAM ELEMENT 0604503N/Submarine Sys Equip Development			PROJECT NUMBER AND NAME 0775/Submarine Support Equipment			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
AN/BLQ-10 Baseline Changes, SPR Resolution, and Software Enhancements	2Q	2Q	2Q	2Q	2Q	2Q	2Q
Specific Emitter ID/ACC & Virginia DT/OT							
At -Sea Test	3Q		2Q				
ENTR/GALE							
Integration	2Q						
At -Sea Test		2Q					
Multifunction Modular Mast (MMM) Antenna							
S/W Specification	2Q						
Integration		3Q					
Spiral 1				2Q			
Spiral 2						2Q	
Advanced EW Tuners							
Research					2Q		
Testing						2Q	
Downselect and Integration							2Q
LPI							
Integration	2Q						
Spiral 1			1Q				
Spiral 2				2Q			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development				PROJECT NUMBER AND NAME 0219/Submarine Sonar Improvement			
COST ($ in Millions)		FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011
Project Cost		**44.034**	**53.518**	**58.078**	**63.383**	**66.253**	**62.943**	**75.051**
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. 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 provide increased operational capabilities and relability improvements to maintain a clear acoustical, tactical, and operational superiority over submarine and surface combatants. These efforts include development of a Fiber Optic Thinline Towed Array, (TB-33) for increased reliability, and the Next Generation Fatline Towed Array (TB-34) and Hull Mounted array which provide improved Littoral Operaitonal capability. The Mission Tailored Towed Array (MTTA) is a variant of the TB-29A/FOTL array which will improve acoustic sensor performance in littoral and open ocean environments. The mission tailored TB-29A/FOTL array will be re-configurable in aperture and length based on the mission to be performed and will expand frequency coverage via a high frequency aperture(s).

AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvement

B. Accomplishments/Planned Program

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		14.612	14.106	14.562
RDT&E Articles Quantity				

APB Productionization
Completed A-RCI OpEval in FY03. Received A-RCI MSIII decision authority in FY04.
Continue Advanced Processing Build (APB) Sea Testing, Integration and Certification. This effort is primarily the transition of APB software from development to A-RCI for integration and test, and formal certification.
APB sea tests scheduled for FY05 and FY06.

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		20.592	27.759	35.790
RDT&E Articles Quantity				

Integration and Testing.
Awarded new contracts to Lockheed Martin and General Dynamics in FY04 for continued A-RCI and MPP development, integration and test.
Continued Integration and testing to support the introduction of Advanced Processing Builds to be installed on SSN 688I, SSN 688, SSBN 730, SSN 21, and SSGN 726 and VA Class.

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		3.320	0.900	
RDT&E Articles Quantity				

BQS-15A EC20
Merges the BQS-15 EC-18 array with A-RCI processing displays.
FY05 - fund the development, integration and testing associated with upgrading the existing outboard receiver, internal array components and Unit 6 Display Console.
FY06 - Complete development, integration and testing of the BQS-15A EC-20.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvement

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				2.000
RDT&E Articles Quantity				

HF Precision Imaging Active Sonar
Begin development efforts for HF Precision Imaging Active Sonar in FY07.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.146	0.300	
RDT&E Articles Quantity				

The development of the Next Generation Fatline Towed Array provides improvement in littoral water operations and increased frequency coverage.
Began development efforts for the Next Generation Fatline Towed Array in FY04.
Continue development efforts in FY05. Conduct design readiness review , complete EDM integration and assembly efforts.
Complete development and conduct early operational assessment in FY06.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvement

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		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		5.364	4.453	5.726
RDT&E Articles Quantity				

Affordable Towed Array Technology (ATAT) development provides more affordable and reliable thinline arrays using fiber optic technology.
FY04 - Continue development of Affordable Towed Array Technology (ATAT, Fiber Optic Array, TB-33). Conduct PDR.
FY05 - Continue ATAT development and conduct CDR.
FY06 - Continue development of ATAT and begin EDM fabrication.
FY07 - Continue development of ATAT, complete EDM fabrication and begin at sea operational assessment.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			6.000	
RDT&E Articles Quantity				

Mission Tailorable Towed Array (MTTA) development provides mission dependent variant of thinline arrays to improve sensor performance in littoral environment while maintaining open ocean capability.
FY06- Complete development of mission dependent variant of thinline arrays.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvement

C. PROGRAM CHANGE SUMMARY:

Funding:		FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY06 Pres Controls)		40.281	54.333	73.343
FY07 President's Budget		44.034	53.518	58.078
Total Adjustments		3.753	-0.815	-15.265
Summary of Adjustments				
Issue				
Small Business Innovation Rese	60070	-0.558		
Dept. of Energy Transfer	74501	-0.031		
Execution Realignment by Fund	90001	4.287		
Trusted Foundry (OSD-14)	61228	0.055		
Contract Support Reduction	51002			-3.479
NWCF Civpers Efficiencies	51051			-0.241
Delay procurement and development	51075			-3.400
N7 Respread of Contractor Support	51078			1.754
Vxx Shortfall	52036			-10.400
PBD 604 Inflation	61956			0.326
PB07 Fuel Price Adjustments	61967			0.135
PBD606 CIVPERS Pay Raise	62069			0.040
Sec. 8125: Revised Economic As.	62428		-0.247	
Congressional Action 1% Reduction	63206		-0.568	
Subtotal		3.753	-0.815	-15.265

Schedule:

The A-RCI and TB-29 TECHEVAL/OPEVAL completed in FY03. Both programs obtained approval to proceed with the FY04 Production Buys in the MDA (Milestone Decision Authority) Review held in October 2003. Milestone III authority for A-RCI was received in February 2004.

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN BLI 214700 SSN Acoustics	185.372	190.098	223.214	260.745	227.085	235.699	255.048	Continuing	Continuing
OPN BLI 214705 SSN Acoustics Installation	43.976	41.514	61.682	75.852	77.184	72.813	39.109	Continuing	Continuing
Total	229.348	231.612	284.896	336.597	304.269	308.512	294.157		

E. ACQUISITION STRATEGY:

A-RCI utilizes an open architecture and Commercial Off-the-Shelf products in support of new and upgraded sonar systems. A follow-on development and production sole source cost plus award fee contract was awarded to Lockheed Martin Federal Systems and General Dynamics, Advanced Information Systems in December 2003. Program Review with Milestone Decision Authority was conducted in October 2003 granting approval for the FY04 production option. MS III authority for A-RCI was received in February 2004.

Towed Systems is the development of a highly reliable and more affordable Fiber Optic Thinline 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 acoustics capabilities necessary to meet today's and tomorrow threats. This development is being accomplished under a Phase III SBIR. In FY04 Towed Systems will award multiple competitive contracts for the development of a Fatline Towed Array which will provide better littoral operations and ranging. The Low Cost Conformal Array (LCCA) will transition from ASTO in FY07 with a competitive contract being awarded for the EDM development.

F. MAJOR PERFORMERS:

Lockheed Martin Corporation, Naval Electronics and Surveillance Systems-Undersea Systems; Manassas, Virginia - 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.

General Dynamics, Advanced Information Systems; Fairfax, Virginia - Provides primary software development for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N/Submarine Systems Equipment Development	0219/Submarine Sonar Improvements

F. Major Performers (cont'd)

Naval Undersea Warfare Center, Newport, Rhode Island - Provides systems engineering support for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Work Requests to be issued October each fiscal year.

Chesapeake Science Corporation, Millersville, Maryland: 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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604503N/Submarine Syster		0219/Submarine Sonar Improvement							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 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	15.074	4.004	10/04	4.284	10/05	4.399	10/6		27.761	
Primary Hardware Development	SS/CPAF	LMC, Manassas, VA	128.677	15.119	11/04	18.583	11/05	23.773	11/06		186.152	
Ancillary Hardware Development	SS/CP	ARL University of Texas	2.738	2.402	12/04	2.600	12/05	2.600	12/06		10.340	
		Newport News		0.044		0.037		.048			0.129	
Systems Engineering	WX	NUWC, Newport R.I.	95.270	4.876	10/04	5.201	10/05	5.253	10/06		110.600	
		NUWC, Newport R.I. (MTTA)				4.620						
Systems Engineering	SS/CPAF	LMC, Syracuse N.Y.	5.763								5.763	
Systems Engineering	Various	Various	12.220		10/04	0.087	10/05				12.307	
Software Development	SS/CP	Progeny Systems	4.981	2.200	11/04	2.200	11/05	2.200	11/06		11.581	
Systems Engineering	WX	NSWC, Carderock MD	3.146	1.100	10/04	1.445	10/05	1.445	10/06		7.136	
Systems Engineering	SS/CP	John Hopkins APL	3.051	3.100	12/04	3.780	12/05	3.78	12/06		13.711	
Hardware/Software Development	Various	SBIR's	1.303	0.075	10/04	0.075	12/05	.075	12/06		1.528	
Award Fees	SS/CPAF	LMC, Syracuse N.Y.	0.495								0.495	
Miscellaneous	Various	Various	9.402								9.402	
Systems Engineering	WX	NSWC, Crane, IN	0.076	0.078	10/04	0.080	10/05	.085	10/06		0.319	
Hardware/Software Development	C/CPIF	TBD		0.146	10/04	0.000	10/05	0.000	10/06		0.146	
Systems Engineering	WX	Naval Research Lab (NRL)	0.390	0.233	10/04	0.199	10/05	0.256	10/06		1.078	
											0.000	
											0.000	
Subtotal Product Development			296.773	33.377		43.191		43.914		0.000	412.635	

Remarks:

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)						DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604503N/Submarine Systen		PROJECT NUMBER AND NAME 0219/Submarine Sonar Improvement							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Software Development	TBD	TBD									0.000	
Primary Software Development	SS/CPAF	General Dynamics, AIS	106.248	9.239	11/04	8.714	11/05	12.836	11/06		137.037	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			106.248	9.239		8.714		12.836		0.000	137.037	

Remarks:

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT	PROJECT NUMBER AND NAME								
RDT&E, N / BA-5			0604503N/Submarine Systen	0219/Submarine Sonar Improvement								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR	1.051	0.468	10/04	0.663	10/05	.368	10/06		2.550	
Developmental/Operational T&E	Various	Various	6.118								6.118	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			7.169	0.468		0.663		.368		0.000	8.668	
Remarks:												
Contractor Engineering Support											0.000	
Management Support Services	Various	Various	3.514	0.675	11/04	0.675	11/05	.675	11/06		4.864	
Program Management Support	SS/CP	Mitre	0.523								0.523	
Travel	PD	NAVSEA	0.175	0.275	11/04	0.275	11/05	.285	11/06		0.725	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			4.212	0.950		0.950		.960		0.000	6.112	
Remarks:												
Total Cost			414.402	44.034		53.518		58.078		0.000	458.436	
Remarks:												

R-1 SHOPPING LIST - Item No. 109

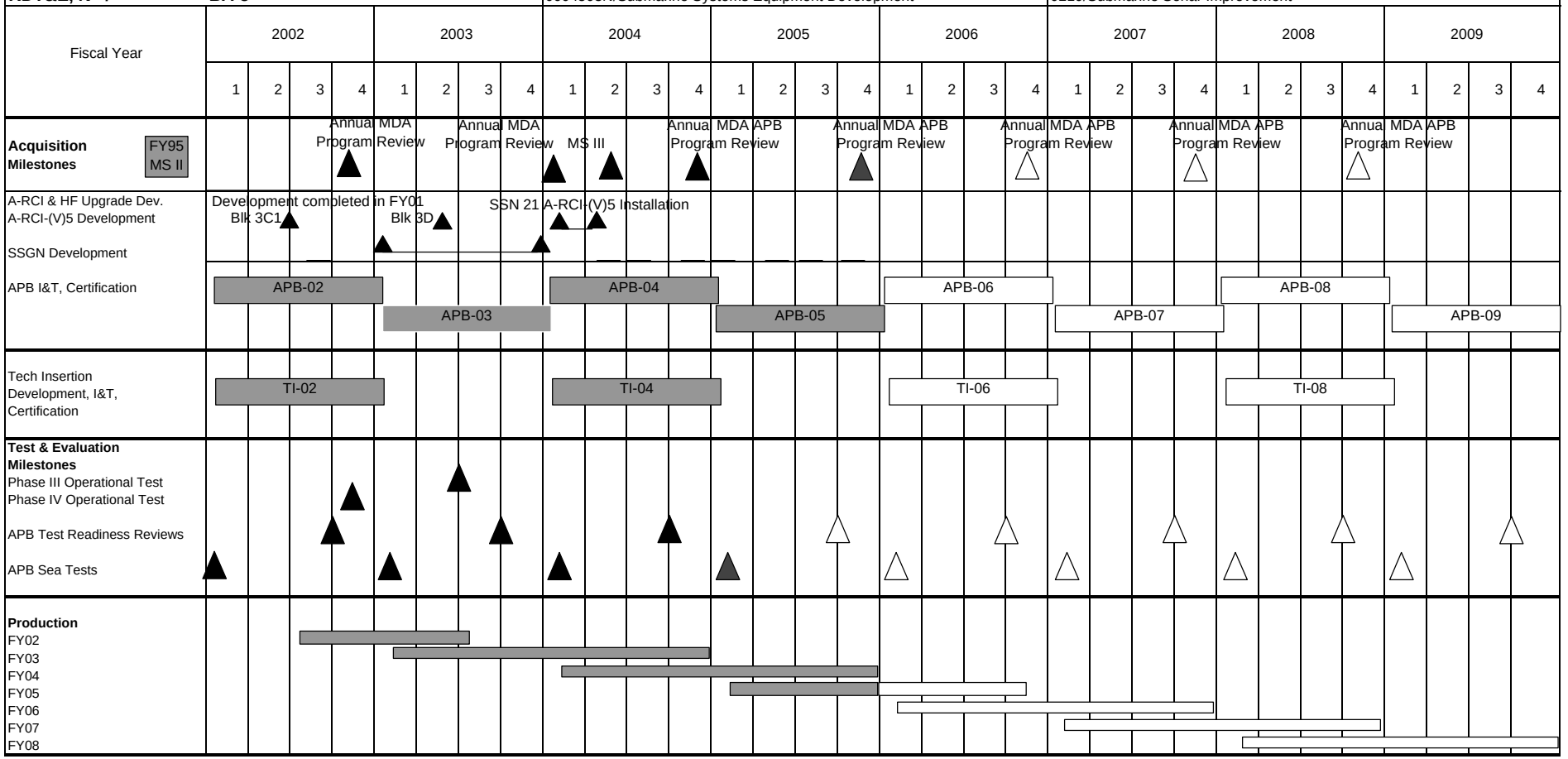
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604503N/Submarine Systems Equipment Development

PROJECT NUMBER AND NAME: 0219/Submarine Sonar Improvement



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**		PROJECT NUMBER AND NAME 0219/Submarine Sonar Improvement			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone II (MSII) FY95					
A-RCI APB Integration	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Annual Program Review	4Q	4Q	4Q	4Q	4Q
Milestone C (MS C)					
Production Awards	2Q	2Q	2Q	2Q	2Q
APB Test Readiness Review (TRR)	3Q-4Q	1Q, 3Q, 4Q	1Q, 3Q, 4Q	1Q, 3Q, 4Q	1Q, 3Q, 4Q
APB Sea Tests	3Q	3Q	3Q	3Q	3Q
APB Deliveries	1Q	1Q	1Q	1Q	1Q
	1Q				
Tech Insertions		1Q-4Q		1Q-4Q	
Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **Next Generation Fatline Development** — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N: SSN-688 and Trident Modernization	0219: 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
Acquisition Milestones																																
Next Generation Fatline Development												Prototype Manufacturing Development																				
Production Representative Delivery																△																
Test & Evaluation Milestones																																
Lake Test																		△														
Sub Demo																			△													
Operational Test																						△	OT	△								
Procurement Production Contract																			△													
Deliveries																							△									

R-1 SHOPPING LIST - Item No. 109

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

CLASSIFICATION:

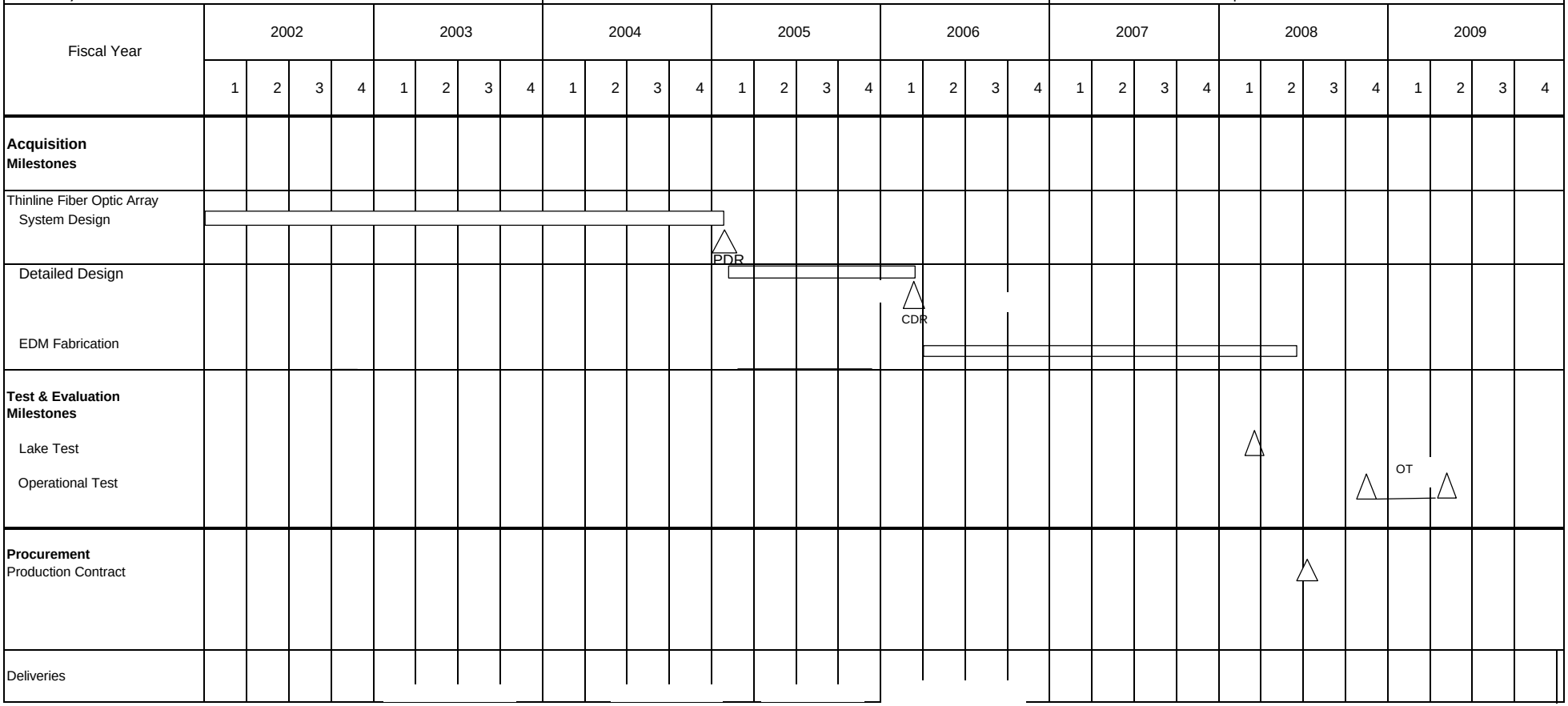
Exhibit R-4a, Schedule Detail **Next Generation Fatline Array Development**					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**					PROJECT NUMBER AND NAME 0219: Submarine Sonar Improvement		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Next Generation Fatline Array Development FY04-FY06							
Multiple Development contracts awarded							
Prototype delivery		1Q					
Lake Test		1Q					
Sub Demo		2Q					
Production Award to Winner		3Q					
Delivery of Production Arrays			3Q				
Operation Test Begin			3Q				
Operation Test End			4Q				

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **Thinline Fiber Optic Array** — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N: SSN-688 and Trident Modernization	0219: Submarine Sonar Improvement



R-1 SHOPPING LIST - Item No. 109

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604503N: SSN688 and Trident Modernization				PROJECT NUMBER AND NAME 0219: Submarine Sonar Improvement			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Fiber Optic Thinline Development FY02-FY07								
System Design PDR				1Q				
Detailed Design CDR					1Q			
EDM Fabrication #1 Begin - Complete					2Q	4Q		
EDM Fabrication #2 Begin - Complete						1Q	3Q	
Lake Test							1Q	
At Sea Operational Testing Begin							4Q	
At Sea Operational Testing End								2Q
Production Contract Awarded LRIP							3Q	
Production Deliveries								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	Program Element (PE) No. and Name	Project Unit (PU) No. and Name: Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
9384C				
Littoral Tactical Array System (LTAS)	1.000			

Provide a brief description of the Congressional Plus-Up.
The LTAS program provides for transformational application of Commercial-Off-The-Shelf (COTS) Towed Array sensor technologies and Open Architecture (OA) processing techniques.
· Perform test-bed validation and verification of the NextGen Fatline Towed Array
· Validate in-situ tactical littoral operations and performance
· Perform at-sea Operational Testing of various prototype NextGen Fatline Towed Arrays

	FY 06			
9384C				
Multi-Use Littoral TB-23 Towed Array	1.000			

Provide a brief description of the Congressional Plus-Up.
The Multi-Use Littoral TB-23 Towed Array development effort will leverage the existing TB-23 array design to provide a mission re-configurable capability for littoral or deep-water submarine missions. The proposed array would retain the proven and cost effective components of the current TB-23 array while leveraging cost savings and commonality with the newest Navy arrays (MFTA, TB-29A) in addressing obsolescence issues and enhanced capabilities.

	FY 06			
9384C				
Affordable Towed Array Construction	1.500			

Provide a brief description of the Congressional Plus-Up.
Affordable Towed Array Construction develoption provides evaluation through fabrication of additional hardware, automate manufacturing processes to improve product quality, increase production rate and minimize defects resulting in improved system reliability and reduced cost, and qualify commercial sources for critical components including amplitude modulators, fiber Bragg gratings, and low noise lasers.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) No. and Name	PROJECT NUMBER AND NAME Project Unit (PU) No. and Name: Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
9840N				
Improved Submarine Towed Array Reliablity	2.500			

Provide a brief description of the Congressional Plus-Up.
Improved Submarine Towed Array Reliablity development provides procurement of Towed Array Handler reliability improvements such as the Capstan Wrap Reduction Modification and Control/Indicator unit upgrades which reduce stress on the towed array, improving reliability and availability of the array.

	FY 06			
9841N				
SONAR Advanced Optical Co-Processor (SOAC)	1.200			

Provide a brief description of the Congressional Plus-Up.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5

R-1 ITEM NOMENCLATURE
PE: 0604503N TITLE: Submarine Systems Equipment Development

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**31.344**	**43.946**	**35.062**	**48.480**	**55.956**	**36.838**	**34.000**
0742/Submarine Antenna Integrated System		**23.916**	**24.579**	**18.606**	**32.051**	**41.839**	**27.484**	**25.018**
1411/Submarine Tactical Communications System		**7.428**	**14.567**	**16.456**	**16.429**	**14.117**	**9.354**	**8.982**
1950C/Common Submarine Radio Room		**0.000**	**1.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9842N/Submarine Launched Expendable Communications		**0.000**	**1.800**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9843N/Submarine-Enabling Airborne Data Exchange		**0.000**	**2.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Quantity of RDT&E Articles								

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

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (ES) techniques and components, equipment, and systems that will increase submarine operational effectiveness in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for submarine ES to be effective in conducting the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime Protection, and Joint Strike.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604503N Title: SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	Project Cost	**23.916**	**24.579**	**18.606**	**32.051**	**41.839**	**27.484**	**25.018**
RDT&E Articles Qty								

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

The Submarine Integrated Antenna System (SIAS) project (0742) provides 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) PrePlanned Product Improvement (P3I) efforts to existing antennas including Outboard Electronics-538/BRC (OE-538/BRC) Multi-Function Antenna improved Ultra High Frequency (iUHF) gain, Radio Frequency Distribution and Control System (RFDACS) efforts and the OE-562 Submarine High Data Rate (SubHDR) system development of X-band and Super High Frequency SHF) K-band capabilities, (2) Development of new antenna systems including Advanced High Data Rate Antenna (AdvHDR) and (3) Communication at Speed and Depth (CSD) design efforts. These efforts will provide Ship Submersible Nuclear (SSN), Ship Submersible Ballistic Nuclear (SSBN) and Ship Submersible Guided Nuclear (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.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Advanced HDR/SubHDR P-3I		13.937	15.032	8.064
RDT&E Articles Quantity				

FY05: Continued development of Super High Frequency Follow-On Terminal (SHF FOT) to accommodate SHF capability and meet the high priority fleet requirement to provide a secondary global Internet Protocol (IP) connectivity. Developed prototype unit, initial logistics development and testing requirements. ($10.478) Began FOT modification development for simultaneous Global Broadcast System (GBS) and Extremely High Frequency (EHF) functionality (GBS Open Loop Point Mod and Antenna Position Unit (APU) Power Supply Upgrade). ($3.459) **FY06**: Continue FOT modification development for SHF functionality and Software Communication Architecture (SCA) compliance ($14.633) Commence program planning and generation of acquisition documentation for AdvHDR ($.399) **FY07**: Complete SHF FOT development/test and SCA compliance ($1.258). Commence APU Power Supply Upgrade and Mast Flood Protection P3I for SubHDR ($1.842). Commence development of systems engineering, detailed specification documentation, and the Engineering Development Model (EDM) antenna mast assembly, source selection, award of contract and conduct risk reduction and technology insertion investigations for AdvHDR $4.964).

		FY 05	FY 06	FY 07
Comms at Speed and Depth		5.132	4.532	4.984
RDT&E Articles Quantity				

FY05: Performed Analysis of Alternatives (AoA), technical risk reduction studies, and initiated systems engineering, environmental impact analysis, and generation of acquisition documentation for Comms at Speed and Depth (CSD) systems. Commenced development of Increment 1 (Expendable Buoys) and performed sea tests of Acoustic/Radio Frequency (RF) Gateway buoy technology demo prototypes ($3.242). Initiated technical development of interface, requirements, installation, and environmental test plan documentation package to enable installation of the United States/United Kingdom (US/UK) Recoverable Tethered Fibre Optic (RTOF) non-expendable buoy ($1.890). **FY06**: Continue to perform technology development and sea testing; a portion of this effort includes cost sharing with Office of Naval Research (ONR). Obtain approval of requirements documentation and develop pre-acquisition documentation for the overall Comms at Speed and Depth program. ($2.121) Complete technical development of documentation package for RTOF submarine installation. Award contract for RTOF installation. Award contract for RTOF installation aboard US Navy submarine and initiate development of installation plan ($2.411). **FY07**: Continue cost share technology development with ONR. Execute at-sea developmental testing for Expendable Buoys. Obtain approved Capability Development Document (CDD) and Milestone B decision for the Non-Expendable Solutions (NES) (Increment II). ($3.466). Install RTOF system aboard OHIO Class submarine, provide technical oversight to sea test, remove RTOF system, and restore original capability to submarine ($1.518).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Antenna Transition Engineering		4.847	5.015	5.558
RDT&E Articles Quantity				

FY05: Continued to provide emerging requirements and Satellite communications Database/Link analysis for other development programs (i.e. Iridium Enhanced Module Satellite Service (Iridium EMSS), Wideband Gapfiller System (WGS), Advanced Extremely High Frequency (EHF), and Wideband Commercial ($1.071). Continued Preplanned Product Improvement (P3I) investigations and development efforts for legacy antenna systems ($1.478). Continued concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications ($2.298). **FY06**: Continue to provide emerging requirements and Satellite communications Database/Link analysis for other development programs (i.e. Mobile User Objective System/Advanced Narrowband System (MUOS/ANS), Iridium EMSS, WGS, Advanced EHF, and Wideband Commercial ($1.446). Continue P3I investigations and development efforts for legacy antenna systems ($1.326). Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications ($2.243) **FY07**: Continue to provide emerging requirements and Satellite communications Database/Link analysis for other development programs (i.e. MUOS/ANS, Iridium EMSS, WGS, Advanced EHF, and Wideband Commercial ($1.138). 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 ($2.694)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	0.000
RDT&E Articles Quantity				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	25.274	24.972	18.492
FY07 President's Budget	23.916	24.579	18.606
Total Adjustments	-1.358	-0.393	0.114
Summary of Adjustments * Include Issue No. & Cong. Language Sec. if applicable			
Small Business Innovation Research	-0.349		
Federal Technology Tansfer Tax	-0.007		
Department of Energy Transfer	-0.019		
Miscellaneous Navy Adjustments	-1.014		
Nuclear Physical Security (OSD-09)	0.005		
Trusted Foundry (OSD-14)	0.026		
NWCF Civpers Efficiencies			-0.110
PBD 604 Inflation			0.082
PB07 Fuel Price Adjustment			0.115
Civpers Pay Raise			0.027
Federally Funded Research		-0.114	0.000
Revised Economic Assumptions		-0.018	0.000
Congressional Action 1% Reduction		-0.261	0.000
Subtotal	-1.358	-0.393	0.114

(U) Schedule:

SubHDR FOT/SHF Initial Operating Capability (IOC) rephased from 2nd qtr FY06 to 4th qtr FY07.
K-band no longer applicable to SubHDR due to antenna development being ahead of requirement for Unmanned Aerial Vehicle (UAV) connectivity.

(U) Technical:

Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
3130 Submarine Communications	61.744	81.062	47.316	42.739	28.924	46.885	69.392	Continue	Continue

Related RDT&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.

(U) E. ACQUISITION STRATEGY: *

Program Milestones: FY 2008 1Q Comms at Speed and Depth Milestone C (MS-C) for Increment I; FY2007 3Q Adv HDR MS-B
T&E Milestones:
Contract Milestones:

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Digital Interface Dev (HDR)	CPAF	Raytheon, Marlboro, MA	3.545								3.545	3.545
Hardware Dev (HDR/Adv HDR)	WX	NUWC, Newport, RI	7.674	0.000		1.411		0.000			9.085	0.000
Hardware Dev (HDR SHF/FOT)	TBD	Raytheon, Marlboro, MA	1.717	8.615	TBD	4.300	TBD	1.069		Cont	Cont	16.863
Hardware Dev (Trans Eng)	CPAF	Sippican Marion, MA	1.410							Cont	Cont	1.410
Systems Engineering (Comms)	TBD	TBD		1.705		3.669		4.514				
Systems Engineering (HDR/AdvHDR)	TBD	TBD		0.000		5.395		1.846				
System Engineering (HDR/AdvHDR)	WX	NUWC, Newport, RI	6.215	4.150		1.261		3.307			14.933	0.000
System Engineering (Trans Eng)	WX	NUWC, Newport, RI	4.731	4.956		4.238		4.192			18.117	
Systems Engineering (Comms)	WX	NUWC, Newport, RI	0.000	2.805		2.896		2.399		Cont	8.100	0.000
Subtotal Product Development			25.292	22.231		23.170		17.327		0.000	88.020	0.000

Remarks:

Development Support											0.000	0.000
Software Development	WX	NUWC, Newport, RI	0.739								0.739	0.000
Training Development											0.000	0.000
Integrated Logistics Support	Various	Various	0.530	0.599		0.438		0.441			2.008	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			1.269	0.599		0.438		0.441		0.000	2.747	0.000

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & Trident Modernization	0742 Submarine Integrated Antenna System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	0.000
Operational Test & Evaluation											0.000	0.000
Developmental/Operational T&E	Various	Various	1.167	0.100							1.267	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			1.167	0.100		0.000		0.000		0.000	1.267	0.000
Remarks:												
Contractor Engineering Support											0.000	0.000
Government Engineering Support											0.000	0.000
Program Management Support	Various	Various	1.595	0.986		0.971		0.838			4.390	0.000
Travel											0.000	0.000
Subtotal Management			1.595	0.986		0.971		0.838		0.000	4.390	0.000
Remarks:												
Total Cost			29.323	23.916		24.579		18.606		0.000	96.424	0.000
Remarks:												

R-1 SHOPPING LIST - Item No. 109

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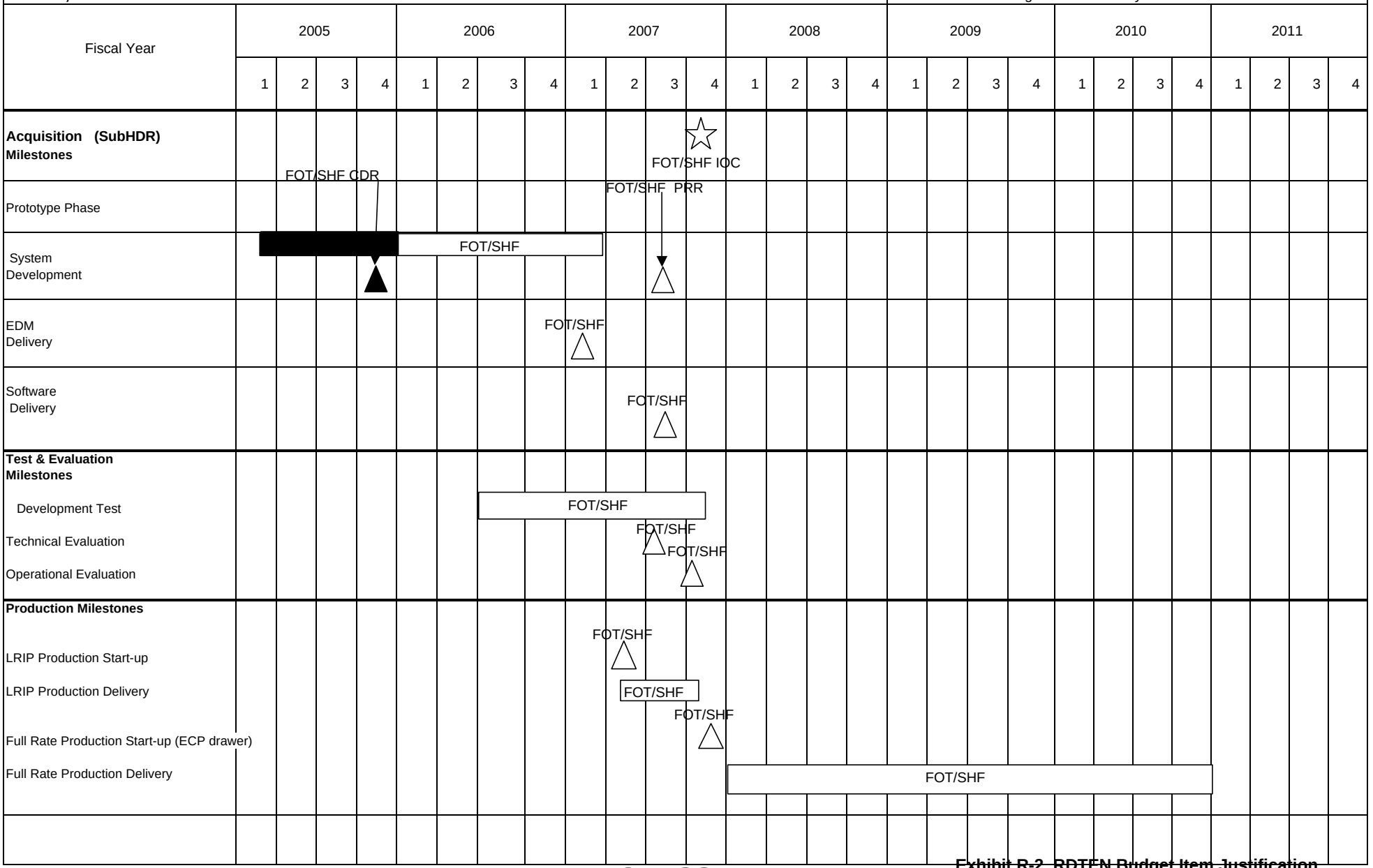
EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N / PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION

PROJECT NUMBER AND NAME
0742 Submarine Integrated Antenna System



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

CLASSIFICATION:

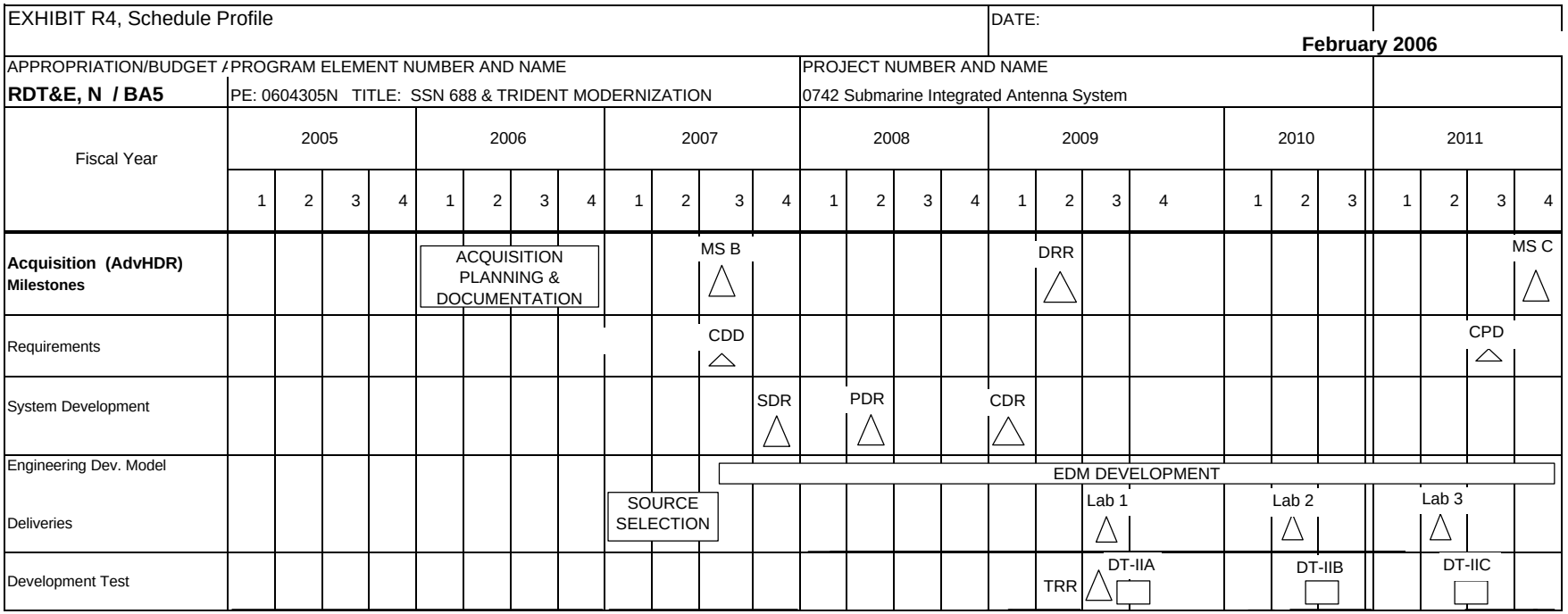
Exhibit R-4a, Schedule Detail				DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 0742 Submarine Integrated Antenna System			
Schedule Profile (SubHDR)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FOT/SHF Critical Design Review (CDR)		4Q						
FOT/SHF Eng Dev Model (EDM)				1Q				
FOT/SHF Developmental Testing (DT)				3Q				
FOT/SHF Technical Evaluation (TECHEVAL)				3Q				
FOT/SHF Operational Evaluation (OPEVAL)				4Q				
FOT/SHF Software Delivery				3Q				
FOT/SHF Preproduction Readiness Review (PRR)				3Q				
FOT/SHF Low Rate Production (LRIP) Start-up								
FOT/SHF Low Rate Production (LRIP) delivery				2Q				
FOT/SHF Full Rate Production (FRP) Start-up					1Q			
FOT/SHF Full Rate Production (FRP) First Delivery						1Q		
FOT/SHF IOC				4Q				

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION	0742 Submarine Integrated Antenna System



R-1 SHOPPING LIST - Item No. 109

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA5**	PROGRAM ELEMENT PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 0742 Submarine Integrated Antenna System			
Schedule Profile (AdvHDR)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acquisition Planning & Documentation			1Q-4Q					
Approval of Capability Development Document (CDD)				3Q				
Milestone B Decision (MS B)				3Q				
Source Selection				1Q-3Q				
Engineering Development Model Development				3Q--	1Q--	1Q--	1Q--	1Q--
System Design Review (SDR)				4Q				
Preliminary Design Review (PDR)					2Q			
Critical Design Review (CDR)						1Q		
Design Readiness Review (DRR)						2Q		
Test Readiness Review (TRR)						3Q		
Eng Dev Model (EDM) - Lab 1 Delivery						3Q		
Development Test DT-IIA						3Q-4Q		
Eng Dev Model (EDM) - Lab 2 Delivery							2Q	
Development Test DT-IIB							2Q-3Q	
Eng Dev Model (EDM) - Lab 3 Delivery								2Q
Development Test DT-IIC								2Q-3Q
Approval of Capability Production Document (CPD)								3Q
Milestone C (MS C) Decision								4Q

R-1 SHOPPING LIST - Item No. 109

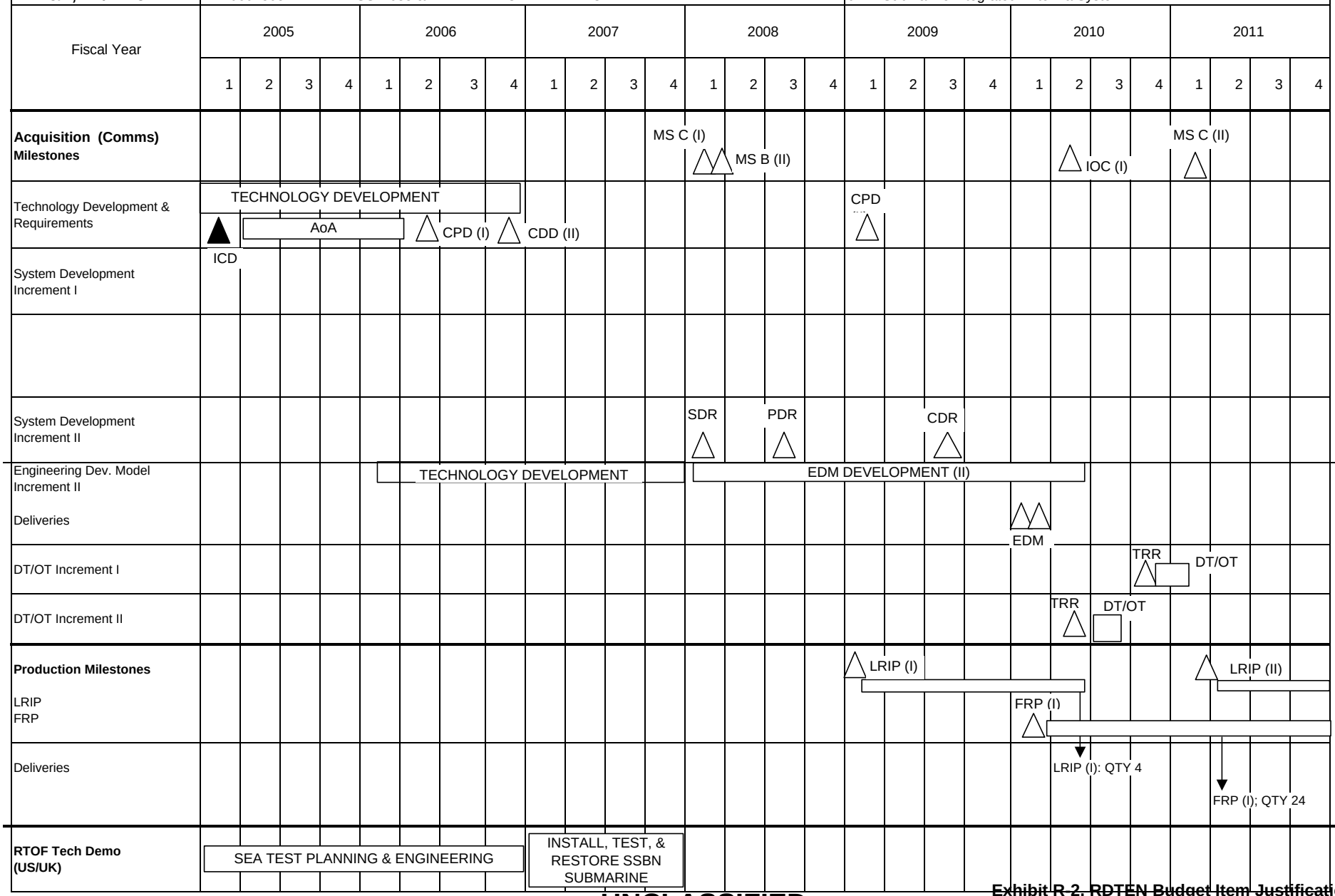
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA5**

PROGRAM ELEMENT NUMBER AND NAME: PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION

PROJECT NUMBER AND NAME: 0742 Submarine Integrated Antenna System



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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA5**	PROGRAM ELEMENT PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 0742 Submarine Integrated Antenna System			
Schedule Profile (Comms)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Technolgy Development	1Q--	2Q						
Approval of Initial Capability Document (ICD)	1Q--							
RTOF Test Planning & Engineering	1Q--	1Q--						
Analysis of Alternatives	2Q-	1Q						
Approval of Capability Development Document (CDD)		2Q						
Milestone B Decision (MS B)		2Q						
EDM Development for Increment I		2Q--	1Q--					
RTOF Install, Test, & Restore			1Q-4Q					
System Design Review (SDR) for Increment I		3Q						
Preliminary Design Review (PDR) for Increment I		4Q						
Critical Design Review (CDR) for Increment I			4Q					
Approval of CDD for Increment II			4Q					
Design Readiness Review (DRR) for Increment I				1Q				
EDM Development for Increment II				1Q--	1Q--	1Q--	1Q	
Test Readiness Review (TRR) for Increment I				1Q				
System Design Review (SDR) for Increment II				1Q				
Eng Dev Model (EDM) - Lab 1 Delivery for Increment I				2Q				
Development Test DT-IIA for Increment I				2Q-3Q				
Preliminary Design Review (PDR) for Increment II				3Q				
Eng Dev Model (EDM) - Lab 2 Delivery for Increment I				4Q				
Development Test DT-IIB for Increment I				4Q				
Approval of Capability Production Document (CPD) (Inc. I)				4Q				
Milestone C (MS C) Decision for Increment I				4Q				
Low-Rate Initial Production (LRIP) for Increment I					1Q-2Q			
Operational Testing (OT-IIA) for Increment I					3Q			
Critical Design Review (CDR) for Increment II					3Q			
Initial Operational Capability (IOC) for Increment I					4Q			
Full Rate Production Decision for Increment I						1Q		
Test Readiness Review (TRR) for Increment II						1Q		
Development Test DT-IIA for Increment II						2Q-3Q		
Eng Dev Model (EDM) - Lab 1 Delivery for Increment II						3Q		
Development Test DT-IIB for Increment II						4Q		
Eng Dev Model (EDM) - Lab 2 Delivery for Increment II							1Q	
Approval of CPD for Increment II							1Q	
Milestone C (MS C) Decision for Increment II							2Q	
Low-Rate Initial Production (LRIP) for Increment II							2Q-4Q	
Operational Testing (OT-IIA) for Increment II							4Q	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604503N Title: SSN 688 & Trident Modernization	1411 Submarine Tactical Communications System

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	Project Cost	**7.428**	**14.567**	**16.456**	**16.429**	**14.117**	**9.354**	**8.982**
RDT&E Articles Qty								

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

The Submarine Tactical Communications System project (1411) provides submarines with communications systems designed to: (a) enhance data throughput through automation and integrated network management; (b) convert to ForceNet and tactical data networks, (c) provide submarines Internet Protocol (IP) connectivity; (d) be interoperable with other joint U.S. and combined allied military networks; and (e) improve reliability, maintainability, and availability. This is accomplished by providing the submarine with a properly integrated mix of fully interoperable Navy standard and Commercial Off-The-Shelf (COTS) communication equipment covering a wide range of frequencies and modes. The Common Submarine Radio Room (CSRR) integrates COTS and Government Off-The-Shelf (GOTS) components into a single radio room configuration for all classes of submarines. CSRR will leverage the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) design. The project provides for the development of a single Land-Based Integration Test Facility that consolidates existing Land -Based Testing Facilities into one facility supporting all classes of submarines. This project funds the development of a replacement Simulation/Stimulation (SIM/STIM) suite to support testing and training requirements. The project includes system engineering efforts associated with demonstration of new technology which will allow the submarine to connect to the Global Information Gig (GiG) and participate in strike group, as well as joint operations. The new technology will ensure the submarine's continued ability to participate in Network-Centric Warfare and exploit its inherent stealth capabilities in support of the joint and combined fight to achieve total battlespace dominance.

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & TRIDENT MODERNIZATION	1411 Submarine Tactical Communications System

(U) B. Accomplishments/Planned Program

Common Submarine Radio Room (CSRR)/		FY05	FY06	FY07
Submarine Communications Support System (SCSS)		6.609	13.724	15.629
RDT&E Articles Quantity				

FY05 Accomplishments: Performed system engineering/design development for 688 Class SCSS modernization ($.351). Completed CSRR integration and test support for OHIO class submarines ($4.798). Continued Information Security (INFOSEC) certification of all classes CSRR and commence Information Assurance (IA) recertification of legacy 688 class radio rooms ($.760) Commenced Engineering Change Proposal (ECP) development supporting Integration Test Facility (ITF) ($.700). **FY06**: Continue system engineering/design development for 688 SCSS modernization ($.300). Commence system engineering and development of Multi Purpose Reconfigurable Training System (MRTS) ($2.238). Continue Information Assurance (IA) and Information Security (INFOSEC) certification of all classes CSRR and continue IA recertification of legacy 688 class radio rooms ($.776) Commence system engineering, design development testing, software design development supporting CSRR modernization ($10.410) **FY07**: Continue system engineering/design development for 688 SCSS modernization ($.306). Continue system engineering and development of Multi Purpose Reconfigurable Training System (MRTS) ($1.738).Continue IA and continue INFOSEC certification of all classes CSRR and continue IA recertification of legacy 688 class radio rooms ($.792) Continue system engineering, test plan design development, software development, Integrated Logistics product development and curricula development for CSRR modernization ($4.909). Commence design/integration engineering, development testing, Follow-on Test and Evaluation support, software development and Subschool curricula development in support of unique 688 class CSRR requirements ($6.214). Commence unique 688 class software development ($1.670).

		FY05	FY06	FY07
BCA OPCON architecture		0.819	0.843	0.827
RDT&E Articles Quantity				

FY05 Accomplishments: Continued system engineering supporting Broadcast Authority Control/Operational Control (BCA/OPCON) architecture ($.819). **FY06:** Continue system engineering supporting BCA/OPCON architecture ($.843). **FY07**: Continue system engineering supporting BCA/OPCON architecture ($.827).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & TRIDENT MODERNIZATION	1411 Submarine Tactical Communications System

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY2007
FY06 President's Budget	7.573	14.789	17.982
FY07 President's Budget	7.428	14.567	16.456
Total Adjustments	-0.145	-0.222	-1.526
Summary of Adjustments			
Small Business Innovation Research (SBIR)	-0.049		
Department of Energy Transfer	-0.006		
Nuclear Physical Security (OSD-9)	0.002		
Trusted Foundry (OSD-14)	0.015		
Miscellaneous Navy Adjustments	-0.107		
Contract Support Reduction			-1.566
NWCF Civpers Efficiencies			-0.063
PBD 604 Inflation			0.080
Sec 8125 Revised Economic Assumptions		-0.067	
Civpers Pay Raise Rate Change		0.000	0.023
Congressional Action 1% Reduction		-0.155	0.000
Subtotal	-0.145	-0.222	-1.526

(U) Schedule:

CSRR program Milestone C 3rd Qtr FY05.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604503N SSN 688 & TRIDENT MODERNIZATION	1411 Submarine Tactical Communications System

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	To Complete	Total Cost
3130000 Submarine Communications	31.991	38.967	45.039	49.327	57.536	80.262	109.629	Continue	Continue

Related RDT&E:
PE 0602232N Space and Electronic Warfare (SEW) Technology
PE 0204163N Fleet Communications

(U) E. ACQUISITION STRATEGY: *

SCSS provides the system enginering and integration for the N77/N6 narrowband and wideband modernization plans on SSN 688 Class Submarines.
CSRR redesignated from Aquisition Category (ACAT) III to ACAT II per Assistant Secretary of Navy for Research, Development, and Acquisition (ASN (RD&A)) memorandum dated 19 April 2005.
CSRR transforms SSN 688, SSBN 726 and SSN 21 Class radio room from suites of class-specific, closed system equipment to a common design which incorporates Open System Architecture (OSA) communications equipment. CSRR will: leverage off VIRGINIA Class Exterior Communication System (ECS) design, use VIRGINIA Class ECS control and management software, apply a systems approach to design and implementation of Joint Maritime Communication System (JMCOMS), and maximize use of COTS products and emerging technologies.
Program Milestones: FY 2005 CSRR 3Q-MS-C
T&E Milestones: FY 2007 SSBN CSRR 1Q Technical Evaluation (TECHEVAL), FY 2007 SSBN CSRR 2Q Operational Evaluation (OPEVAL)

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5** | PROGRAM ELEMENT: 0604503N SSN 688 & TRIDENT MODERNIZATION | PROJECT NUMBER AND NAME: 1411 Submarine Tactical Communications System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Hardware Development*	CPFF	SSC-SD/NUWC Newport, RI	2.776								Continuing	Continuing
Hardware Development**	CPFF	SSCs/NUWC Newport, RI	0.211							Continuing	Continuing	Continuing
MCS Development	Various	Motorola, misc labs	10.214		Various							
H/W Development Facilities	Various	NUWC Newport, RI										
Software Development	CPFFWX	SSC-SD San Diego, CA	2.068					0.140	TBD	Continuing	Continuing	
Software Development	WX	NUWC Newport, RI	5.498					2.909	TBD	Continuing	Continuing	Continuing
MRTS Development	CFCC	NAVAIR, Orlando		0.000	TBD	2.238					2.238	2.238
Systems Engineering	Various	Misc Labs	11.448	0.315		3.164		4.789			19.716	Continuing
Systems Eng/Design 688 Class	Various	Misc Labs		0.000		4.674		5.146				
Site Platform Integration/Certification	Various	NUWC Newport, RI	4.794	4.634		0.748		1.853			12.029	
BCA/OPCON architecture	WX	NUWC Newport, RI	0.856	0.819		0.858		0.819			3.352	
Subtotal Product Development			37.865	5.768		11.682		15.656		Continuing	Continuing	Continuing

Remarks:
* SCSS Development for SSN 688 Class submarines
**CSRR Development for OHIO Class submarines

Development Support												
Software Development (CSRR)	CPAF	Lockheed Martin Tech Sys	8.793								8.793	8.793
Integrated Logistics Support (IETM)	WX	NUWC Newport, RI	0.300								0.300	0.300
Software Engineering	WX	SSC-SD San Diego, CA	0.653			0.500					0.500	0.500
Configuration Management												
INFOSEC/IA Certification	CPFF	Merdan/SSC SD	0.906	0.760							1.666	1.666
Studies & Analyses											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Support			10.652	0.760		0.500		0.000		0.000	11.912	11.912

Remarks:
*Supports the development of the Multi-Link Training Simulator replacement

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604503N SSN 688 & TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 1411 Submarine Tactical Communications System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	0.000		1.635		0.000			6.165	Continuing
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			4.530	0.000		1.635		0.000		Continuing	Continuing	Continuing
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	4.590	0.900	Various	0.750	Various	0.800	Various	Continuing	Continuing	Continuing
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			4.590	0.900		0.750		0.800		Continuing	Continuing	Continuing
Remarks:												
Total Cost			57.637	7.428		14.567		16.456		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 109

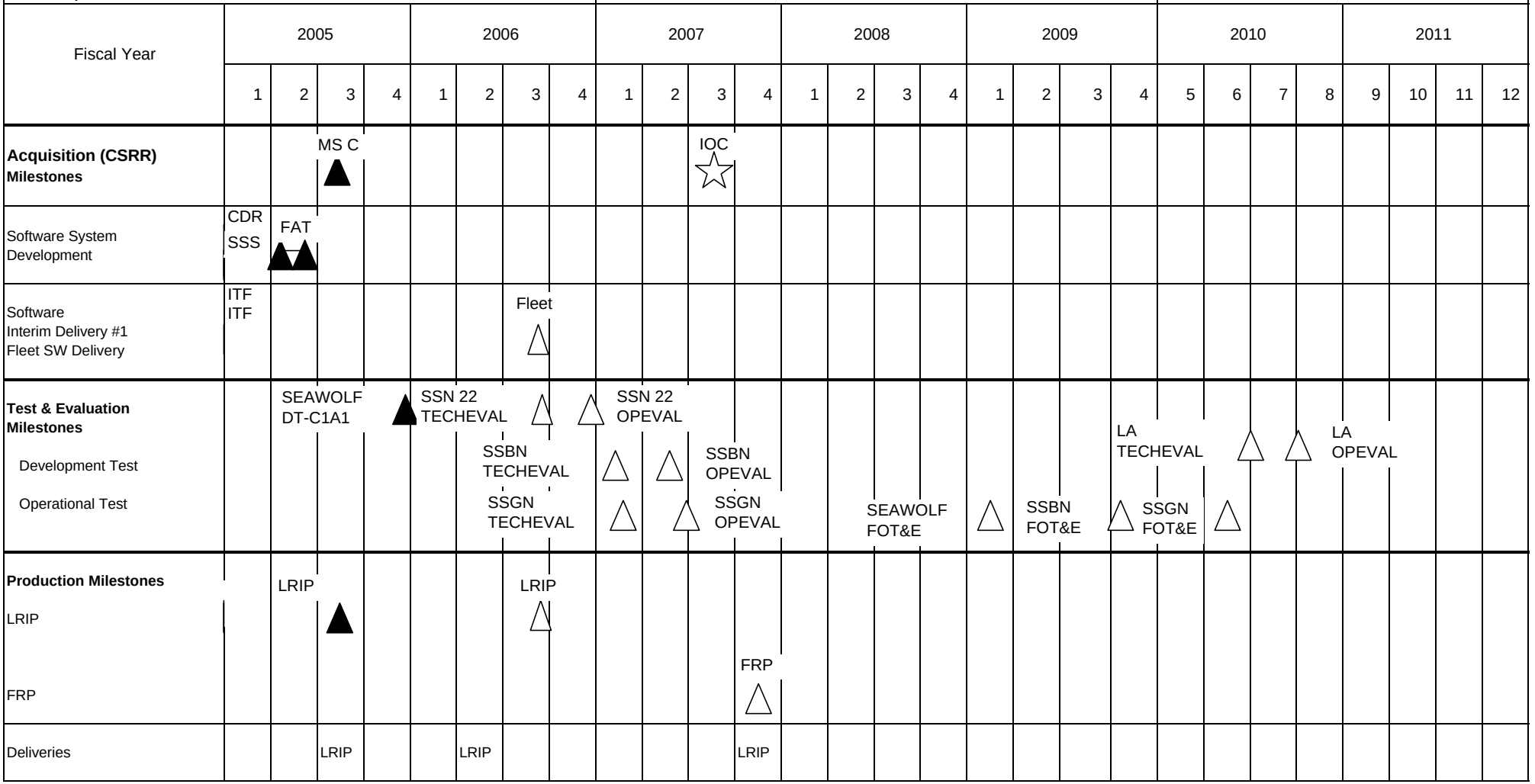
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA5**

PROGRAM ELEMENT NUMBER AND NAME: PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION

PROJECT NUMBER AND NAME: 1411 Submarine Tactical Communications Syste



R-1 SHOPPING LIST - Item No. 109

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **January 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA5**	PROGRAM ELEMENT PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 1411 Submarine Tactical Communications System			
Schedule Profile (Comms)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C		3Q						
FRP Decision				2Q				
IOC				2Q				
Factory Acceptance Test/Software Development		2Q						
Fleet Software Delivery			3Q					
Development Test SEAWOLF			1Q					
SSN 22 TECHEVAL			3Q					
SSN 22 OPEVAL			4Q					
SSBN TECHEVAL				1Q				
SSBN OPEVAL				2Q				
SSGN TECHEVAL				1Q				
SSGN OPEVAL				2Q				
SEAWOLF FOT&E						1Q		
SSBN FOT&E						4Q		
SSGN FOT&E							2Q	
LA TECHEVAL							2Q-3Q	
LA OPEVAL							3Q-4Q	

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604503N Title: SSN 688 & Trident Modernization	1950C Common Submarine Radio Room

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost Project Cost		**0.000**	**1.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

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

The Common Submarine Radio Room (CSRR) integrates COTS and GOTS components into a single radio room configuration for all classes of submarines. CSRR will leverage the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) design. The project provides for the development of a single Land-Based Integration Test Facility that consolidates existing Land -Based Testing Facilities into one facility supporting all classes of submarines. This project funds the development of a replacement Simulation/Stimulation (SIM/STIM) suite to support testing and training requirements. The project includes system engineering efforts associated with demonstration of new technology which will allow the submarine to connect to the Global Information Gig (GiG) and participate in strike group, as well as joint operations. The new technology will ensure the submarine's continued ability to participate in Network-Centric Warfare and exploit its inherent stealth capabilities in support of the joint and combined fight to achieve total battlespace dominance.

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.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & TRIDENT MODERNIZATION	1950C Common Submarine Radio Room

(U) B. Accomplishments/Planned Program

Common Submarine Radio Room (CSRR)/		FY05	FY06	FY07
Submarine Communications Support System (SCSS)		0.000	1.000	0.000
RDT&E Articles Quantity				

FY06 Accomplishments: Develop changes to CSRR architecture to address obsolescence in the operating system, specifically the Solaris and Versa-Module-Eurocard (VME) UltraSPARC Themis processor and associated hardware as governed by the Q-70 program.

RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & TRIDENT MODERNIZATION	1950C Common Submarine Radio Room

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY2007
FY06 President's Budget	0.000	0.000	0.000
FY07 President's Budget	0.000	1.000	0.000
Total Adjustments	0.000	1.000	0.000
Summary of Adjustments			
Issue 62574 Common Submarine Radio Room	0.000	1.000	0.000
Subtotal	0.000	1.000	0.000

(U) Schedule:

Contract Award 4Q FY06.
Software Delivery 3Q FY07.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604503N SSN 688 & TRIDENT MODERNIZATION	1950C Common Submarine Radio Room

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	To Complete	Total Cost
3130000 Submarine Communications	31.991	38.967	45.039	49.327	57.536	80.262	109.629	Continue	Continue

Related RDT&E:
PE 0602232N Space and Electronic Warfare (SEW) Technology
PE 0204163N Fleet Communications

(U) E. ACQUISITION STRATEGY: *

CSRR redesignated from ACAT III to ACAT II per ASN (RD&A) memorandum dated 19 April 2005. CSRR transforms SSN 688, SSBN 726 and SSN 21 Class radio room from suites of class-specific, closed system equipment to a common design that incorporates OSA communications equipment. 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.
Program Milestones:
T&E Milestones:

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	PE 0604503N Title: SSN 688 & Trident Modernization				9842N Submarine Launched Expendable Communications			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost Project Cost			**1.800**					
RDT&E Articles Qty								

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

The Navy is currently investing in new technologies to provide communications to submarines operating at speed and depth. Submarine Communications at Speed and Depth (CSD) extends the principles of FORCEnet below the ocean surface to provide the submarine force with two-way networked connectivity when operating submerged, and within operationally acceptable timelines. The goal of CSD is to increase the effectiveness of submarines in support of Navy, Joint, and Coalition warfighters by enabling two-way communications and Network Centric Warfare while preserving their unique stealth posture. This increased capability is expected to provide improved connectivity to submarines during missions such as coordinated Anti-Submarine Warfare (ASW), supporting Special Operations Forces, coordinated Strike, and Intelligence, Surveillance & Reconnaissance (ISR) collections.

The Mission Reconfigurable Expendable Buoy System (MREBS) will enable a two-way global satellite communications capability when the submarine is operating over a broad speed/depth envelope. This has been identified by Chief of Naval Operations (CNO) N77 (Undersea Warfare) as a high priority capability, and this technical concept was recommended for acquisition by the CSD Analysis of Alternatives (AoA) performed in 2005. In addition, MREBS could be the basis for future evolutionary acquisition in the CSD program, since it enables the integration of other communications payloads and sensors utilizing a reconfigurable package rather than requiring a complete redesign for each future capability.

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.

R-1 SHOPPING LIST - Item No. 109 #REF!

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **Februarey 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	9842N Submarine Launched Expendable Communications

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Advanced HDR/SubHDR P-3I			1.800	
RDT&E Articles Quantity				

FY06: Develop a Mission Reconfigurable Expendable Buoy System (MRBS) to accommodate critical, below periscope depth communication and sensing needs.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	9842N Submarine Launched Expendable Communications

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget		0.000	
FY07 President's Budget		1.800	
Total Adjustments	0.000	1.800	0.000
Summary of Adjustments * Include Issue No. & Cong. Language Sec. if applicable			
Issue 62776 Submarine Launched Expendable Communications		1.800	
Subtotal	0.000	1.800	0.000

(U) Schedule:

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604503N SSN 688 & Trident Modernization	9842N Submarine Launched Expendable Communications

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
3130 Submarine Communications	0.000	0.000	0.000	0.000	3.492	16.074	12.011	Continue	Continue

Related RDT&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.

(U) E. ACQUISITION STRATEGY: *

Program Milestones:
T&E Milestones:
Contract Milestones:

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604503N Title: SSN 688 & Trident Modernization	9843N Submarine-Enabling Airborne Data Exchange (SEADEEP)

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	Project Cost		**2.000**					
RDT&E Articles Qty								

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

Provide Navy RDT&E funding to build an adaptive communication signal processor for the Submarine-Enabling Airborne Data Exchange (SEADEEP) at-sea demonstration. Because submarine communication depth and data rate for SEADEEP are limited by both the environment and time of day, coding and communications signal processing which can dynamically adapt to the propagation channel conditions can provide significant performance improvement and enhance operational utility. This program will develop an advanced communications signal processor that will employ concatenated coding to maximize link performance without adding additional laser power or increasing receiver aperture. In addition, this processor will optimize available average laser power and laser pulse repetition characteristics to maximize performance in adverse conditions. Advanced coding and decoding techniques will improve the detection of unequal energy laser pulses without any additional parity bits or symbols. This is especially important for the dynamic SEADEEP optical communications link to maintain optimum link parameters under the fast changing propagation channel conditions. The impact of this communications signal processing approach is to provide improved communications link performance, which also can be used to lower overall system cost through design simplification. This SEADEEP adaptive communications processor would be integrated into the SEADEEP ONR technology deliverables (airborne and submarine transceivers) for use during the at-sea demonstration (FY08-09).

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.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604503N SSN 688 & Trident Modernization	9843N Submarine-Enabling Airborne Data Exchange (SEADEEP)

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
SEADEEP			2.000	
RDT&E Articles Quantity				

FY06: Develop the communications signal processor electronics and software (source code) and related documentation.

R-1 SHOPPING LIST - Item No. 109

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604504N AIR CONTROL ENGINEERING			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	**14.473**	**11.499**	**4.603**	**4.975**	**6.651**	**6.768**	**6.914**	
0718 MARINE AIR TRAFFIC CONTROL AND LANDING SYSTEMS (MATCALS)	**1.795**	**4.593**	**0.642**	**0.662**	**0.668**	**0.684**	**0.704**	
0993 SHIPBOARD AIR TRAFFIC CONTROL SYSTEMS	**8.940**	**5.026**	**3.552**	**3.897**	**5.561**	**5.651**	**5.770**	
1657 SHORE AIR TRAFFIC CONTROL (ATC) SYSTEMS	**0.323**	**0.380**	**0.409**	**0.416**	**0.422**	**0.433**	**0.440**	
9564 TRANSPORTABLE TRANSPONDER LANDING SYSTEMS (TTLS)	**3.415**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
9999 Congressional Add		**1.500**						

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.

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING				PROJECT NUMBER AND NAME 0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.795**	**4.593**	**0.642**	**0.662**	**0.668**	**0.684**	**0.704**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operation and improved flight safety of Air Traffic Control and Landing Systems at Marine Corps expeditionary airfields. Current program includes approved transition to 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 Command and Control (C2) Subsystem. Efforts will commence for requirements definition, development and engineering for the ASPARCS Preplanned Product Improvements (P3I), in accordance with Marine Corps Requirements Oversight Council (MROC) Decision Memorandum 11-2005 dated 8 Dec 2004. P3I includes the design and development of software code to interface Tactical Digital Information Link (TADIL-J) input/output to existing software, incorporating National Imagery Mapping Agency (NIMA) functionality, enhanced simulation and training and providing increased operator workstations.

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)

B. Accomplishments/Planned Program

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	1.713	0.350	0.000	
RDT&E Articles Quantity				

Perform systems engineering functions in support of the ASPARCS program. This effort includes coordination and planning with US Army and contractor for ASPARCS P3I, technical oversight of the ASPARCS program and ILS planning and implementation for ASPARCS.

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.642	
RDT&E Articles Quantity				

Improve maintenance concept and reduce life cycle costs associated with field level repairs for ASPARCS. Investigate and resolve obsolescence issues.

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	0.082	4.243	0.000	
RDT&E Articles Quantity				

Perform studies and analysis to implement P3I and other evolutionary improvements. Develop criteria to integrate Tactical Digital Information Link (TADIL-J) input/output to existing ASPARCS software. Develop criteria for existing ASPARCS software to achieve Defense Information Infrastructure-Common Operating Environment (DII-COE) level 5 compliance, National Imagery Mapping Agency (NIMA) functionality, and enhanced simulation and training into the existing ASPARCS software. Perform studies and analysis to Integrate the Multi Function Information Distribution System (MIDS) data link terminal into the ASPARCS system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	4.637	4.663	0.704
Current BES/President's Budget	1.795	4.593	0.642
Total Adjustments	-2.842	-0.070	-0.062
Summary of Adjustments			
General Provisions	-0.082	-0.070	
Miscellaneous Adjustments	-2.760		-0.062
Subtotal	-2.842	-0.070	-0.062

Schedule:

Schedule and technical issues with the precision approach radar (PAR) and air surveillance radar (ASR) and integration with the operation subsystem/communication subsystem resulted in a no-cost close out to the Lockheed Martin contract in November 2004. The program obtained an acquisition decision for an existing Army PAR, ASR and C2 node 18 Jan 2005 for Initial Operational Capability (IOC) in FY2006 to fulfill the ASPARCS requirement. However, IOC is expected to occur no earlier than Feb 07 due to the time required to complete the validation of the system technical documentation, complete the training package and the Maintenance and Material Management (3M) system. These efforts are being driven by the Marine Corps unique requirements. This program has joined with the US Army for pre-planned product improvements (P3I). This program will coordinate with the US Army to analyze and resolve obsolescence issues.

Technical:

Technical issues included that the single Key Performance Parameter, Transportability, was not met by the system. Neither the ASR shelter, PAR Pallet nor the ASR Antenna Trailer complied with the weight carrying capacity of the High Mobility Multi-Purpose Wheeled Vehicle. Additionally, government tests during DT produced numerous Priority 1 thru Priority 5 Discrepancy Reports (DRs) against the Air Surveillance Radar and Precision Approach Radar software. Specifically, 14 software only DRs and 25 hardware/software DRs were logged.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
* 56 - OPN BLI 281500, MATCALS	15.928	19.326	20.261	19.981	17.492	17.912	18.344	Continuing	Continuing

* OPN BLI 281500, MATCALS is not limited to ASPARCS.

E. ACQUISITION STRATEGY:

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. Schedule delays and technical issues with the precision approach radar (PAR) and air surveillance radar (ASR) and integration with the operation subsystem/communication subsystem resulted in a no-cost close out to the Lockheed Martin contract in November 2004. An Acquisition Decision Memorandum was signed 18 Jan 2005 approving the procurement of the Army AN/TPN-31 System to fulfill the ASPARCS requirement for FY06. The Marine Corps Requirements Oversight Council (MROC) Decision Memorandum 11-2005 of 8 Dec 2004 outlined the evolutionary improvements envisioned by HQMC. This program has joined with the Army to implement pre-planned product improvements (P3I) and evolutionary product improvements.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604504N, AIR CONTROL				PROJECT NUMBER AND NAME 0718, MARINE AIR TRAFFIC (MATCALS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 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
Training Development	WX	NAWCAD S.I.	0.175								0.175	
Systems Engineering	WX	NAWCAD S.I.	5.131					`			5.131	
Ancillary Hardware Development	SS/FFP	Rockwell Collins	0.424								0.424	.424
Primary Hardware Devel TTLS	FFP	ANPC	2.000								2.000	2.000
GFE	WX	NCCOSC		0.175	04/05						0.175	
P3I	SS/FFP	Raytheon		1.620	04/05	4.593	01/06				6.213	6.213
Subtotal Product Development			21.536	1.795		4.593					27.924	
Remarks: The program has joined with the U.S Army for pre-planned product improvement, therefore all funding will be placed on contract with the Army.												
Integrated Logistics Support	SS/FFP	Raytheon	0.336								0.336	0.336
Configuration Management	WX	NAWCAD S.I.	0.284								0.284	
Technical Data	WX	NAWCAD S.I.	0.479								0.479	
Development Support MATCALS	WX	NAWCAD S.I.	0.205								0.205	
Studies and Analysis	SS/FFP	Raytheon						0.642	01/07		0.642	0.642
Subtotal Support			1.304					0.642			1.946	
Remarks:												
Developmental Test & Evaluation	WX	NAWCAD S.I.	7.261								7.261	
Operational Test & Evaluation	WX	MCOTEA	1.072								1.072	
Subtotal T&E			8.333								8.333	
Remarks:												
Program Management Support	WX	NAWCAD S.I.	0.467								0.467	
Travel	TO	NAVAIR HQ, PATUXENT RIVER, MD	0.081								0.081	
SUBTOTAL MANAGEMENT			0.548								0.548	
Remarks:												
Total Cost			31.721	1.795		4.593		.642			38.751	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604504N AIR CONTROL ENGINEERING

PROJECT NUMBER AND NAME: 0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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																												
ASPARCS System		ADM ▲								IOC △																		
Pre-Planned Improvements Obsolescence Studies		Requirements Definition		■ Development																								
														Studies & Analysis														
Test & Evaluation Milestones																												
Development Test																												
Operational Test																												
Production Milestones																												
ADM FY 05 (2)			▲																									
Production Option FY 06 (2)						△																						
Follow on Production FY 07 (2)										△																		
Follow on Production FY 08 (2)														△														
Follow on Production FY 09 (2)																		△										
Follow on Production FY 10 (2)																						△						
Follow on Production FY 11 (2)																										△		
Deliveries								2			2				2				2				2				2	

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

Exhibit R-4a, Schedule Detail

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCALS)

Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Developmental Testing (DT-IIB) Phase I								
Acquisition Decision Memorandum		2Q						
IOC				2Q				
Requirements Definition P3I		3Q-4Q						
P3I Development		3Q-4Q	1Q-4Q					
Studies and Analysis				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING				PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**8.940**	**5.026**	**3.552**	**3.897**	**5.561**	**5.651**	**5.770**
RDT&E Articles Qty		**4**		**1**				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Air Traffic Control Central systems, interfacing with versions of the AN/TPX-42(V) Direct Altitude and Identity Readout system (DAIR) allow Shipboard Air Traffic Controllers to identify, marshal, and direct aircraft within a 50 Nautical Mile (NM) radius of the ship. At closer range (8NM) 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-41 ILM and AN/SPN-46 ACLS provide verification of aircraft approach glideslope position and precise aircraft automatic control respectively during its final approach and landing sequence to an aircraft carrier. 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. Dual efforts are underway to improve the AN/SPN-46 system availability and supportability until at least 2020. These efforts include various Engineering Change Proposals (ECP's), and the Life Cycle Extension (LCE) program transitional changes include a re-architecture of its radar control group process with COTS technology, replacement of the computer group processing hardware, and conversion of system program software from CMS-2 to the more commonly used 'C' programming language. 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 underwent several phased upgrades that have resulted 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 more commonly used and flexible 'C' language, and integrating a flat panel monitor into the AN/UYQ-70 console. The development of an Air Traffic Control common console will reduce operational costs, improve reliability, and provide compatible interfaces and commonality for all ATC workstations.

Test Article Descriptions:

For AN/SPN-46 Radar Control Group, three test articles are required to perform concurrent testing in FY 2005. The test article can best be described as a direct replacement of the Radar Control Group equipment rack, employing a set of Versa Module Eurocards to improve the performance of antenna control, antenna position reporting and radar timing control functions.

For AN/SPN-46 Computer Group, a test article is required to perform a series of tests in FY 2008. This test article will replace two existing computer racks with a single rack utilizing a set of state-of-the-art Versa Module Eurocard processors and software rewritten in a high order program language ("C").

For AN/TPX-42 Air Traffic Control Common Console, a test article is required to perform operational assessment in FY 2006. The test article can be described primarily in terms of its functionality. It will combine the existing AN/TPX-42 console's hardware with the functionality to display targets processed by AN/TPX-42, AN/SPN-46 and the Joint Precision Approach and Landing System.

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0993 Shipboard Air Traffic Control Systems

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
AN/SPN-46 Radar Control Group	6.736	1.517	0.000	
RDT&E Articles Quantity	3			

Conduct critical design review, complete system development, build test articles and conduct environmental testing, conduct configuration audits, conduct a test readiness review and operational assessment, and obtain Full Rate Production decision. Three test articles required to perform concurrent testing. These test articles can best be described as a direct replacement of the Radar Control Group equipment rack, employing a set of Versa Module Eurocards to improve the performance of antenna control, antenna position reporting and radar timing control functions.

	FY 05	FY 06	FY 07	
AN/SPN-46 Computer Group Replacement	0.797	1.699	3.552	
RDT&E Articles Quantity			1	

This subproject replaces the AN/AYK-14 processor and converts software from CMS to "C" language. Conduct a software requirements review and develop a specification. Develop software and hardware, build a test article, and integrate and test it in a lab environment. Conduct a test readiness review, developmental test and operational test.
The test article is required to perform a series of tests in FY 2008. This test article will replace two existing computer racks with a single rack utilizing a set of state-of-the-art Versa Module Eurocard processors and software rewritten in a high order program language ("C").

	FY 05	FY 06	FY 07	
AN/TPX-42 Improvements	1.407	1.810	0.000	
RDT&E Articles Quantity	1			

Complete development and test of AN/TPX-42 Track Processor Upgrade and complementary software conversion (CMS to 'C'), with the resulting design applied to production of the AN/TPX-42A(V)14 'A' Kits and 'C' Kits. Develop an ATC Common Console, using the console from AN/TPX-42A(V)14 with Field Change 2 as the core technology. Conduct requirements and design reviews, and conduct an Operational Assessment. Following successful Full Rate Production approval, the design change will be introduced into the production of 'A' Kits and 'C' Kits. It is anticipated that this technology insertion will result in a formal nomenclature change for the AN/TPX-42 system, so the identification of the modification kits will change to 'F' and 'G' Kits, respectively.
Test article required to perform operational assessment in FY 2006. The test article can be described primarily in terms of its functionality. It combines the existing AN/TPX-42 console's hardware with the functionality to display targets processed by AN/TPX-42, AN/SPN-46 and the Joint Precision Approach and Landing System.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N BA-5	0604504N AIR CONTROL ENGINEERING	0993 Shipboard Air Traffic Control Systems

C. PROGRAM CHANGE SUMMARY:

Funding:	FY2005	FY2006	FY2007
Previous President's Budget	7.998	5.102	3.834
Current BES/President's Budget	8.940	5.026	3.552
Total Adjustments	0.942	-0.076	-0.282
Summary of Adjustments			
Other general provisions		-0.076	
Congressional Undistributed Reductions	-0.121		
Congressional Increases	0.002		
Other misc. changes			-0.282
BTR	1.061		
	0.942	-0.076	-0.282

Schedule:

Schedule change reflects a restructure of the System Development for the AN/TPX-42 to support Milestone A and Milestone B.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	E0993 Shipboard Air Traffic Control Systems

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
58 - OPN BLI 283200 Automatic Carrier Landing Systems	11.280	17.159	18.005	18.599	19.081	19.455	19.935	Continuing	Continuing
57 - OPN BLI 283100 Shipboard Air Traffic Control	7.119	7.210	7.476	7.710	7.934	8.029	9.292	Continuing	Continuing

E. ACQUISITION STRATEGY:

AN/SPN-46 Radar Control Group redesign and AN/SPN-46 Computer Group replacement subprojects are part of the AN/SPN-46 Life Cycle Extension (LCE) project, which is anticipated to be designated ACAT IV. Initial contract was awarded in FY 2004 for the Radar Control Group, and is expected to be awarded in FY 2006 for the Computer Group.

AN/TPX-42 Common Console is an anticipated ACAT IV program, with improvements being incorporated into the production of AN/TPX-42 upgrade kits.

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.

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604504N AIR CONTROL ENGINEERING				PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W Dev - SPN-46	WX	NAWCAD, Pax River, MD	10.524	0.714	11/04			0.310	11/06	Continuing	Continuing	
Primary H/W Dev - SPN-46	SS/CR	SNC, Sierra, NV		5.586	12/04	0.500	12/05	0.270	12/06		6.356	6.356
Primary H/W Dev - TPX-42	WX	NAWCAD, Pax River, MD	2.035	0.588	11/04						2.623	
											0.000	
Subtotal Product Development			12.559	6.888		0.500		0.580		Continuing	Continuing	
Remarks:												
Software Development - SPN-46	WX	NAWCAD, Pax River, MD	0.255	0.225	11/04	0.293	11/05	0.332	11/06	Continuing	Continuing	
Software Development - SPN-46	C/CPFF	TBD		0.594	01/05	2.740	12/05	2.582	12/06		5.916	5.916
Software Development - TPX-42	WX	NAWCAD, Pax River, MD	2.265	0.664	11/04						2.929	
Integrated Log Spt - TPX-42	WX	NAWCAD, Pax River, MD	0.362	0.270	11/04						0.632	
Studies & Analysis - SPN-46	WX	NAWCAD, Pax River, MD	0.030	0.243	11/04						0.273	
Subtotal Support			2.912	1.996		3.033		2.914		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604504N AIR CONTROL ENGINEERING			PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval - SPN-46	WX	NAWCAD, Pax River, MD				0.626	11/05				0.626	
Developmental Test & Eval - TPX-42	WX	NAWCAD, Pax River, MD				0.748	11/05				0.748	
Operational Test & Eval - TPX-42	WX	OPTEVFOR, Norfolk, VA				0.062	11/05				0.062	
											0.000	
											0.000	
Subtotal T&E			0.000			1.436					1.436	
Remarks:												
Logistics Management Support	C/CR	NTA, Patuxent River, MD	1.213	0.041	11/04	0.042	12/05	0.043	12/06	Continuing	Continuing	
Travel	TO	NAVAIRHQ, Pax River, MD	0.030	0.015	11/04	0.015	11/05	0.015	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.243	0.056		0.057		0.058		Continuing	Continuing	
Remarks:												
Total Cost			16.714	8.940		5.026		3.552		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 110

EXHIBIT R4, Schedule Profile
AN/TPX-42 Air Traffic Control Common Console

DATE:
February 2006

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N / BA-5

PROGRAM ELEMENT NUMBER AND NAME
0604504N AIR CONTROL ENGINEERING

PROJECT NUMBER AND NAME
0993 Shipboard Air Traffic Control Systems

Fiscal Year	2005				2006				2007				2008				2009				2010				2011				2010			
	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
Prototype Phase																																
System Requirements Review																																
Preliminary Design Review		PDR ▲																														
System Development	■	■	■	■	■	■																										
Critical Design Review		CDR ▲																														
Quality Design and Build		■																														
Test Article (EDM) Delivery (Qty 1)						1 ▲																										
Test Readiness Review							TRR △																									
Test & Evaluation Milestones Operational Assessment								□																								
Production Milestones Full Rate Production Decision									△																							
First Lot Deliveries												3 △																				

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **AN/TPX42 Air Traffic Control Common Console**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**	PROGRAM ELEMENT 0604504N Air Control Engineering				PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase								
System Requirements Review (SRR)								
Preliminary Design Review (PDR)		2Q						
System Development		1Q-4Q	1Q-4Q					
Critical Design Review (CDR)		2Q						
Quality Design and Build		2Q						
Test Article (EDM) Delivery			2Q					
Test Readiness Review (TRR)			4Q					
Operational Assessment			4Q					
Full Rate Production Decision				1Q				
Full Rate Production (First Lot) Deliveries				4Q				

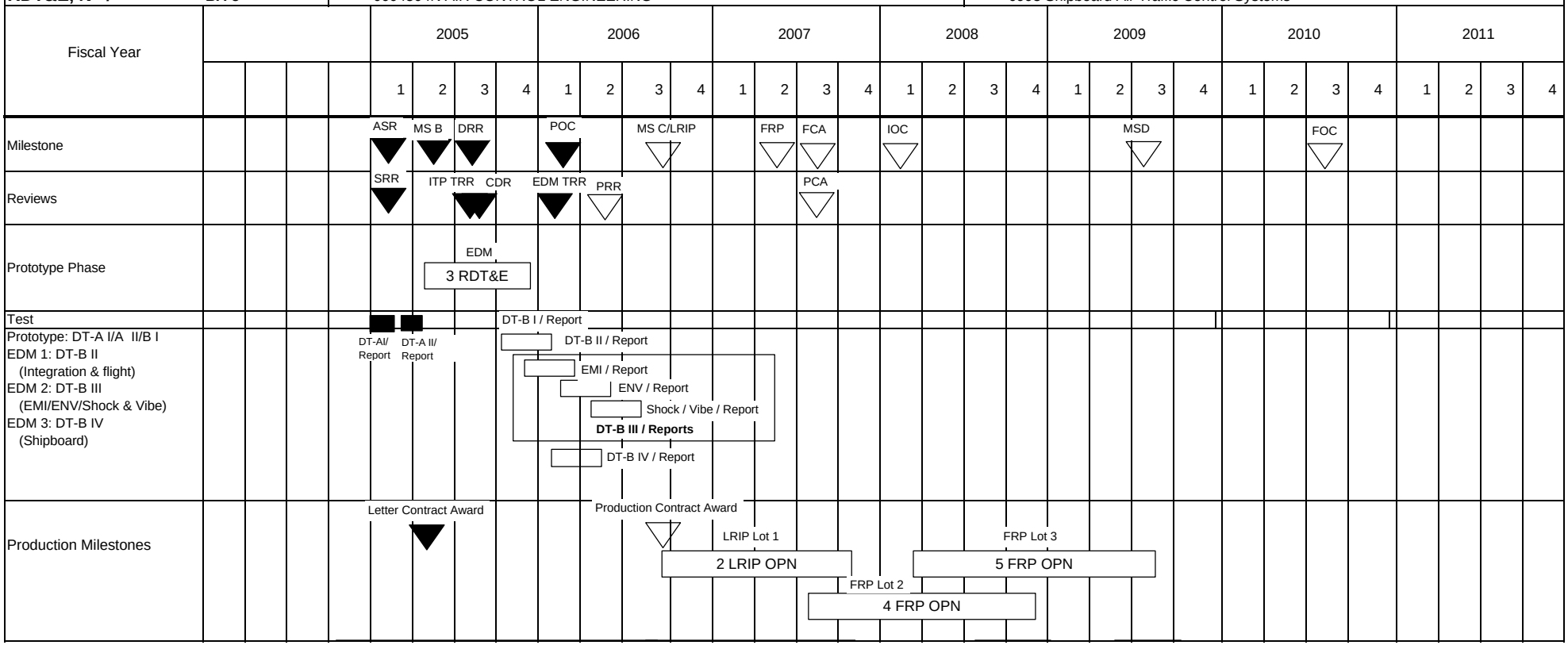
R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
AN/SPN-46 Radar Control Group

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0993 Shipboard Air Traffic Control Systems



R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

UNCLASSIFIED

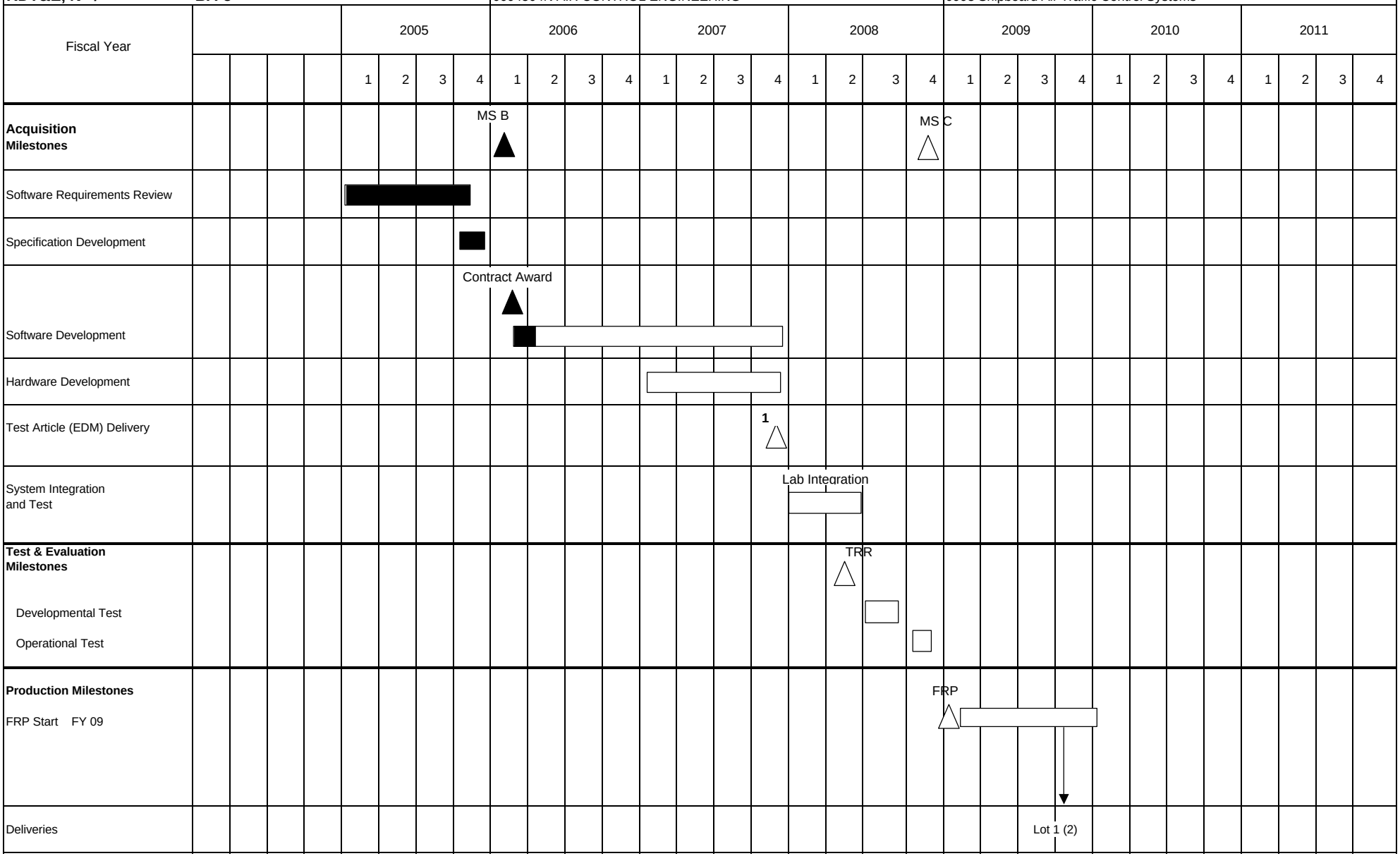
Exhibit R-4a, Schedule Detail **AN/SPN-46 RADAR CONTROL GROUP**						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604504N Air Control				PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Reviews:								
System Requirements Review (SRR)		1Q						
Integrated Test Plan Technical Readiness Review (ITP TRR)		3Q						
Configuation Design Review (CDR)		3Q						
Engineering Demonstration Model (EDM TRR)			1Q					
Production Readiness Review (PRR)			2Q					
Physical Configuration Audit (PCA)				3Q				
Test Events								
DT-A I, DT-A II, DT B-1 Testing		1Q-4Q						
DT-B II		4Q	1Q					
DT-B III		4Q	1Q-3Q					
DT-B IV			1Q-2Q					
Radar Control Group Redesign Development								
Milestones:								
1. Acquisition Strategy Review (ASR)		1Q						
2. Milestone Decision B		2Q						
3. Demonstation Readiness Review (DRR)		3Q						
4. Preliminary Operational Capibility (POC)			1Q					
5. Milestone Decision C			3Q					
6. Full Rate Production (FRP)				2Q				
7. Functional Configuration Audit (FCA)				3Q				
8. Initial Operational Capibility (IOC)					1Q			
9. Material Support Date (MSD)						3Q		
10. Full Operational Capibility (FOC)							3Q	
Production Milestones								
1. Letter Contract Award		2Q						
2. Production Contract Award			3Q					
3. Low Rate Initial Production Lot 1			3Q-4Q	1Q-4Q				
4. Full Rate Production Lot 2				3Q-4Q	1Q-4Q			
5. Full Rate Production Lot 3					1Q-4Q	1Q-3Q		
Deliveries:								
Prototype								
EDM 1, EDM 2, and EDM 3		4Q						

R-1 SHOPPING LIST - Item No. 110

EXHIBIT R4, Schedule Profile
AN/SPN-46 COMPUTER GROUP

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	0993 Shipboard Air Traffic Control Systems



CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail **AN/SPN-46 COMPUTER GROUP**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604504N Air Control				PROJECT NUMBER AND NAME 0993 Shipboard Air Traffic Control Systems			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software Requirements Review		1-4Q						
Specification Development		4Q						
Milestone B			1Q					
Software Development Contract Award			1Q					
Software Development			1-4Q	1-4Q				
Hardware Development				1-4Q				
Test Article (EDM) Delivery				4Q				
Lab Integration and Test					1-2Q			
Test Readiness Review					2Q			
Developmental Test					3Q			
Operational Test					4Q			
Milestone C					4Q			
Full Rate Production Decision						1Q		
Full Rate Production Deliveries (First Lot)						4Q		

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING				PROJECT NUMBER AND NAME 1657 Shore Air Traffic Control Systems			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.323**	**0.380**	**0.409**	**0.416**	**0.422**	**0.433**	**0.440**
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 Facilites (FACSFAC). 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). The Navy must maintain compatibility with FAA developed ATC systems in order to ensure seamless interoperability within the NAS. NAS modernization initiatives include the Visual Information Display System (VIDS) and follow-on Pre-planned Product Improvements, with additional RDT&E efforts required for modified commerical-off-the-shelf (COTS) ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & FACSFAC facilities worldwide. Landing Systems initiatives include re-engineering and technology insertion efforts for the Precision Approach Radar (PAR), Tactical Air Navigation System (TACAN), and other landing systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	1657 Shore Air Traffic Control Systems

(U) B. Accomplishments/Planned Program

VIDS	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.262	0.186	0.289
RDT&E Articles Quantity			

Continue engineering development of pre-planned product improvements for the Visual Information Display System (VIDS) and initiate efforts to incorporate VIDS into the FACSFACs and display alternatives for Navy ATC Systems.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.100	0.100
RDT&E Articles Quantity			

Initiate re-engineering and technology insertion efforts for the Precision Approach Radar, the Tactical Air Navigation System and other Landing Systems.

FACSFAC	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.061	0.094	0.020
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 including but not limited to the Digital Airport Surveillance Radar into the FACSFAC FACTS 3200 system.

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	1657 Shore Air Traffic Control Systems

C. PROGRAM CHANGE SUMMARY:

Funding:	FY2005	FY2006	FY2007
Previous President's Budget:	0.329	0.386	0.439
Current BES/President's Budget:	0.323	0.380	0.409
Total Adjustments	-0.006	-0.006	-0.030
Summary of Adjustments			
Other general provisions	-0.006	-0.006	
Miscellaneous Adjustments			-0.030
Subtotal	-0.006	-0.006	-0.030

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	1657 Shore Air Traffic Control Systems

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
59 - OPN BLI 284000 National Air Space System	13.082	18.202	27.575	25.427	29.024	29.715	30.420	Continuing	Continuing
60 - OPN BLI 284500 Air Station Support Equip	3.615	3.904	3.968	4.081	4.168	4.264	4.364	Continuing	Continuing
61 - OPN BLI 284600 Landing System	7.182	7.766	9.157	9.393	10.402	10.682	10.976	Continuing	Continuing
62 - OPN BLI 284700 FACSFAC	3.683	3.562	3.758	3.875	3.995	4.113	4.240	Continuing	Continuing

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604504N AIR CONTROL ENGINEERING	9999 / CONGRESSIONAL ADDS	

B. Accomplishments/Planned Program

9564C	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	0.000	1.500	0.000	
RDT&E Articles Quantity				

Transportable Transponder Landing System (TTLS)

Provide engineering, logistical and technical services in support of evaluation of TTLS.

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 110

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05**				R-1 ITEM NOMENCLATURE 0604507N / Enhanced Modular Signal Processor (EMSP)				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**$1.061**	**$1.063**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**
1440 Enhanced Modular Signal Processor		**$1.061**	**$1.063**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The objective of this Program Element (PE) is to improve Navy Signal Processing Hardware and Software Capabilities. Efforts include the development of a Portable Digital Signal Processing Operating System (PDOS), an associated tool set that supports development of reusable signal processing application software, and, replacement of obsolete, unreliable and unsupportable AN/UYS-1/2/2A legacy host computer resources.

R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)				PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.061**	**1.063**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
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. Efforts include the development of a Portable Digital Signal Processing Operating System (PDOS), an associated tool set that supports development of reusable signal processing application software, and, replacement of obsolete, unreliable and unsupportable AN/UYS-1/2/2A legacy host computer resources.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
PDOS Development		0.250	0.250	
RDT&E Articles Quantity				

FY 05-06: Development of a Portable Digital Signal Processing Operating System, an associated tool set that supports development of reusable signal processing application software.

		FY 05	FY 06	FY 07
Legacy Host Computer Replacement of AN/UYS-1/2/2A		0.811	0.813	
RDT&E Articles Quantity				

FY05-06: Investigate and commence replacement of AN/UYS-1/2/2A legacy host computer resources which are obsolete, unreliable and unsupportable.

		FY 05	FY 06	FY 07
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No.111

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget Controls	1.063	1.079	0.000
FY 2007 President's Budget Controls	1.061	1.063	0.000
Total Adjustments	-0.002	-0.016	0.000
Summary of Adjustments:			
Other general provisions	-0.002	-0.016	
Subtotal	-0.002	-0.016	0.000

Schedule:

Not applicable.

Technical:

Not applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Complete	Total Cost
OPN BLI 2980 / Items Less Than $5M (N71 Navy Signal Processor program portion only)	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0

E. ACQUISITION STRATEGY:

Not applicable.

F. MAJOR PERFORMERS:

Naval Air Warfare Center/Patuxent River (NAWC/Patuxent River): EMSP Computer Program Support Activity (CPSA), Technical Design Agent
Naval Sea Systems Command (NAVSEA/Crane): EMSP ISEA/Hardware Support Activity

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)												DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)				PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	WX	NAWC/Pax River, MD	4.730			0.621	10/04	0.650	10/05			0.000	6.001	
Hardware Development	WX	NAVSEA/Crane, IN	0.699			0.358	10/04	0.238	10/05			0.000	1.295	
S/W, H/W Dev./Common Processing	Var.	Var.	0.070			0.054	01/05	0.150	10/05			0.000	0.274	
Common Processing	IP	ARI, CT	0.225									0.000	0.225	
Subtotal Support			5.724			1.033		1.038		0.000		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-05**
PROGRAM ELEMENT: 0604507N / Enhanced Modular Signal Processor (EMSP)
PROJECT NUMBER AND NAME: 1440 / Enhanced Modular Signal Processor

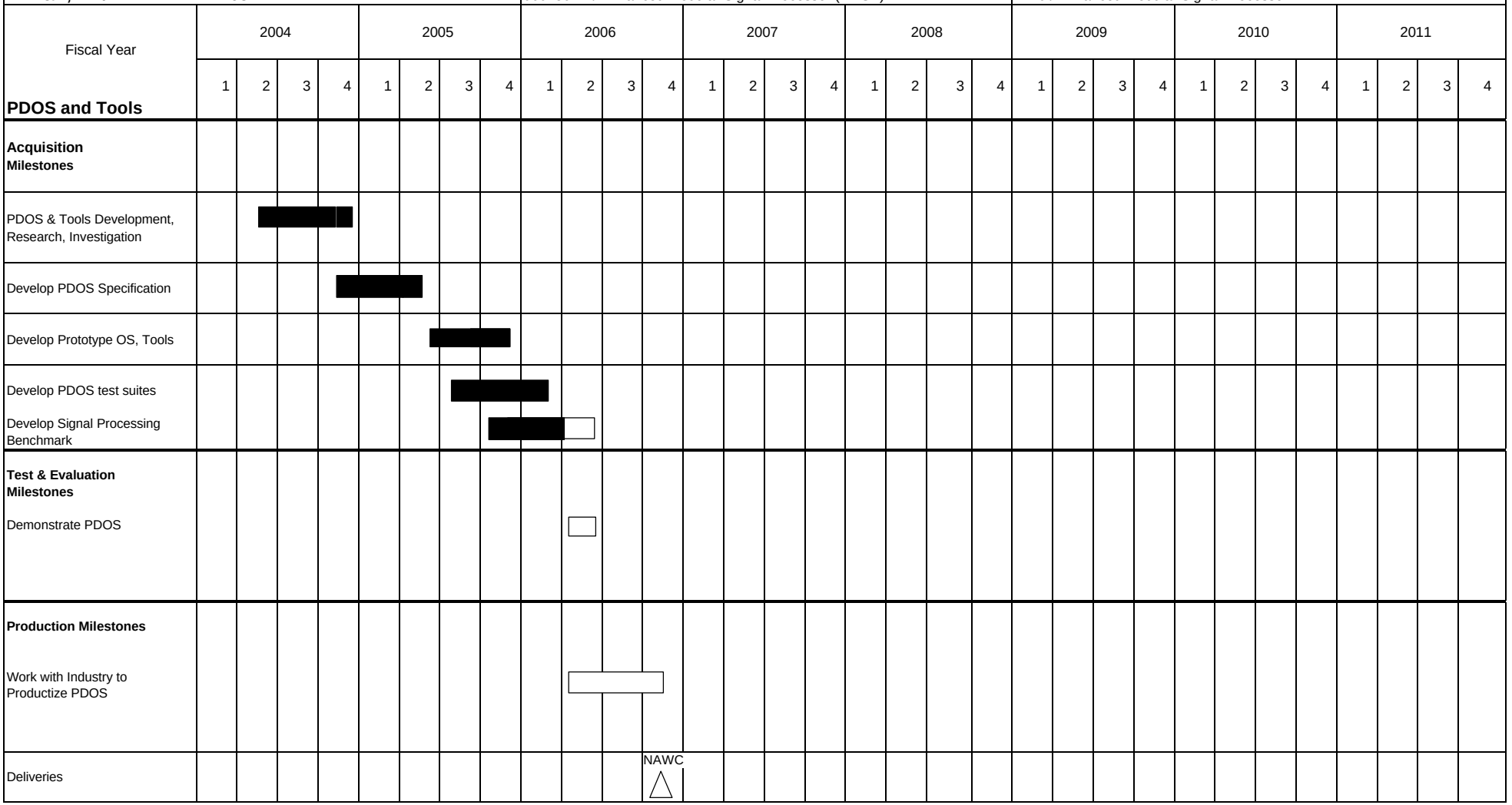
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000			0.000		0.000		0.000		0.000	0.000	
Remarks:														
Program Management Support	IP/CPFF	TWD & Associates, VA	0.383									0.000	0.383	
Program Management Support	CPAF	BAE Systems, MD				0.028	12/04	0.025	02/06			0.000	0.053	
Subtotal Management			0.383			0.028		0.025		0.000		Continuing	Continuing	
Remarks:														
Total Cost			9.322	0.000		1.061		1.063		0.000		0.000	11.446	
Remarks:														

R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor



R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **FEBRUARY 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)				PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
PDOS and Tools								
Develop PDOS Specification		1Q-2Q						
Develop Prototype OS and tools		2Q-4Q						
Develop PDOS test suites		3Q-4Q	1Q					
Develop Signal Processing benchmark		4Q	1Q-2Q					
Demonstrate PDOS			2Q					
Work with industry to productize PDOS			2Q-4Q					
Delivery to CPSA (NAWC/ Pax River)			4Q					

R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

EXHIBIT R4, Schedule Profile				DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor		

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
Legacy Host Computer Replacement	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																												
AN/UYS-2/2A Investigate Legacy Computer Replacement			■	■																								
AN/UYS-1 COTS Software Development	■	■																										
AN/UYS-2/2A COTS Software Development										□	□	□																
Test & Evaluation Milestones																												
AN/UYS-1 Validation Testing		■	■	■																								
AN/UYS-2/2A Validation Testing											□	□																
Production Milestones																												
AN/UYS-2/2A Contract for Delivery of Replacement host				■	■	□																						
Deliveries			AN/UYS-1 to CPSA (NAWC/Pax) ▲								AN/UYS-2/2A to CPSA (NAWC/Pax) △																			

R-1 SHOPPING LIST - Item No. 111

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)				PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Legacy Host Computer Replacement								
AN/UYS-1 COTS software development		1Q-2Q						
AN/UYS-1 validation testing		2Q-3Q						
AN/UYS-1 delivery to CPSA (NAWC/Pax River)		4Q						
AN/UYS-2/2A investigate legacy host computer replacement		3Q-4Q						
AN/UYS-2/2A contract for delivery of replacement host computer		4Q	1Q-2Q					
AN/UYS-2/2A COTS software development			2Q-3Q					
AN/UYS-2/2A validation testing			3Q-4Q					
AN/UYS-2/2A delivery to CPSA (NAWC/Pax River)			4Q					

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**25.512**	**37.784**	**33.392**	**21.972**	**20.130**	**19.664**	**19.935**
2232 - CV Launch & Recovery Systems		**24.552**	**32.534**	**33.392**	**21.972**	**20.130**	**19.664**	**19.935**
9565 - Synthetic Material Arresting Cable		**0.960**						
9999- Congressional Adds			**5.250**					

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 element includes the funding of Production Representative Models (PRM) for:

(1) Advanced Arresting Gear (AAG): AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability.
(2) Technology insertion efforts for the Electromagnetic Aircraft Launch System (EMALS) and the steam catapult:
a) EMALS Advanced Control Technology Insertion: Introduction of sensorless control technologies, resulting in removal of a significant number of feedback sensors in the system; improving reliability, maintainability and availability.
b) EMALS High Density Energy Storage: Introduction of solid state energy storage technology to replace the first generation rotary inertial systems. This will result in a 300 Long Ton reduction in ship system installed weight with a corresponding reduction in Height of Center of Gravity Above the Baseline, and enhanced reliability, availability and maintainability.
c) Advanced Catapult Control System for Steam Catapults: Introduce EMALS control, prognostics and health monitoring technology into the steam catapult, providing a common operator interface, reduced maintenance and enhanced availability. This effort compliments the improvements introduced into the arresting gear through AAG.

Congressional Adds:
Aircraft Carrier Aviation Modernization: This program is used to research modernization strategies for the Aircraft Launch and Recovery Equipment and Support Equipment systems aboard carriers in order to reduce the number of human operators, reduce human error, and thereby increase safety/reliability and reduce the fleet's operating costs.
Machine Vision Confirmation of Launch Bar Engaement: This program will develop a system based on machine vision technology to verify the proper hook up of aircraft to the catapult under all operating conditions.
Synthetic Material Arresting Cable Gear: This program will develop and test a new Synthetic Fiber Arresting Gear Cable to replace the current steel cable material with a lighter weight material having a higher strength to weight ratio. Conduct systems engineering tasks of requirements analysis and tracking, and specification development. Conduct design engineering and laboratory developmental testing on various novel materials and constructions. Conduct modeling and simulation, failure mode analysis, performance data analysis, and fatigue life testing. Award contract to cable manaufacturer for various synthetic cables. Conduct advanced material sheave study to optimize cable to sheave performance.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME 2232 - CV Launch & Recovery Systems				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**24.552**	**32.534**	**33.392**	**21.972**	**20.130**	**19.664**	**19.935**
RDT&E Articles Qty			**1**					

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 following systems, including the funding of production representative models (PRM) for:

(1) Advanced Arresting Gear (AAG): AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability. The test article consists of a single arresting gear wire with all associated hardware and software subsystems.

(2) Technology insertion efforts for the Electromagnetic Aircraft Launch System (EMALS) and the steam catapult:

a) EMALS Advanced Control Technology Insertion: Introduction of sensorless control technologies, resulting in removal of a significant number of feedback sensors in the system; improving reliability, maintainability and availability.

b) EMALS High Density Energy Storage: Introduction of solid state energy storage technology to replace the first generation rotary inertial systems. This will result in a 300 Long Ton reduction in ship system installed weight with a corresponding reduction in Height of Center of Gravity Above the Baseline, and enhanced reliability, availability and maintainability.

c) Advanced Catapult Control System for Steam Catapults: Introduce EMALS control, prognostics and health monitoring technology into the steam catapult, providing a common operator interface, reduced maintenance and enhanced availability. This effort compliments the improvements introduced into the arresting gear through AAG.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	2232- CV Launch & Recovery Systems

(U) B. Accomplishments/Planned Program

AAG		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		24.552	32.534	29.732
RDT&E Articles Quantity			1	

AAG

Complete Preliminary Design and Integrated Baseline Reviews. Select SDD phase contractor. Receive MS B approval and award SDD contract. Complete initial Critical Design Reviews. Purchase one AAG production representative test system to support shorebased integrated testing. Complete remaining Critical Design Reviews. Fabricate test system hardware. Initiate test site upgrades. Deliver test system to the NAVAIR Lakehurst Jet Car Test Site. Install test system. Conduct Test Readiness Review. Conduct IT-B1 and IT-B2 integrated testing, and initiate IT-B3. Conduct OTRRs affiliated with the start of IT-B2 and IT-B3 integrated testing. Provide engineering and management support to the program.

ADMACS		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	3.660
RDT&E Articles Quantity				1

ADMACS

Conduct a series of preliminary and critical design reviews for the Block 2 upgrades. Purchase one ADMACS Block 2 production representative test system to support developmental testing. The Block 2 test article will consist of network servers, switches, a router, workstations and affiliated database and communications software. Conduct a system level critical design review. Integrate and test Block 2 software and hardware. Prepare for Milestone B for Block 3 upgrades. Conduct system functional review, system requirements review and preliminary design review for Block 3.

ADMACS Block 2 was funded under Project 9071 (Congressional Add) and Project 3126 (ONR) in FY 2002-2005.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	2232 - CV Launch & Recovery Systems

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	28.340	33.029	31.490
Current BES/President's Budget	24.552	32.534	33.392
Total Adjustments	-3.788	-0.495	1.902
Summary of Adjustments			
Congressional Reductions			
Prorammatic changes			2.048
SBIR	-0.619		
Other general provisions	0.011	-0.495	
Other misc. changes	-0.385		-0.146
BTR	-2.795		
Subtotal	-3.788	-0.495	1.902

(U) Schedule:

AAG program slipped due to a one quarter delay in Milestone B approval. This resulted in a shift of most milestones and activities by one quarter to the right. Additionally, the start of System Design and Demonstration activity is now correctly aligned with Milestone B, causing Milestone C to shift two quarters to the right. RALS Modify/Refurbish/Install activity duration has been compressed about a quarter and a half, while the RALS test activity duration has been extended by one quarter.

ADMACS Blocks 2 and 3 are new starts for Project 2232. Therefore their schedules have not appeared before with this set of exhibits. Block 2 was previously funded under Program Elements 0604512N and 0203761N, project units 9071 and 3126 respectively.

(U) Technical:

Not applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	2232 - CV Launch & Recovery Systems

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN Line Item: 4216 Aircraft Launch & Recovery Equip	21.130	23.642	29.817	37.175	42.566	130.578	114.516		Continuing

E. ACQUISITION STRATEGY:

AAG: The Navy competitively awarded two Cost Plus Fixed Fee (CPFF) TD phase contracts to develop the AAG. Upon completion of the Preliminary Design and Integrated Baseline Reviews, the Navy awarded a single Cost Plus Award Fee (CPAF) option to General Atomics 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 successuful demonstration of the production representative AAG, the Navy will award Fixed Price Incentive (FPI) contracts for LRIP and full rate production quantities.

ADMACS: The Navy will develop ADMACS internally, using commercially available servers, switches, routers, workstations and database and communications software. Production systems will be procured from multiple sources, and integrated and deployed by NAWCAD, Lakehurst, NJ.

R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604512N Shipboard Aviation Systems

PROJECT NUMBER AND NAME: 2232 - CV Launch & Recovery Systems

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W Development (AAG)	C/CPFF	Northrop Grum/Sunnyvale,Ca	11.791	0.627	04/05						12.418	12.418
Primary H/W Development (AAG)	C/CPAF	Gen Atomics/San Diego,Ca		17.441	02/05	23.821	11/05	17.811	12/06	26.452	85.525	85.525
Award Fees (AAG)	C/CPAF	Gen Atomics/San Diego,Ca		2.417	08/05	2.871	11/05	2.255	12/06	2.926	10.469	10.469
Primary H/W Development (AAG)	WX	NAWCAD, Lakehurst	1.305	0.660	11/04	0.768	11/05	0.752	11/06	Continuing	Continuing	
Systems Engineering (AAG)	WX	NAWCAD, Lakehurst	0.880	1.952	11/04	2.109	11/05	2.511	11/06	Continuing	Continuing	
Shipboard Integration (AAG)	WX	NAWCAD, Lakehurst		0.200	11/04	0.433	11/05	0.438	11/06	Continuing	Continuing	
Primary H/W Development (ADMACS)	WX	NAWCAD, Lakehurst						2.300	11/06	1.540	3.840	
Shipboard Integration (ADMACS)	WX	various						1.220	11/06	0.230	1.450	
Subtotal Product Development			13.976	23.297		30.002		27.287		Continuing	Continuing	

Remarks: Award fee is 0% fixed and 12% (max.) of total contract.

Integrated Logistics Support (AAG)	WX	NAWCAD, Lakehurst		0.720	11/04	0.802	11/05	0.814	11/06		2.336	
Integrated Logistics Support (ADMACS)	WX	NAWCAD, Lakehurst								0.040	0.040	
Subtotal Support				0.720		0.802		0.814		0.040	2.376	

R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME 2232 - CV Launch & Recovery Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E (AAG)	WX	NAWCAD Lakehurst, NJ		0.239	11/04	0.147	11/05	3.831	11/06	Continuing	Continuing	
OT&E (AAG)	var.	var.	0.005	0.175	var.	0.200	11/05	0.188	11/06	Continuing	Continuing	
Facility Testing - JCTS (AAG)	WX	NAWCAD Lakehurst, NJ				1.247	11/05	1.000	04/07	Continuing	Continuing	
DT&E (ADMACS)	WX	NAWCAD Lakehurst, NJ						0.140	11/06	0.630	0.770	
Subtotal T&E			0.005	0.414		1.594		5.159		Continuing	Continuing	
Program Management Support	RX	NAWCAD Patuxent Rv, MD		0.089	05/05	0.091	11/05	0.087	11/06	Continuing	Continuing	
Travel	TO	NAVAIR Patuxent Rv, MD		0.032	var.	0.045	var.	0.045	var.	Continuing	Continuing	
Subtotal Management				0.121		0.136		0.132		Continuing	Continuing	
Remarks:												
Total Cost			13.981	24.552		32.534		33.392		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST Item No. 112

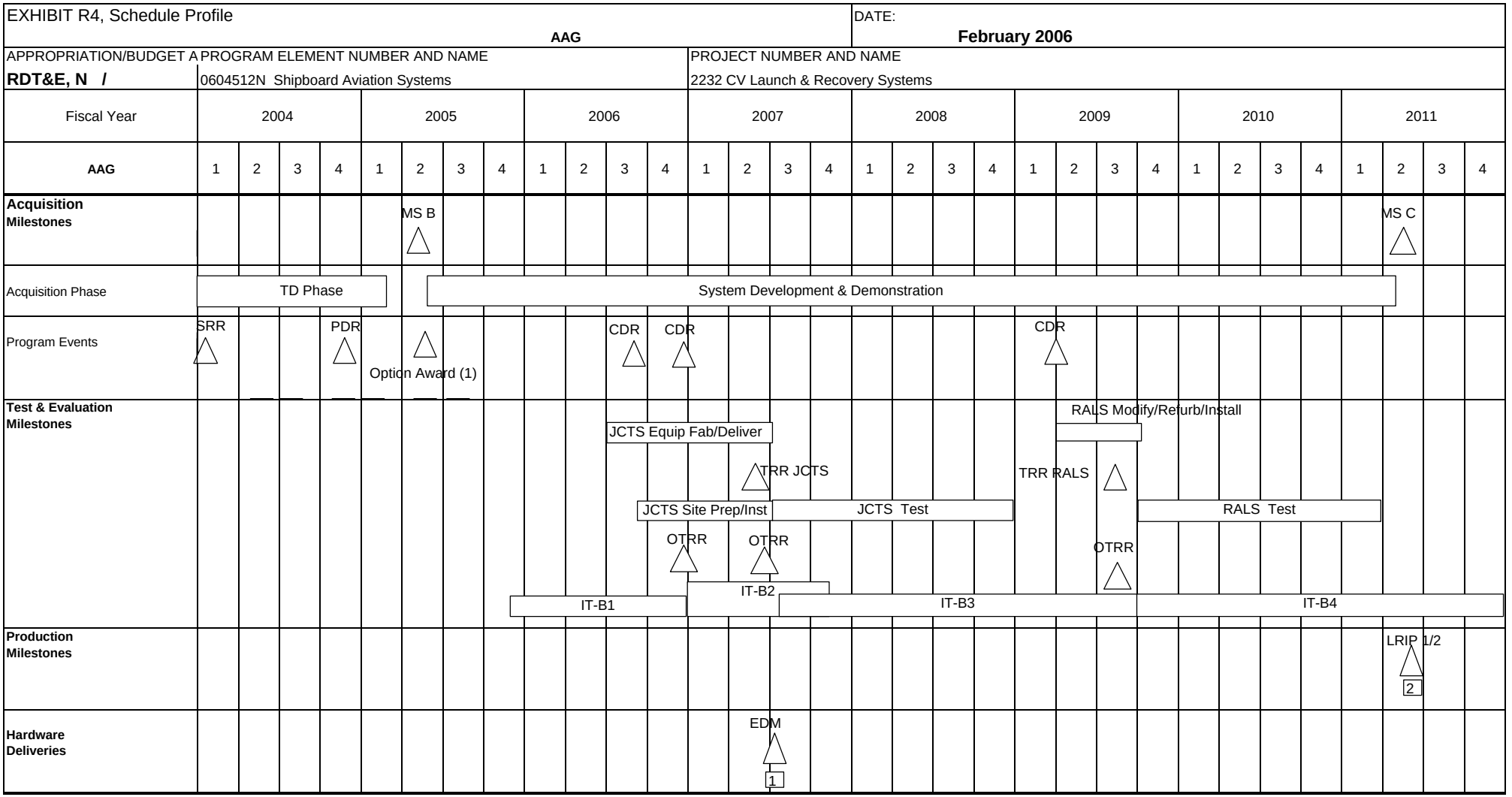
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **AAG** — DATE: **February 2006**

APPROPRIATION/BUDGET A: **RDT&E, N /**

PROGRAM ELEMENT NUMBER AND NAME: 0604512N Shipboard Aviation Systems

PROJECT NUMBER AND NAME: 2232 CV Launch & Recovery Systems



R-1 SHOPPING LIST - Item No. 112

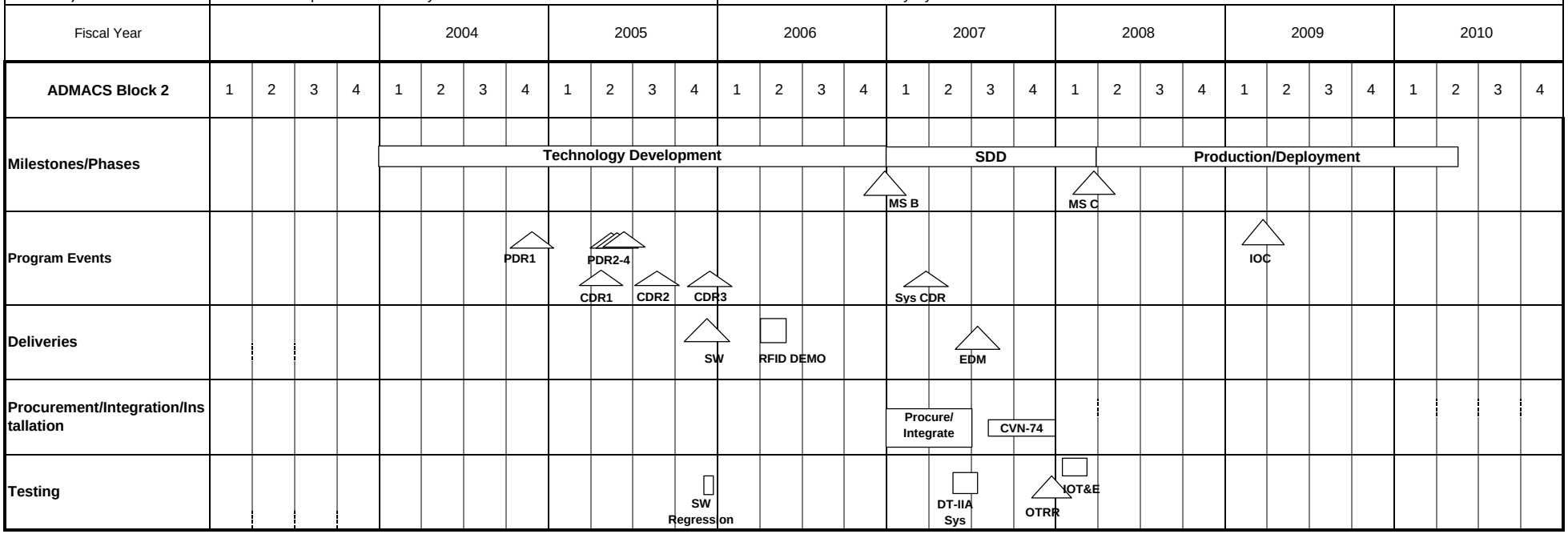
CLASSIFICATION:

Exhibit R-4a, Schedule Detail **AAG**				DATE: **February 2006**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME 2232 CV Launch & Recovery Systems					
Schedule Profile		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TD Phase									
System Requirements Review (SRR)		1Q							
Preliminary Design Review (PDR)		4Q							
SDD Phase									
MS B			2Q						
Option Award - SDD Phase			2Q						
IT-B1 Intergrated Test			4Q	1Q-4Q					
Critical Design Review (CDR) - Multiple CDRs				2Q, 4Q			1Q		
JCTS Test Article Fabrication				3Q-4Q	1Q-3Q				
JCTS Test Site Preparation & Install				3Q-4Q	1Q-3Q				
Operational Test Readiness Reviews (OTRR)				4Q	2Q		3Q		
IT-B2 Intergrated Test					1Q-3Q				
Test Readiness Review (TRR) JCTS Test					2Q				
EDM Delivery					3Q				
JCTS Test					3Q-4Q	1Q-4Q	1Q		
IT-B3 Intergrated Test					3Q-4Q	1Q-4Q	1Q-3Q		
RALS System Mods/Refurbishment/Installation							1Q-3Q		
Test Readiness Review (TRR) RALS Test							3Q		
IT-B4 Intergrated Test							4Q	1Q-4Q	1Q-4Q
RALS Test							4Q	1Q-4Q	1Q
MS C									2Q
LRIP Awards									2Q
NOTE: JCTS is the Jet Car Test Site, NAWCAD Lakehurst, NJ									
RALS is the Runway Arrested Landing Site, NAWCAD Lakehurst, NJ									

R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE:
ADMACS Block 2		**February 2006**
APPROPRIATION/BUDGET A	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	2232 CV Launch & Recovery Systems



R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **ADMACS Block 2**					DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME 2232 CV Launch & Recovery Systems					
Schedule Profile			FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
TD Phase									
Preliminary Design Review (PDR) - Multiple PDRs			4Q	2Q					
Critical Design Review (CDR) - Multiple CDRs				2Q-4Q		1Q			
Software Delivery				4Q					
Software Regression Testing				4Q					
Radio Frequency Identification Demonstration					2Q				
SDD Phase									
MS B					4Q				
Hardware (EDM) Procure/Integrate (Lab)						1Q-2Q			
Hardware (EDM) Delivery						3Q			
Hardware (EDM) Installation (CVN-74)						3Q-4Q			
DT-IIA						2Q-3Q			
Operational Test Readiness Review (OTRR)						4Q			
IOT&E							1Q		
MS C							1Q		
Initial Operating Capability (IOC)								1Q	

R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **ADMACS Block 3** — DATE: **February 2006**

APPROPRIATION/BUDGET A	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	2232 CV Launch & Recovery Systems

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
ADMACS Block 3	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
Milestones/Phases													**SDD**												**Production/Deployment**							
													MS B											**MS C**									
Program Events													**SFR**	**SRR**		**PDR**	**CDR**										**IOC**							
Deliveries																			**EDM**													
Procurement/Integration/Installation																	**Procure/ Integrate**				**CVN-68**											
Testing																			**DT-IIA**				**FOT&E**	**OTRR**								

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **ADMACS Block 3**					DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME 2232 CV Launch & Recovery Systems					
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
SDD Phase									
MS B						1Q			
System Functional Review (SFR)						1Q			
System Requirments Review (SRR)						2Q			
Preliminary Design Review (PDR)						4Q			
Critical Design Review (CDR)							2Q		
Hardware (EDM) Procure/Integrate (Lab)							1Q-3Q		
Hardware Delivery (EDM)							3Q		
DT-IIA							3Q		
Hardware (EDM) Installation (CVN-68)								1Q-2Q	
Operational Test Readiness Review (OTRR)								3Q	
FOT&E								3Q	
MS C								4Q	
Initial Operating Capability (IOC)									3Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	9999 / Congressional Adds: Various

(U) B. Accomplishments/Planned Program

9774N	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			3.250	
RDT&E Articles Quantity				

Congressional Add:
Aircraft Carrier Aviation Modernization: This program is used to research modernization strategies for the Aircraft Launch and Recovery Equipment and Support Equipment systems aboard carriers in order to reduce the number of human operators, reduce human error, and thereby increase safety/reliability and reduce the fleet's operating costs.

9775N	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.000	
RDT&E Articles Quantity				

Congressional Add:
Machine Vision Confirmation of Launch Bar Engaement: This program will develop a system based on machine vision technology to verify the proper hook up of aircraft to the catapult under all operating conditions.

R-1 SHOPPING LIST - Item No. 112

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	9999 / Congressional Adds: Various

(U) B. Accomplishments/Planned Program

9565C	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.000	
RDT&E Articles Quantity				

Congressional Add:
Synthetic Material Arresting Cable Gear: This program will develop and test a new Synthetic Fiber Arresting Gear Cable to replace the current steel cable material with a lighter weight material having a higher strength to weight ratio. Conduct systems engineering tasks of requirements analysis and tracking, and specification development. Conduct design engineering and laboratory developmental testing on various novel materials and constructions. Conduct modeling and simulation, failure mode analysis, performance data analysis, and fatigue life testing. Award contract to cable manaufacturer for various synthetic cables. Conduct advanced material sheave study to optimize cable to sheave performance.

R-1 SHOPPING LIST - Item No. 112

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: FEBRUARY 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05**					R-1 ITEM NOMENCLATURE 0604518N Combat Information Center Conversion			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**$10.434**	**$7.805**	**$6.708**	**$6.334**	**$4.384**	**$4.388**	**$4.391**
3094 / USW-Decision Support System (USW-DSS)		**$8.017**	**$6.805**	**$6.708**	**$6.334**	**$4.384**	**$4.388**	**$4.391**
9566 / Integrated Tactical Command & Control Cell		**$2.417**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**
9999 / Congressional Adds		**$0.000**	**$1.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The objective of Project 3094 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 Undersea Warfare-Decision Support System (USW-DSS) (formerly named CUP - Common Undersea Picture) for use by Carrier Strike Group (CSG) air, surface, submarine, and surveillance USW and MIW assets. A USW-DSS 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. USW-DSS will align with and build upon common architectures, including GCCS-M, incorporating "Best of Best" applications into a common Sea Combat Commander/Theater Commander Toolset. Successive software builds will be delivered to the GCCS-M Program of Record for production and fleet fielding.

Project 9566 (established via FY 2005 ITC3 Congressional Add) developed the Integrated Tactical Command and Control Console (ITC3), the horizontal display variant of the new family of data processing and display components in the Future Common Display and Multi-Modal Workstation family of products. The ITC3 is the first data processing and display system designed from the deck plate up in accordance with Open Architecture Computing Environment and Human Systems Integration standards. ITC3 combines the processing plant and the horizontal display tier into a single element, enabled by commercial off-the-shelf (COTS) technology, resulting in a reduction in space and power and weight requirements.

Project 9844N (established via FY06 Command & Control (C2) Web-Based Architecture Congressional Add) develops a network accessible data service whose sole focus will be to provide data about US and foreign ships, plans and sensors that can be used to gain a strategic advantage. This system will serve threat/force information on-demand to other participants in the network as independent services that are accessed in a standardized manner, providing more reliable, consistent data sets across programs, easier and timelier updates to data sets, all while moving the Navy closer towards its goal of FORCEnet.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion				PROJECT NUMBER AND NAME 3094 / USW-Decision Support System (USW-DSS)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**8.017**	**6.805**	**6.708**	**6.334**	**4.384**	**4.388**	**4.391**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project 3094 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 an Undersea Warfare-Decision Support System (USW-DSS) capability for Carrier Strike Group (CSG) 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. USW-DSS will align and build upon common architectures, including GCCS-M, incorporating the "Best of Best" applications into a common Sea Combat Commander/Theater Commander Toolset for installation on supporting shore nodes and two CSGs per year starting in FY 2006.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604518N Combat Information Center Conversion	3094 / USW-Decision Support System (USW-DSS)

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
USW-DSS GCCS-M, DII-COE Integration		1.274	1.229	1.298
RDT&E Articles Quantity				

Continuing Defense Information Infrastructure-Common Operating Environment (DII-COE), Global Command and Control System - Maritime (GCCS-M) Licenses and integration; Command and Control integration testing; network and security testing and certifications.

		FY 05	FY 06	FY 07
USW-DSS Requirements Analysis		1.778	1.778	1.597
RDT&E Articles Quantity				

Continuing requirements analysis and design; net-centric USW metrics analysis; operational context analysis; functional analysis, interface design, and system specifications supporting mission planning and evaluation, vulnerability assessment, situational awareness, collaborative communications, prosecution and execution, training, Operator Machine Interface (OMI) and operational reconstruction and analysis.

		FY 05	FY 06	FY 07
USW-DSS TDA Support		2.314	2.314	2.128
RDT&E Articles Quantity				

Continuing Technical Design Agent support; Peer Review Group technology developments and successive Engineering Development Model Build software development and modification with in-lab test-bed; Test and Evaluation planning and support of Developmental Testing and early operational assessment.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604518N Combat Information Center Conversion	3094 / USW-Decision Support System (USW-DSS)

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
USW-DSS Carrier Integration		0.959	0.000	0.000
RDT&E Articles Quantity				

Completed Carrier Tactical Support Center (TSC) Integration and Tactical Decision Aids (TDAs); management and communication of contact/track data and contact database interface design.

		FY 05	FY 06	FY 07
USW-DSS Build Platform Integration/Application Dev.		1.692	1.484	1.685
RDT&E Articles Quantity				

FY05 - Completed development of prototype Build 0 for use as temporary installation and support at-sea testing and exercises for two CSGs in FY05 (Forward Deployed Naval Forces). FY05/06 - Continue Build 1 development and integration and OMI (Operator-Machine Interface) design; incorporate Peer Review Group technology developments into the build-test-build process; integrate air, surface, submarine and surveillance and MIW assets; develop evolutionary embedded training; provide Fleet liaison support. Coordinate and conduct FY05 at-sea testing and deliver to GCCS-M for production build in FY 2006. FY05/06/07 - Begin Build 2 development and integration. Complete Build 2 development in FY07, and coordinate and conduct FY07 at-sea testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604518N Combat Information Center Conversion	3094 / USW-Decision Support System (USW-DSS)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	8.146	6.908	7.121
FY07 President's Budget:	8.017	6.805	6.708
Total Adjustments	-0.129	-0.103	-0.413
Summary of Adjustments			
Other General Provisions	-0.129	-0.103	
Programmtic Changes:			-0.413
Subtotal	-0.129	-0.103	-0.413

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604518N Combat Information Center Conversion	3094 / USW-Decision Support System (USW-DSS)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN BLI 2176/ USW Support Equipment	7.546	8.049	4.481	6.346	5.401	5.615	6.048	Continuing	Continuing

E. ACQUISITION STRATEGY:

- Prime contractor funded through SSC/Charleston contract.
- Mission Planning capability developed by SYS Technologies (formerly Polexis) under SPAWAR contract.

F. MAJOR PERFORMERS:

- Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD - USW-Decision Support System (USW-DSS) Technical Design Agent (TDA) Support, test & evaluation support
- Naval Air Systems Command, Patuxent River, MD -USW-Decision Support System (USW-DSS) interface design and documentation, software management, test & evaluation
- Naval Sea Systems Command, Carderock, MD - USW-Decision Support System (USW-DSS) CUP interface design and documentation, software management, test & evaluation
- Naval Sea Systems Command, Dahlgren, VA - USW-Decision Support System (USW-DSS) requirements analysis, ship integration, mission planning support
- Naval Sea Systems Command, Keyport, WA - USW-Decision Support System (USW-DSS) Carrier integration, track management
- Naval Sea Systems Command, Newport, RI - USW-Decision Support System (USW-DSS) Technical Design Agent (TDA), CHENG, submarine integration.
- Space and Naval Warfare Systems Command, San Diego, CA - GCCS-M, Command and Control (C2) collaboration tools, network and security certifications, mission planner development
- Progeny Systems Corporation, Manassas, VA - USW-Decision Support System (USW-DSS) hardware/software integration
- SYS Technologies, San Diego, CA - USW-Decision Support System (USW-DSS) Mission Planning System (MPS)

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)													DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**			PROGRAM ELEMENT 0604518N Combat Information Center Conversion			PROJECT NUMBER AND NAME 3094 / USW-Decision Support System (USW-DSS)								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	0.000			1.316	12/04	1.251	01/06	0.638	11/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVAIR Patuxent River, MD	0.000			0.705	10/04	0.147	02/06	0.147	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA Carderock, MD	0.000			0.967	10/04	0.752	12/05	0.490	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA Dahlgren, VA	0.000			0.159	10/04	0.055	12/05	0.100	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA Keyport, WA	0.000			0.343	10/04	0.656	11/05	0.650	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA Newport, RI	0.000			0.694	10/04	2.653	12/05	1.376	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	SPAWAR San Diego, CA	0.000			2.141	10/04	0.000	02/06	0.000	10/06	Continuing	Continuing	
Primary H/W & S/W Development	SBIR/WX	PROGENY, Manassas, VA	0.000			0.522	11/04	0.000	N/A	0.000	N/A	Continuing	Continuing	
Primary H/W & S/W Development	C/CPFF	TBD, TBD	0.000							1.928	11/06	Continuing	Continuing	
Primary H/W & S/W Development	Var.	Var.	0.000			0.450	10/04	0.571	11/05	0.659	10/06	Continuing	Continuing	
Subtotal Product Development			0.000			7.297		6.085		5.988		Continuing	Continuing	

Remarks:

Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604518N Combat Information Center Conversion				PROJECT NUMBER AND NAME 3094 / USW-Decision Support System (USW-DSS)								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
At-Sea Test & Evaluation	Var.	Var.	0.000			0.300	10/04	0.300	04/06	0.300	10/06	Continuing	Continuing	
Subtotal T&E			0.000			0.300		0.300		0.300		Continuing	Continuing	
Remarks:														
Program Management Support	Var.	Var.	0.000			0.420	11/04	0.420	02/06	0.420	11/06	Continuing	Continuing	
Subtotal Management			9.996			0.420		0.420		0.420		Continuing	Continuing	
Remarks:														
Total Cost			9.996			8.017		6.805		6.708		Continuing	Continuing	
Remarks:														

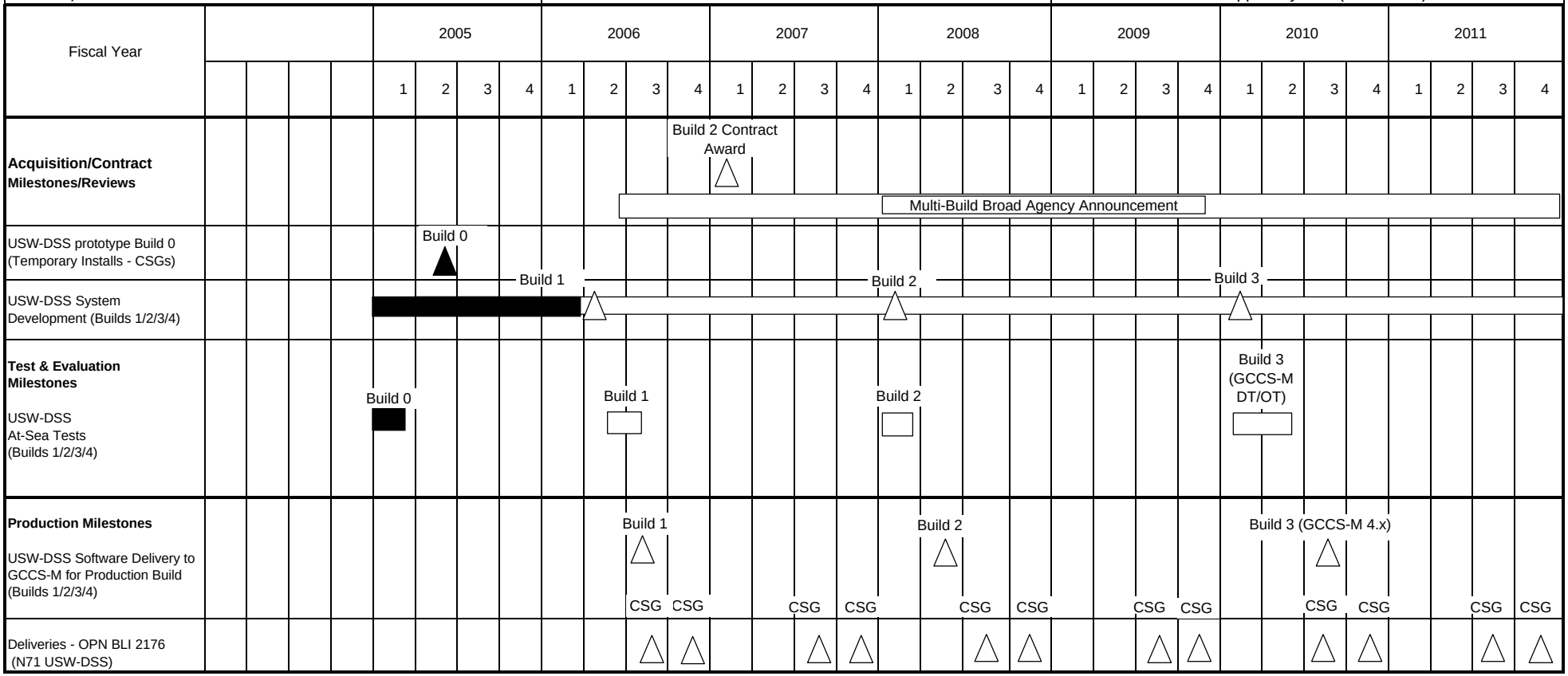
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-05**

PROGRAM ELEMENT NUMBER AND NAME: 0604518N Combat Information Center Conversion

PROJECT NUMBER AND NAME: 3094 / USW-Decision Support System (USW-DSS)



R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT 0604518N Combat Information Center Conversion				PROJECT NUMBER AND NAME 3094 / USW-Decision Support System (USW-DSS)			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
USW-DSS Prototype Build 0 (Temporary Installs - CSGs)		2Q						
USW-DSS At-Sea Test - Build 0		1Q						
USW-DSS Build 1 Complete			1Q					
USW-DSS At-Sea Test - Build 1			2Q-3Q					
USW-DSS Build 1 S/W Delivery to GCCS-M for Prdtn Build			3Q					
USW-DSS Delivery to CSGs			3Q-4Q					
Contract Award				1Q				
USW-DSS Delivery to CSGs				3Q-4Q				
USW-DSS Build 2 Complete					1Q			
USW-DSS At-Sea Test - Build 2					1Q-2Q			
USW-DSS Build 2 S/W Delivery to GCCS-M for Prdtn Build					2Q			
USW-DSS Delivery to CSGs					3Q-4Q			
USW-DSS Delivery to CSGs						3Q-4Q		
USW-DSS Build 3 Complete							1Q	
USW-DSS At-Sea Test - Build 3							1Q-2Q	
USW-DSS Build 2 S/W Delivery to GCCS-M for Prdtn Build							3Q	
USW-DSS Delivery to CSGs							3Q-4Q	
USW-DSS Delivery to CSG/ Non CSG Platforms								3Q-4Q
USW-DSS Build 4 Complete								Cont.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604518N Combat Information Center Conversion	9844N / Command & Control (C2) Web-Based Architecture

CONGRESSIONAL ADDS:

	FY 06			
9844N	1.000			
Command & Control (C2) Web-Based Architecture				

FY06 Congressional Add: Command & Control (C2) Web-Based Architecture develops a network accessible data service whose sole focus will be to provide data about US and foreign ships, plans and sensors that can be used to gain a strategic advantage. This system will serve threat/force information on-demand to other participants in the network as independent services that are accessed in a standardized manner, providing more reliable, consistent data sets across programs, easier and timelier updates to data sets, all while moving the Navy closer towards its goal of FORCEnet.

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604558N/New Design SSN (VIRGINIA Class Design Development)			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	**156.806**	**175.567**	**169.580**	**206.013**	**150.702**	**145.191**	**177.015**	
1947/VIRGINIA Class HM&E Development	**96.828**	**97.264**	**115.132**	**151.648**	**106.245**	**108.471**	**134.064**	
1950/VIRGINIA Class Combat Systems Dev	**48.412**	**42.228**	**47.885**	**47.941**	**41.706**	**33.933**	**40.150**	
2887/SSN Combat Sys Tech Insert/Refresh	**5.469**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
3062/Submarine Multi Mission Team Trainer	**3.686**	**2.575**	**6.563**	**6.424**	**2.751**	**2.787**	**2.801**	
9386/SSN Development - SBIR Phase III Research	**2.411**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
9999 / Congressional Plus-ups (FY06)		**33.500**						
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 2887: The Congressional plus-up is for MPP SBIR follow-on for Technology Insertion and refresh for VIRGINIA SSN Combat System.

(U) Project 3062: 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.

(U) Project 9386: The Congressional plus-up is for VIRGINIA Class SSN Development SBIR Phase III Research to establish and extend a Technology Insertion program.

(U) Project 9999: Reflects a summary of FY06 Congressional Plus-Ups consisting of; Multi-Mission Module, Large Aperture Bow (LAB(Array, ShipMATES, Network Centric capability, Command & Control System lower power, Common Electronics replacement, COTS web enabled services, Open architecture technology, submarine technology insertion.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E DEVELOPMENT			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**96.828**	**97.264**	**115.132**	**151.648**	**106.245**	**107.471**	**134.064**
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. in the future, products from the newly started DARPA TANGO/BRAVO Submarine technology Program may transition to prototyping and/or applicability on VIRGINIA hulls.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	63.026	75.248	63.988	
RDT&E Articles Quantity				

HM&E DEVELOPMENT

FY05 Accomplishments: Continued design, manufacturing, and qualification testing of prototype technologies and components such as: weapons stowage and handling systems and ship service turbine generator (SSTG) and ship control system block upgrades. Completed shock qualification of weapons handling module, initiate shock qualification of torpedo tube, and continue shock qualification of other major 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. Initiated development of the risk reduction technology for Conformal Acoustic Velocity Sensor (CAVES) Large Wide Aperture Array (LWAA). Continued integration of improved main seawater system component. Executed preliminary design for Multi-Mission Module. Executed feasibility demonstrations for Large Aperture Bow (LAB) Array and Automation for Reduced Manning Congressional Plus-Ups. Initiated study of benefits of damping tiles in ballast tanks. Redesigned MPU throttle control. Procured photonics head for shock qualification. Initiated resolution of ILPE Obsolescence.

FY06 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG). 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 shock qualification of torpedo tube system. Technology Insertions include (1) continuation of development of the composite advanced sail and (2) Risk Reduction Technologies for Conformal Acoustic Velocity Sensor (CAVES) Large Wide Aperture Array (LWAA). Continue design integration of improved main seawater system components. Complete study of benefits of damping tiles in ballast tank. Complete design of improved rudder/anchor light. Initiate shock qualification of Air Induction Diesel Exhaust (AIDE) Valve, Large Penetrations, Lock Out Trunk (LOT) and Radar. Initiate implodable volume research, and resolution of ILPE and Ship Control Obsolescence. Evaluate design modifications to replace propulsor construction and maintenance cost. Generate propulsor logistics products.

FY07 Plan: Continue development of (1) the Advanced Sail (including 1/4 -scale evaluation on the large scale model (LSV) CUTTHROAT and (2) Risk Reduction Technologies for CAVES Large WAA. Initiate design of CAVES Large WAA. Resolve Sea Trial Acoustic Issues. Complete design integration of improved main seawater components. Update Ship Control Simulator. Complete shock qualification of Air Induction Diesel Exhaust (AIDE) Valve, Large Penetrations, Lock Out Trunk (LOT) and Radar. Continue implodable volumes research. Initiate broad program to introduce components and technology to reduce VIRGINIA construction and supports costs.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program (continued)

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	4.883	4.780	4.547	
RDT&E Articles Quantity				

ADMINISTRATIVE/ENVIRONMENTAL

FY05 Accomplishments: Continued analyses and evaluations relating to force effectiveness assessment and component performance tradeoffs. Maintained cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering processes. Continued coordination of VIRGINIA Class submarine specification at the shipbuilder. Continued cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continued environmental compliance and pollution prevention efforts.

FY06 Plan is to complete environmental compliance and pollution prevention under VIRGINIA design efforts.

FY06 - FY08 Plans: 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.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	1.382	0.163	0.000	
RDT&E Articles Quantity				

LOGISTIC SUPPORT

FY05 Accomplishments: Provided government technical support services to the Design Yard for Onboard Team Trainer Master Controller (OBTT MC) developmental efforts. Provided trainer development support for VIRGINIA (NNS774) trainers at NAVAIR Orlando. Awarded the VIRGINIA OBTT MC Build 9.0/9.1 PTR Fixes to EB.

FY06 - Plan: Provide government technical support services to the Design Yard for OBTT Integration with the NSWC Ownship Motion Model. Provide technical expertise for the development of the VIRGINIA C3I OBTT at NUWC, Newport. Deliver the Diesel Front Panel Simulator to Naval Submarine School, Groton.

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	26.886	17.073	46.597	
RDT&E Articles Quantity				

TEST AND EVALUATION

FY05 Accomplishments: Conducted shipbuilder at-sea trials and dockside testing. Planned and coordinated second shipbuilder Test and Evaluation efforts. Prepared test plans, schedules and support associated with developmental testing, conduct Operational Testing - Phase IIC, Shock Acoustic and Launcher Trials Testing, Weapons System Accuracy Trials. Conducted Hydrodynamic/ Ship Control trials, Weapons System Accuracy Test (WSAT), Acoustics Trials, Lock-Out Trunk Testing and Launcher Trials. LFT&E modeling and analysis. Continued planning for TECHEVAL and OPEVAL. Continued development of the Test and Evaluation Master Plan (TEMP) Rev E, Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST).

FY06 Plan: Planning and evaluating Acoustic Trials, EM Trials, Hydrodynamic Performance testing, Target Strength Testing and C3I testing. Continue planning for TECHEVAL/OPEVAL. Obtain final concurrence on TEMP Rev E. Continue LFT&E modeling and analysis. Continue planning for TECHEVAL and OPEVAL. Continue development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST).

FY07 Plan: Conduct Total Ship Survivability Test on SSN 775. Conduct Post PSA testing on SSN774, including EM Silencing, Acoustic Trials, Target Strength Verification, and Hydrodynamic trials. Begin conduct of TECHEVAL/OPEVAL.

R-1 SHOPPING LIST - Item No. 114

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY2006	FY2007
FY06 President's Budget Controls	109.984	110.322	96.373
FY07 President's Budget Controls	96.828	97.264	115.132
Total Adjustments	-13.156	-13.058	18.759
Summary of Adjustments			
Small Business Innovative Research	-1.585		
Department of Energy Transfer	-0.084		
Warfare Studies	2.500		
Combat Systems Program Trouble Reports	0.000	0.000	-0.900
MICROSAT Reprogramming	-9.000		
FY05 Omnibus Reprogramming	-5.100		
Contrct Support Reduction & Respread			-0.413
NWCF CIVPERS Efficiencies			-0.710
Inflation			0.424
Fuel Price Adjustments			0.279
CIVPERS Pay Raise Rate			0.079
R&D VA Class Cost Reduction			20.000
Reduction T&E Req'mts		-11.400	
Congressional Action 1% Reduction		-1.153	
Section 8125		-0.505	
Trusted Foundry (OSD-14)	0.113		
	-13.156	-13.058	18.759

Schedule:

"Not Applicable"

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
SCN Line 201300 PE: 0203281N	2570.5	2547.9	2452.1	2499.0	3526.9	3748	3766.5	50227.2	86867.5
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	18.6	17.8	30.6	55.2	57.6	57.6	59.9	cont.	cont.
OPN BA-8 Line Item 094200	59.4	143.3	155.9	182.6	210.0	223.1	232.3	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. 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. 1998.
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

CLASSIFICATION:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Component Development	Contract	EB-2112 Groton, CT	476.919	15.983	10/04	0.000		0.000		0.000	492.909	
Component Development	Contract	EB-2103 Groton, CT	0.000	13.000	11/05	14.187	11/05	30.066	11/06	402.271	939.426	
Component Development	SS/CPFF	EB-4030 Groton, CT	236.311	0.000	11/04	0.000		0.000	11/06	0.000	296.524	
Component Development	PD	SOS/Groton	13.294	0.706		0.000		0.000		0.000	0.000	
Component Development	SS/CPFF	LM-6226	18.015	0.156		0.000		0.000		0.000	18.171	
Component Development	WR	NSWC Carderock MD	453.309	17.605	11/04	29.685	11/05	16.631	11/06	78.969	596.199	
Component Development	WR	NSWC Crane, IA	4.029	0.056	11/04	0.000	11/05	0.000	11/06	0.000	4.085	
Component Development	WR	NUWC Newport, RI	80.698	3.470	11/04	1.182	11/05	2.143	11/06	36.125	123.618	
Component Development	WR	NFPC Phila, PA	6.256	0.000	11/04	0.000	11/05	0.000	11/06	0.000	6.256	
Component Development	Various	Various	197.345	11.393	Various	22.293	Various	2.175	Various	0.000	233.206	
Misc Technology Insertion	Various	Various	25.032	4.151	Various	12.765	Various	18.782	Various	123.105	183.835	
Subtotal Product Development			1,511.208	66.520		80.112		69.797		640.470	2,368.107	

Remarks:

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support												
Software Development												
Integrated Logistics Support	WR	NSWC Carderock MD	0.867	0.000		0.025				0.000	0.892	
Integrated Logistics Support	WR	NAWC Orlando, FL	25.711	0.888		0.000				0.000	26.599	
Integrated Logistics Support	WR	NUWC Newport, RI	2.269	0.342		0.100				0.000	2.711	
Integrated Logistics Support	C/CPAF	SEAPORT D7019 Rockville MD	3.306	0.100	11/05	0.000	11/05	0.000		0.000	3.406	
Integrated Logistics Support	SS/CPFF	EB-2112 Groton, CT	0.000	0.053	11/05	0.038	11/05	0.000		0.000	0.091	
Misc	Various	Misc	0.000	0.000	11/05	0.000	11/05			0.000	0.000	
Award Fees											0.000	
Subtotal Support			32.153	1.383		0.163		0.000		0.000	33.699	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	Contract	EB-2112 Groton, CT	5.174	0.442	11/05	0.457	11/05	0.088	11/06	0.000	6.161	
Test & Evaluation	WR	NSWC Carderock MD	42.190	15.627	11/05	3.447	11/05	23.462	11/06	52.267	136.993	
Test & Evaluation	WR	NUWC Newport, RI	24.538	7.552	11/05	7.939	11/05	17.291	11/06	18.821	76.141	
Test & Evaluation	C/CPAF	EG&G C6411 Rockville, MD	7.469	0.000		0.000		0.000		0.000	7.469	
Test & Evaluation	C/CPAF	SEAPORT D7019 Rockville MD	13.084	0.850	11/05	1.141	11/05	0.939	11/06	0.963	16.977	
Test & Evaluation	Various	Miscellaneous	13.361	2.415	11/05	2.742	11/05	2.642	11/06	31.450	52.610	
Subtotal T&E			105.816	26.886		15.726		44.422		103.501	296.351	
Remarks:												

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	SEAPORT D7019 Rockville MD	10.678	1.415	11/05	1.063	11/05	0.713	11/06	33.497	47.366	
Program Management Support	C/CPAF	EG&G C6411 Rockville, MD	21.537	0.000		0.000		0.000		0.000	21.537	
Program Management Support	Various	Miscellaneous	19.232	0.624		0.200		0.200		0.000	19.232	
Travel			1.032									
Award Fees		EG&G C6411 Rockville, MD	0.000								0.000	
Subtotal Management			52.479	2.039		1.263		0.913		33.497	88.135	
Remarks:												
Total Cost			1,701.656	96.828		97.264		115.132		777.468	2,788.348	

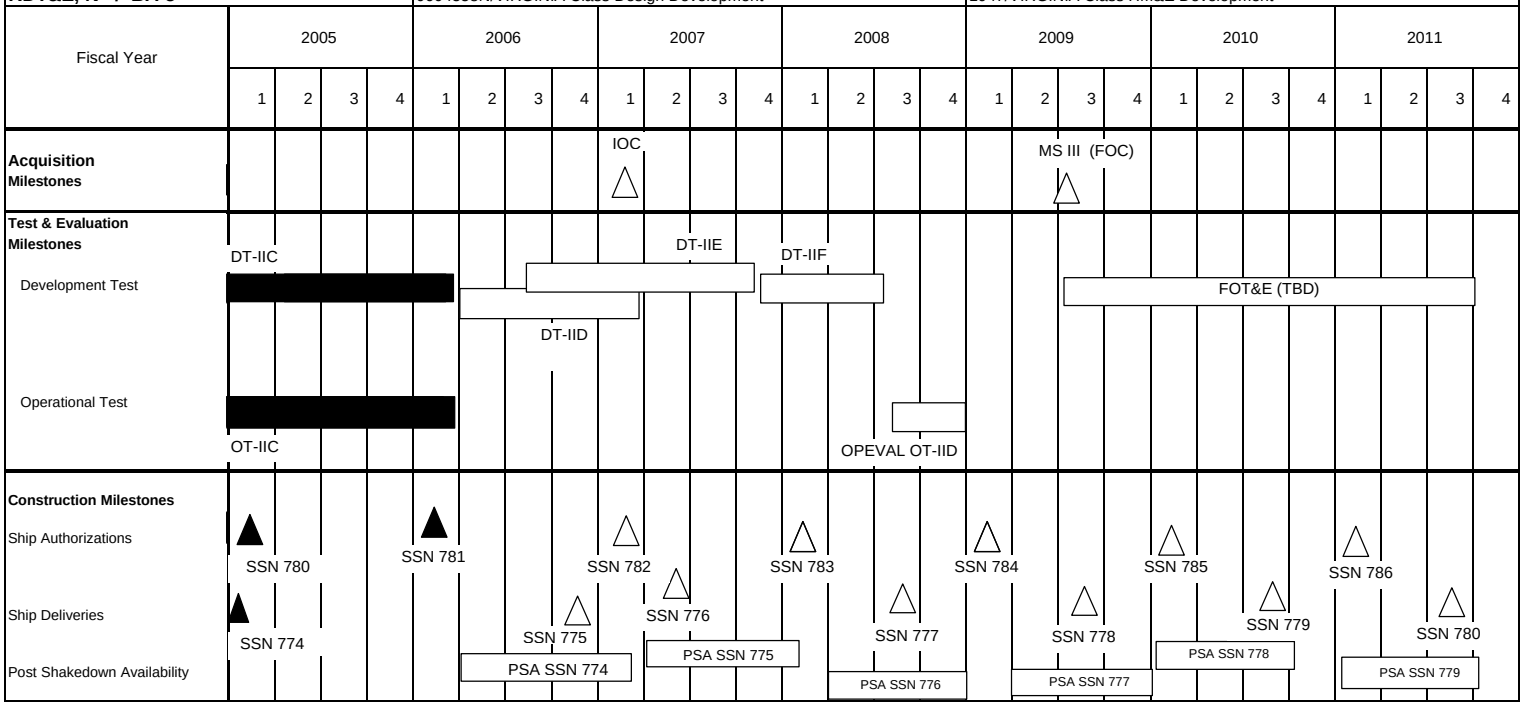
R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E Development



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E Development			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Operational Test (OT-IIC)	1Q-4Q						
Ship Authorization (SSN 779)							
Ship Delivery (SSN 774)	1Q						
Developmental Test (DT-IIC)	1Q-4Q	1Q					
Ship Authorization (SSN 780)	1Q						
Post Shakedown Availability (PSA SSN 774)		2Q-4Q	1Q				
Ship Delivery (SSN 775)		4Q					
Ship Authorization (SSN 781)		1Q					
Developmental Test (DT-IID)		2Q-4Q	1Q				
Initial Operating Capability (IOC)			1Q				
Post Shakedown Availability (PSA SSN 775)			2Q-4Q	1Q			
Developmental Test (DT-IIE)		3Q-4Q	1Q-4Q				
Developmental Test (DT-IIF)			4Q	1Q-3Q			
Ship Authorization (SSN 782)			1Q				
Ship Delivery (SSN 776)			2Q				
Operational Evaluation (OT-IID) (OPEVAL)				3Q-4Q			
Post Shakedown Availability (PSA SSN 776)				2Q-4Q	1Q		
Milestone III (MS III)					3Q		
Full Operational Capability (FOC)					3Q		
Ship Authorization (SSN 783)				1Q			
Ship Delivery (SSN 777)				3Q			
Post Shakedown Availability (PSA SSN 777)					2Q-4Q	1Q	
Ship Authorization (SSN 784)					1Q		
FOT&E (OT-III & DT-III)					TBD	TBD	TBD
Ship Delivery (SSN 778)					3Q		
Ship Authorization (SSN 785)						1Q	
Post Shakedown Availability (PSA SSN 778)						1Q-3Q	
Ship Delivery (SSN 779)						3Q	
Ship Authorization (SSN 786)							1Q
Post Shakedown Availability (SSN 779)							1Q-3Q
Ship Delivery (SSN 780)							3Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1950/VIRGINIA Class Combat System Development			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**48.412**	**42.228**	**47.885**	**47.941**	**41.706**	**33.933**	**40.150**
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) The FY04/05 budget submit expanded 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

B. Accomplishments/Planned Program --- C3I Systems Engineering

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	38.238	29.029	32.946	
RDT&E Articles Quantity				

1. (U) FY 2005 ACCOMPLISHMENTS:

• (U) ($38.238M) Continued development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Began the detailed planning for C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Continued the Voyage Management System and information assurance implementation for NPES system/subsystems. The FY 2005 controls included $18.2M of Congressional Plus-Up funding for the following: $1.5M for Information Assurance; $8.0M for Common Submarine Radio Room; $2M for NTDPS Mates; $1.7M for Shipboard Wireless LAN; $3.5M for COTS Web Enabled Tool kit, and $1.5M for Enhanced Open System Module.

2. (U) FY 2006 PLAN:

• (U) ($29.029M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Continue the detailed planning for C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Continue the Voyage Management System and information assurance implementation for NPES system/subsystems.

3. (U) FY 2007 PLAN:

• (U) ($32.946M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Conduct C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Complete the Voyage Management System implementation. Continue the information assurance implementation for NPES system/subsystems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

B. Accomplishments/Planned Program (Cont.) --- Sonar Combat Control and Architecture Subsystems

	FY 05	FY 06	FY 07	FY 08
Accomplishments/Effort/Subtotal Cost	10.174	13.199	14.939	11.375
RDT&E Articles Quantity				

1. (U) FY 2005 ACCOMPLISHMENTS:

• (U) ($9.599M) Continued development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Began the detailed planning for S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL.

2.. (U) FY 2006 PLAN:

• (U) ($13.199M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Continue the detailed planning for S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Begin the development of SCCA System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.

3. (U) FY 2007 PLAN:

• (U) ($14.939M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Conduct S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Continue the development of SCCA System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget Controls	49.426	42.871	40.130
FY07 President's Budget Controls	48.412	42.228	47.885
Total Adjustments	-1.014	-0.643	7.755
Summary of Adjustments			
Combat System PTR Corrections			7.800
Various	-1.014	-0.643	-0.045
Subtotal	-1.014	-0.643	7.755

Schedule:

"Not Applicable"

Technical:

"Not Applicable"

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011	To Complete	Total Cost
SCN Line 201300 PE: 0203281N	2570.5	2547.9	2452.1	2499.0	3526.9	3748.0	3766.5	50227.2	86867.5
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	18.6	17.8	30.6	55.2	57.6	57.6	59.9	cont.	cont.
OPN BA-8 Line Item 094200	59.4	143.3	155.5	182.6	210.0	223.1	232.3	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 Resorses)
(U) PE 0604777N (Navigation/ID Systems)
(U) PE 0101226N (Submarine Acoustic Warfarte 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 awarded a multi-year contract for the FY04-08 ships. 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.

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1950/VIRGINIA Class Combat System Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	258.524	1.003	Various	0.099	Various	0.056	Various	0.000	259.682	259.682
C3I Prime Contract E&MD Award Fee	C/CPAF	Lockheed Manassas, VA	7.871	0.150	Various	0.010	Various	0.006	Various	0.000	8.037	8.037
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA	21.895	0.477	Various	1.297	Various	0.642	Various	0.000	24.311	24.311
ARCI Prime Contract	SS/CPAF	Lockheed Manassas, VA	2.300	3.833	Various					0.000	6.133	6.133
Unique Virginia Class Improvments	TBD	Various/TBD	0.000			4.158	11/05	4.706	11/06	91.794	100.658	100.658
Advanced Display Sys (AN/UYQ-70)	SS/CPIF	Lockheed St. Paul, MN	26.921	0.500	03/05	0.845	11/05	0.956	11/06	7.887	37.109	37.109
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	31.762	0.920	11/04	2.706	11/05	2.136	11/06	8.318	45.842	45.842
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, M	4.060								4.060	4.060
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	38.067							6.410	44.477	44.477
Platform Integration	SS/CPFF	EB Corp Groton, CT	29.721	1.273	Various	1.400	11/05	1.000	11/06	13.823	47.217	47.217
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 Charlottsville, VA	6.153								6.153	6.153
Technology Refreshment	Various	Various/TBD	10.765							9.590	20.355	
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500								2.500	2.500
Technical Direction Agent	N/A	NUWC Newport, RI	212.773	5.996	Various	6.000	Various	6.500	Various	48.466	279.735	
Technology Refreshment/Info. Assur.	C/CPFF	Progeny Systems,Manassas	18.547	4.729	Various	2.000	11/05	1.000	11/06	6.372	32.648	
NTDPS Network Centric Architecture	SS/CPFF	DSR, Fairfax, Virginia	3.760	0.500	Various						4.260	
Systems Engineering	N/A	NSWC Cardock, MD	4.775	0.473		0.325		0.330		2.880	8.783	
Systems Engineering	N/A	NSWC Crane, IN	3.722								3.722	
Systems Engineering	N/A	SSC Charleston, SC	2.333								2.333	
Systems Engineering	N/A	SSC San Diego, CA	2.545								2.545	
Systems Engineering	N/A	NUWC Keyport, WA	9.077	0.172	11/04	0.176	11/05	0.180	11/06	9.285	18.890	
Miscellaneous	Various	Various	70.937	27.147	Various	16.292	Various	23.032	Various	87.308	224.716	
Subtotal Product Development			830.197	47.173		35.308		40.544		292.133	1,245.355	

Remarks:

Development Support			0.000								0.000	
Software Development			0.000								0.000	
Training Development			0.000								0.000	
Integrated Logistics Support			0.000								0.000	
Configuration Management			0.000								0.000	
Technical Data			0.000								0.000	
GFE			0.000								0.000	
Award Fees			0.000								0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1950/VIRGINIA Class Combat System Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.000								0.000	
Operational Test & Evaluation			0.000								0.000	
Test & Evaluation	Various	Various	0.000			4.130	Various	4.712	Various	1.500	10.342	
Test Assets			0.000								0.000	
Tooling			0.000								0.000	
GFE			0.000								0.000	
Award Fees			0.000								0.000	
Subtotal T&E			0.000	0.000		4.130		4.712		1.500	10.342	
Remarks:												
Contractor Engineering Support			0.000								0.000	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	7.263	1.239	Various	2.790	Various	2.629	Various	22.868	36.789	
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	4.765							2.143	6.908	
Program Management Support			0.000								0.000	
Travel			0.000								0.000	
Subtotal Management			44.290	1.239		2.790		2.629		25.011	75.959	
Remarks:												
Total Cost			874.487	48.412		42.228		47.885		318.644	1,331.656	
Remarks:												

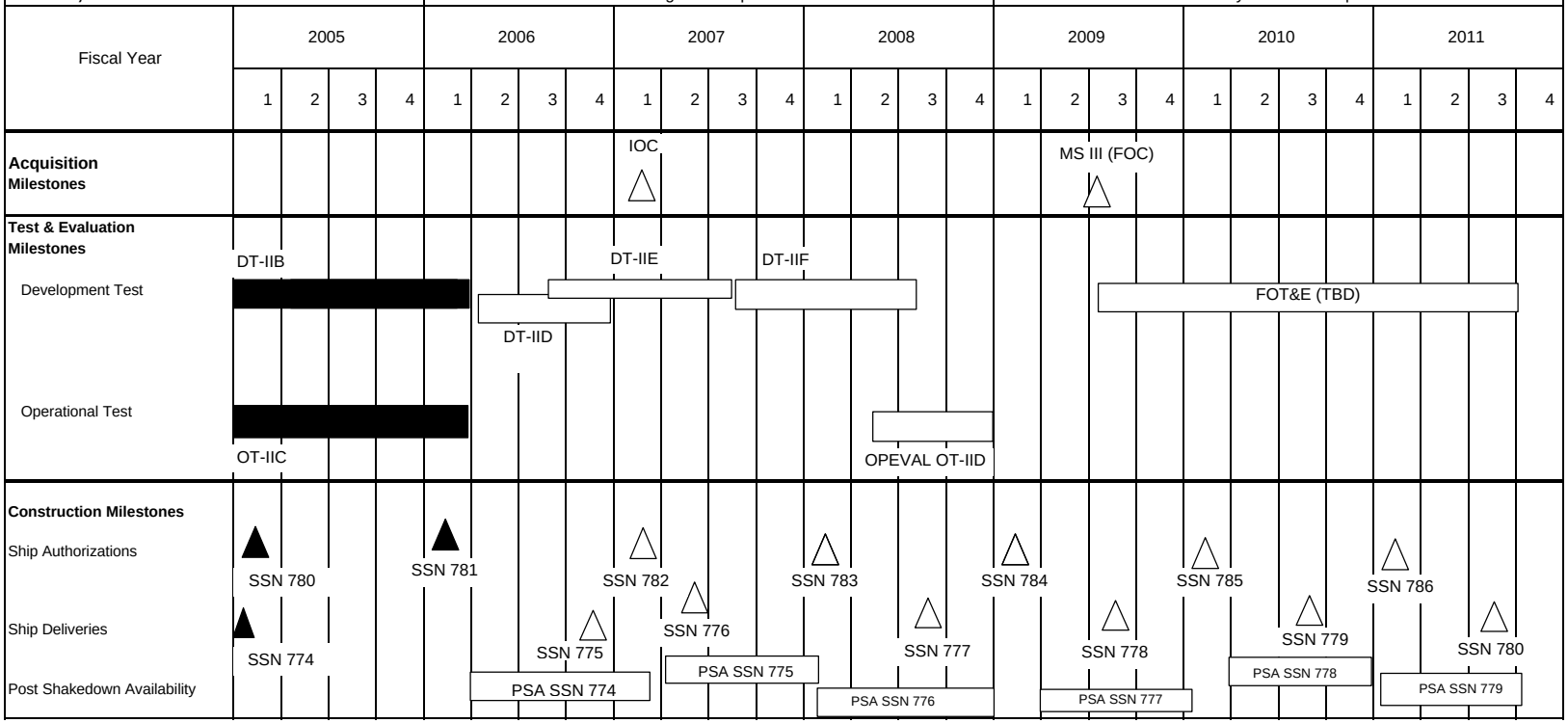
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1950/VIRGINIA Class Combat Systems Development



R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROJECT NUMBER AND NAME 1950/VIRGINIA Class Combat System Development			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Operational Test (OT-IIC)	1Q-4Q						
Ship Authorization (SSN 779)							
Ship Delivery (SSN 774)	1Q						
Developmental Test (DT-IIC)	1Q-4Q	1Q					
Ship Authorization (SSN 780)	1Q						
Post Shakedown Availability (PSA SSN 774)		2Q-4Q	1Q				
Ship Delivery (SSN 775)		4Q					
Ship Authorization (SSN 781)		1Q					
Developmental Test (DT-IID)		2Q-4Q	1Q				
Initial Operating Capability (IOC)			1Q				
Post Shakedown Availability (PSA SSN 775)			2Q-4Q	1Q			
Developmental Test (DT-IIE)		3Q-4Q	1Q-4Q				
Developmental Test (DT-IIF)			4Q	1Q-3Q			
Ship Authorization (SSN 782)			1Q				
Ship Delivery (SSN 776)			2Q				
Operational Evaluation (OT-IID) (OPEVAL)				2Q-4Q			
Post Shakedown Availability (PSA SSN 776)				2Q-4Q	1Q		
Milestone III (MS III)					3Q		
Full Operational Capability (FOC)					3Q		
Ship Authorization (SSN 783)				1Q			
Ship Delivery (SSN 777)				3Q			
Post Shakedown Availability (PSA SSN 777)					2Q-4Q	1Q	
Ship Authorization (SSN 784)					1Q		
FOT&E (OT-III & DT-III)					TBD	TBD	TBD
Ship Delivery (SSN 778)					3Q		
Ship Authorization (SSN 785)						1Q	
Post Shakedown Availability (PSA SSN 778)						1Q-3Q	
Ship Delivery (SSN 779)						3Q	
Ship Authorization (SSN 786)							1Q
Post Shakedown Availability (SSN 779)							1Q-3Q
Ship Delivery (SSN 780)							3Q

CLASSIFICATION: **UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development			PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		3.686	2.575	6.563	6.424	2.751	2.787	2.801
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 SSGN 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 (AN/BYG-1) and ARCI (AN/BQQ-10) 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. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer

B. Accomplishments/Planned Program

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		3.686	2.575	6.563
RDT&E Articles Quantity				

FY05 Combined components and tailored interfaces to create immersive environment. Incorporated latest Advanced Processor Build (APB).
FY06 Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays.
FY07 Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays.
FY07 Develop standalone functionality of SMMTT3 SEAWOLF Sonar and Combat Control

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	0.000
RDT&E Articles Quantity				

		FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission TeamTrainer

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY 06 Pres Controls)	3.704	2.614	2.674
Current BES/DON Budget: (FY07 Pres Controls)	3.686	2.575	6.563
Total Adjustments	-0.018	-0.039	3.889
Summary of Adjustments			
Misc Adjustments	-0.018	-0.039	-0.064
SMMTT3 SEAWOLF			3.953
Subtotal	-0.018	-0.039	3.889

Schedule:

"Not Applicable."

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
566100, Submarine Training Device Modification	30.2	24.8	17.1	14.3	17.7	13.1	13.5	0.0	130.7

E. ACQUISITION STRATEGY: *

The SMMTT program phase 3 software development is accounted for in this RDT&E line. All production kits and software are procured in OPN PE 0804731N BLI 566100.

F. MAJOR PERFORMERS: **

NSWCCD

R-1 SHOPPING LIST - Item No. 114

Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
Component Development	WX	NSWCCD, Bethesda, MD		3.191	various	2.310	various	6.163	various	13.163	24.827	N/A
Component Development	FR	UT Austin ARL		0.495	12/04	0.265	various	0.400	various	1.600	2.760	2.760
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	3.686		2.575		6.563		14.763	27.587	

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:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**			PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development			PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	3.686		2.575		6.563		14.763	27.587	
Remarks:												

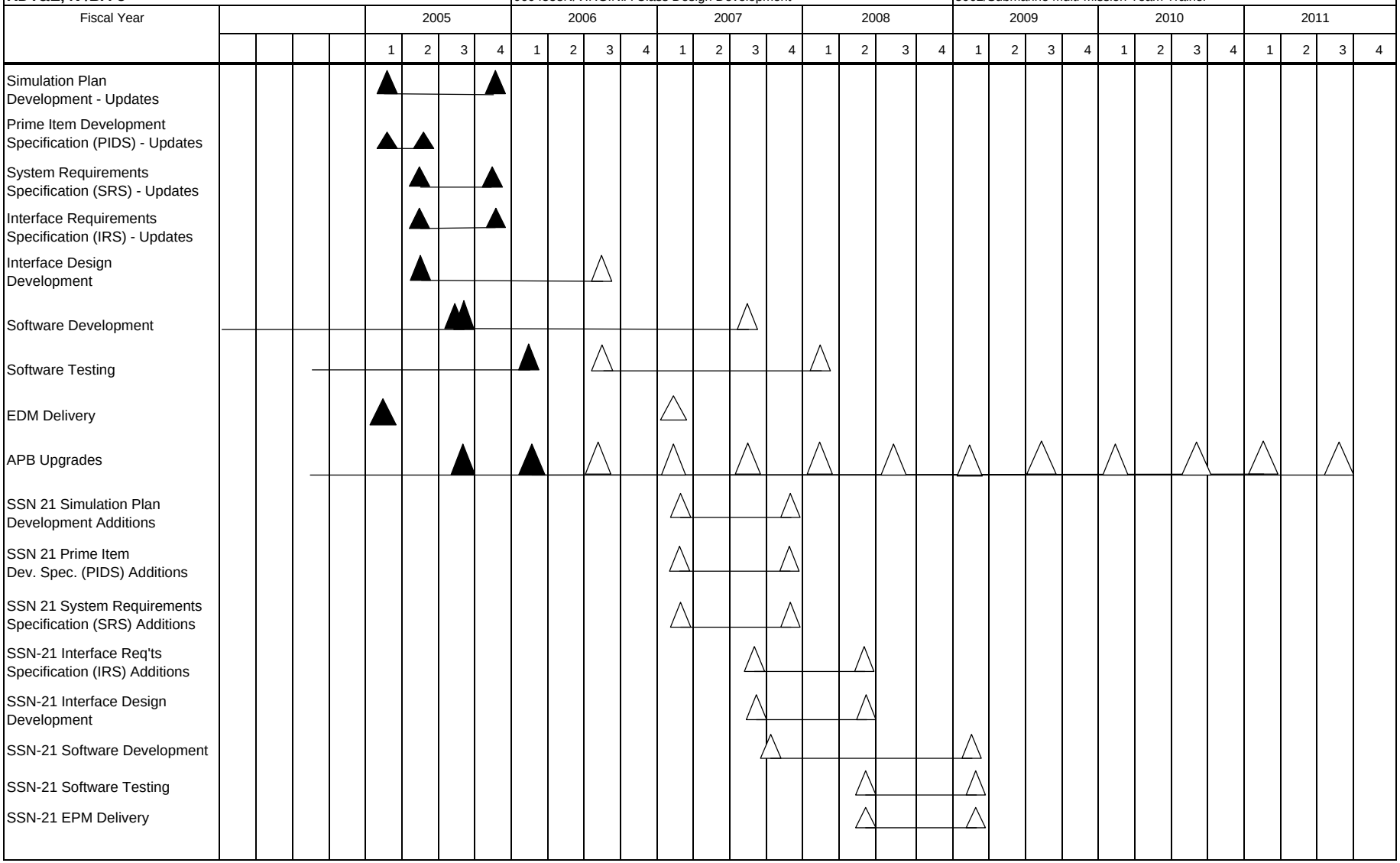
R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer



R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Simulation Plan Development Updates		4Q						
PIDS Updates		2Q						
SRS Updates		2Q						
IRS Updates		4Q						
Interface Design Development		2Q-4Q	1Q-4Q	1Q-4Q				
Software Development		1Q-4Q	1Q-4Q	1Q-2Q				
Software Testing		1Q-4Q	1Q-4Q	1Q-4Q				
APB/TI Upgrades from tactical		3Q	1Q, 3Q	1Q, 3Q	1Q, 3Q	1Q, 3Q	1Q, 3Q	1Q, 3Q
EDM Delivery		3Q	3Q	3Q	3Q	3Q	3Q	3Q
SSN 21 Simulation Plan Development Additions				1Q-4Q				
SSN 21 Prime Item Dev Spec. (PIDS) Additions				1Q-4Q				
SSN 21 System Requirements Spec (SRS) Additions				1Q-4Q				
SSN 21 Interface Reqt's Spec (IRS) Additions				3Q-4Q	1Q-2Q			
SSN 21 Interface Design Development				3Q-4Q	1Q-2Q			
SSN 21 Software Development				4Q	1Q-4Q	1Q		
SSN 21 Software Testing					2Q-4Q	1Q		
SSN 21 EPM Delivery					2Q-4Q	1Q		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	Project Unit (PU) No. and Name: Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
Identify Project Number: 1950C				
Title: ShipMATES integrated learning environment	2.400			

Provide a brief description of the Congressional Plus-Up. Complete development of NTDPS Build #3, CNO's Revolution in Training (Task Force Excel), which brings a component of SEA WARRIOR, the Navy's Shipboard Integrated Learning Environment to sea; integrate and test NTDPS Build #4, (Advanced Shipboard Training Module) and the Personnel module developed under the Submarine Non-tactical Automated Distribution Information System (SNADIS). Train the crews on NTDPS operation and update the configurations of fielded Maintenance, Administration Training, Education, and Support (MATES) Applications within NTDPS based on changes in commercial technologies or fleet requirements.

	FY 06			
Identify Project Number: 2887C				
Title: Network centric capability Technology Insertion	2.800			

Provide a brief description of the Congressional Plus-Up. Research to establish and extend a technology insertion program and promote enhanced commonality with other class submarines. Complete the design, test and evaluation of the Photonics Mast Workstation.

	FY 06			
Identify Project Number: 9845N				
Title: Sub command and control systems lower power	1.500			

Provide a brief description of the Congressional Plus-Up. Research Total Ownership Cost reduction technology insertion opportunities with Submarine Command and Control System electronics. Conduct research in engineering design alternatives and identify specific viable candidates to reduce the production and life cycle cost of the low power advanced technology electronics.

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	Project Unit (PU) No. and Name: Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
Identify Project Number: 9846N				
Title: Submarine common electronics replacement	1.700			

Provide a brief description of the Congressional Plus-Up. Engineering design and development of the upgrades to the display functions on VIRGINIA Class, TRIDENT, SSGN and SSN 688 Class submarines.

	FY 06			
Identify Project Number: 9847N				
Title: Submarine COTS Web enabled Service Tool kit	2.000			

Provide a brief description of the Congressional Plus-Up. The COTS Web Enabled Service Toolkit (CWEST) will enable the submarine combat system to interface with Meteorological Oceanographic (METOC) services using COTS framework and web services. The COTS Framework and web services provide the interfaces for Data Oriented Services (DOS) and User Facing Services (UFS) in accordance with FORCEnet and TFW requirements. The METOC services will be provided in support of acoustic environmental needs for all SONAR applications, and will serve as a model for future SONAR off-hull connectivity requirements.

	FY 06			
Identify Project Number: 9848N				
Title: Surface Ship open architecture tech insertion	1.700			

Provide a brief description of the Congressional Plus-Up. Design and implement a standards compliant middle-ware for surface combat systems based on submarine implementation. Develop an integration approach for an existing submarine system working with the open architecture computing environment community. This effort will identify specific technical approaches that could be employed by PEO IWS to address interoperability and commonality opportunities which may be realized through compliance with the Navy OACE (open architecture computing environment). The focus is to evaluate the standards that are proposed in the OACE imitative and develop a plan that permits the large base OA systems developed by the Submarine community to use and interoperate with the OACE approved standard

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	Project Unit (PU) No. and Name: Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
Identify Project Number: 9849N				
Title: VA Class sub tech insertion amd cost reduction	4.600			

Provide a brief description of the Congressional Plus-Up. Research Total Ownership Cost reduction technology insertion opportunities with Virginia Class electronics. Conduct research in engineering design alternatives and identify specific viable candidates to reduce the production and life cycle cost of the active sonar transmit electronics.

	FY 06			
Identify Project Number: 1947C				
Title: Large Aperture Bow (LAB) Array	1.800			

Provide a brief description of the Congressional Plus-Up. Continue work on preliminary design of the LAB array with sufficient system, cabling, structural, mechanical, and arrangement information to initiate detailed design and qualification. Test plans will be developed for system qualification testing and detailed design will be initiated for the LAB array components and system.

	FY 06			
Identify Project Number: 1947C				
Title: Multi-Mission Module (MMM)	15.000			

Provide a brief description of the Congressional Plus-Up. This project will include the following four tasks: Multi-Mission Module Platform Development, Flexible Payload Module, Payload Interface Module and Payload Launch and Control. The MMM efforts will develop a preliminary design of the FY12 Spiral Ship. The FY12 Spiral concept will build on the FY09 Affordability Spiral Ship including all Tech Insertion and Cost Reduction items. Preliminary design will include the development of three dimensional electronic mockup level drawings, ship system diagrams, proposed ship specification mods, and integrated design and construction schedule, component R&D plans and budget quality estimates for detailed design and construction, ship displacement and weight summaries."

R-1 SHOPPING LIST - Item No. 114

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**			R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N					
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011	
Total PE Cost	**2.966**	**2.878**	**3.260**	**2.708**	**2.756**	**2.912**	**2.960**	
SSN-21 Developments/1946	**2.966**	**2.878**	**3.260**	**2.708**	**2.756**	**2.912**	**2.960**	

Defense Emergency Response funds (DERF) Funds:

Not Applicable

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

1946 SSN-21 Developments: 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. Beginnning in FY05, SEAFAC Range Upgrade funding is included in 1946 (FY05- $1.5M, FY06 - $2.0M, FY07 - $1.5M).

9233 SEAFAC Range Upgrade: The SEAWOLF Class submarine is a multi-mission ship that provides numerous unprecedented submarine performance capabilities such as more capable combat systems, greater weapons 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. To this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement systems capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises of a multi-year effort to design, develop, procure, install and test High Gain Measurement Systems (HGMS) in the Static and Underway Sites at SEAFAC. Efforts to upgrade the Static Site began in FY03 and efforts to upgrade the Underway Site began in FY04. (Note: Please refer to RDT&E,N PE0604561N/1946 R2 and OPN BLI 094200/H1RC08 budget exhibits for associated SEAFAC Upgrade Program funding.)

R-1 SHOPPING LIST - Item No.115

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604561N / SSN-21 Developments	1946 / SSN-21 Developments

B. Accomplishments/Planned Program

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	0.968	0.574	0.000		
RDT&E Articles Quantity					

FY 05 Accomplishment and FY-06 Plan: Conduct follow-on OPEVAL testing for the class.

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	0.175	0.000	0.000		
RDT&E Articles Quantity					

FY-05 Accomplishment: Completion of component shock tests and analysis for CFE and GFE in compliance with Class Plans and DOT&E requirements. Perform shock qualifications for the Global Command and Control System (GCCS) for the Common Submarine Radio Room (CSRR).

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	1.500	2.000	1.500		
RDT&E Articles Quantity					

FY-05 Accomplishment, FY-06, FY-07 Plan: System test and validation, and corrective action efforts are planned for the SEAFAC Static Site. System development, engineering, and integration efforts are planned for the SEAFAC Underway Site.

Note: Please refer to RDT&E,N PE0604561N/9233 R-2 and OPN BLI 094200/H1RC08 P5 budget exhibits for associated SEAFAC Upgrade Program funding.

R-1 SHOPPING LIST - Item No.115

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604561N / SSN-21 Developments	1946 / SSN-21 Developments

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	0.198	0.237	0.663		
RDT&E Articles Quantity					

FY-05 Accomplishment: Re-engineering and correction of SCS and Dry Deck Shelter (DDS) Interface (TIDS Migration). FY06 and FY07 Plan: Re-engineering and correction of Ship Control System (SCS) and acoustic sail deficiencies.

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	0.125	0.067	0.060		
RDT&E Articles Quantity					

FY-05 Accomplishment, FY-06, FY-07 Plan: Re-engineering and correction of interfaces to the External Hydraulic Pump.

	FY 05	FY06	FY07		
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.037		
RDT&E Articles Quantity					

FY07 plan: Technology Insertion for the SSN23.

R-1 SHOPPING LIST - Item No.115

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604561N / SSN-21 Developments	1946 / SSN-21 Developments

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 06 President's Budget	2.972	2.928	3.462
FY 07 President's Budget	2.966	2.878	3.260
Total Adjustments	-0.006	-0.050	-0.202
Summary of Adjustments			
Contract Support Reduction			-0.017
NWCF Civpers Efficiencies			-0.037
N7 Respread of Contractor Support			-0.003
SBIR FY05	-0.008		
Nuclear Physical Security	0.001		
NAVSEA Civiilian Personnel Funding			-0.167
Trusted Foundry (OSD-14)	0.003		
Inflation			0.015
Fuel Price Adjustments			0.005
CIVPERS Pay Raise Rate			0.002
Sec. 8026(f): Federally Funded R&D Centers		-0.006	
Sec. 8125 Revised Economic Assumptions		-0.013	
Congressional Action 1% Reduction		-0.031	
Dept. of Energy Transfer	-0.002		
Subtotal	-0.006	-0.050	-0.202

Schedule:

Not applicable.

Technical:

Not applicable.

R-1 SHOPPING LIST - Item No.115

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604561N / SSN-21 Developments	1946 / SSN-21 Developments

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
(U) SCN #201200	17.079	6.511	0.000	0.000	0.000	0.000	0.000	0.000		8086.156
(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) Delivered 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-05 $2.095 , FY06 - $2.095M, FY07 $3.020 M (Acoustics, NPE, Shock, Test & Evaluation, SEAFAC and Tech Insertion). Contract awards were Oct 2004 for FY05. Contract awards scheduled for Jan 2006 (FY06), and October 2006 (FY07).
Naval Undersea Warfare Center (NUWC) Newport RI - FY-05 $.595K (Test and Evaluation) FY06 - $302K (Test and Evaluation). Contract was awarded on Oct 2004 for FY05 and contract award is scheduled for Jan 2006 for FY06.

R-1 SHOPPING LIST - Item No.115

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME 1946 / SSN-21 Developments								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development		NSWC Carderock/Various		1.500		2.000		1.500					5.000	
Ancillary Hardware Development														
Systems Engineering	SS/CPFF	General Dynam Groton CT	369.671	0.000	Various	0.000	Various	0.000	Various			0.000	369.671	369.671
Systems Engineering	SS/CPFF	NGNN Newport News VA	119.530	0.000	Various	0.000	Various	0.000	Various			0.000	119.530	119.530
Systems Engineering	WR/RC	NSWC Carderock, MD	320.331	0.000	Various	0.095	Various	1.520	Various			3.599	325.545	
Systems Engineering	WR/RC	NUWC Newport, RI	50.337	0.595	Various	0.302	Various	0.000	Various			0.000	51.234	
Systems Engineering	Various	Various	470.629	0.165	Various	0.108	Various	0.110	Various			7.335	478.347	
Licenses													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Product Development			1,330.498	2.260		2.505		3.130				10.934	1,349.327	
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.115

CLASSIFICATION:

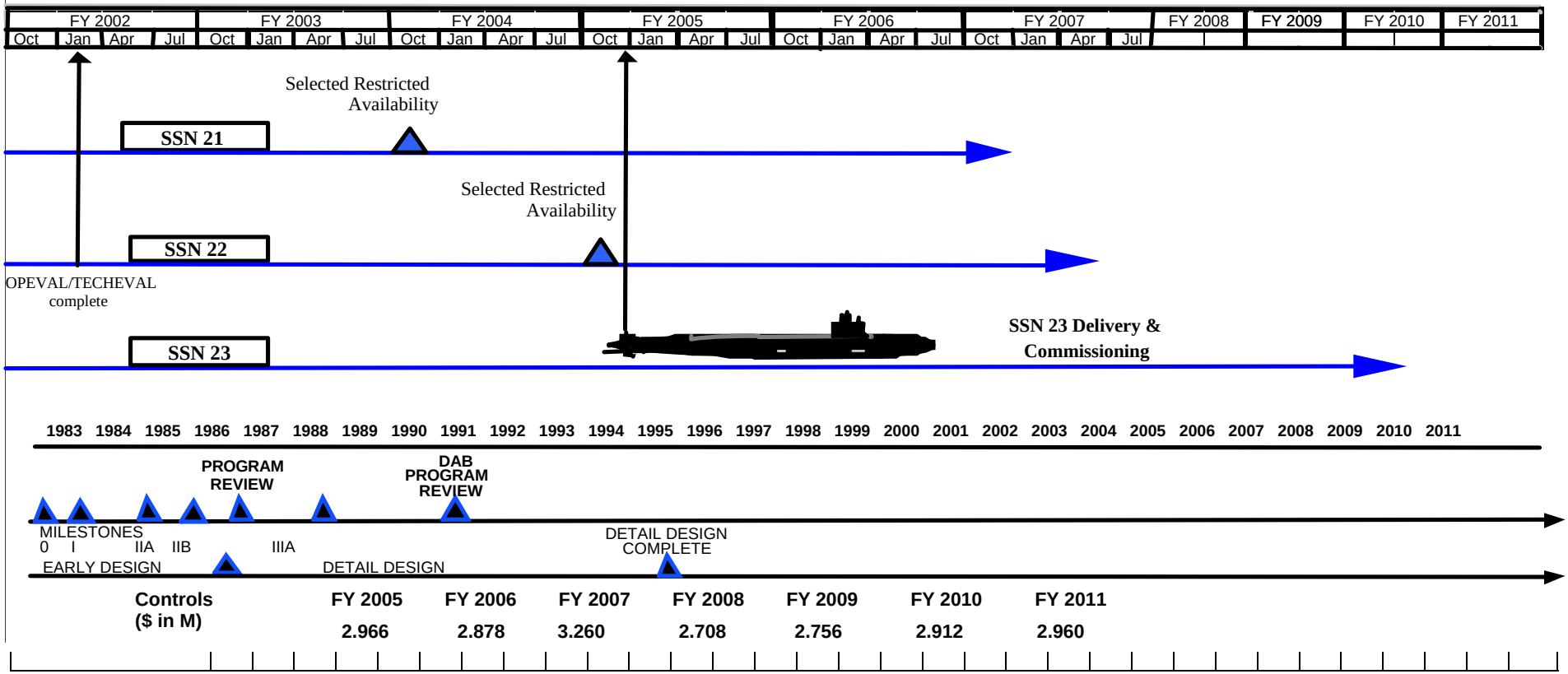
Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME 1946 / SSN-21 Developments								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	96.091	0.000	Various	0.000		0.000				0.000	96.091	
Developmental Test & Evaluation	Various	Various	124.795	0.666	Various	0.333	Various	0.090	Various			0.402	126.286	
Operational Test & Evaluation													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal T&E			289.880	0.666		0.333		0.090				0.402	291.371	
Remarks:														
Contractor Engineering Support													0.000	
Government Engineering Support													0.000	
Program Management Support & ET	Various	Various	48.435	0.000		0.000		0.000				0.000	48.435	
Travel			0.038	0.040		0.040		0.040				0.000	0.158	
Labor (Research Personnel)													0.000	
SBIR Assessment			0.043										0.043	
Subtotal Management			48.516	0.040		0.040		0.040				0.000	48.636	
Remarks:														
Total Cost			1,668.894	2.966		2.878		3.260				11.336	1,689.334	
Remarks:														

R-1 SHOPPING LIST - Item No. 115

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME

Program Timeline



Controls ($ in M)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	2.966	2.878	3.260	2.708	2.756	2.912	2.960

R-1 SHOPPING LIST - Item No.115

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

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE Submarine Tactical Warfare System/0604562N			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**46.389**	**46.024**	**51.656**	**53.578**	**54.681**	**55.945**	**57.081**
0236/SSN Combat Control System Imprvmnt (ENG)		**45.455**	**40.074**	**51.656**	**53.578**	**54.681**	**55.945**	**57.081**
9576/Submarine Maintenance Free Operating Period		**0.934**						
9999/Congressional Adds			**5.950**					

Defense Emergency Response Funds (DERF) Funds: Not Applicable

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program develops Commercial-Off-The-Shelf (COTS) based software and hardware upgrades to integrate improved weapons and tactical control capabilities for multiple submarine Classes (SSN688, 688I, SSGN, SEAWOLF, and VIRGINIA (Post Shakedown Availability)). The hardware upgrades (technology insertions) will be developed on a bi-annual basis to provide improved capability and address COTS obsolescence. The AN/BYG-1 is the combat control system common across all submarine platforms which incorporates tactical control, weapon control and tactical Local Area Network (LAN) functions into a single development program. Funding also accomodates the annual integration of Advanced Processing Builds (APBs) software to both tactical control (APB(T)) and weapon control (APB(W)) subsystems. The tactical control integration effort incorporates the integration of other sensor (ESM, sonar, radar, etc.) inputs to provide a common operation picture and improve situational awareness in an information assurance (IA) compliant environment. The weapon control development effort provides improvements to the weapons control subsystem based on improvements to missiles and torpedos. AN/BYG-1 allows the submarine Navy to rapidly update the ship safety tactical picture, integrates the common tactical picture into the battlegroup, improves torpedo interfaces and provides tactical TOMAHAWK (TOMAHAWK Block IV) capability.

This program also develops and tests a Common Weapon Launcher (CWL), a COTS-based software weapons launch capability for all SSN688/688I and Virginia Class submarines. This upgrade provides a more reliable capability for launching missiles and torpedos from submarines while providing the architecture to support the introduction of the next generation of payloads and sensors.

Funding was provided in Fiscal Year 2005 to explore the feasibility of an alternative concept to the current process for submarine maintenance, training and logistics infrastructure for the AN/BYG-1 system. A submarine maintenance free operating period would minimize the need for maintenance support products, maintenance training/trainers and maintenance and logistics infrastructures by developing a highly available submarine combat system. At-sea maintenance would be by keyboard action only and Original Equipment Manufacturers would provide pier-side maintenance and supply support. This would allow operators to focus on system employment versus system maintenance, while harnessing commercial processes and infrastructure for maintenance training and supply support.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	0236/SSN COMB CONT SYS IMP (ENG)

B. Accomplishments/Planned Program (Cont.)

AN/BYG-1 TI00/02		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.000	0.000	0.000
RDT&E Articles Quantity				

FY05: Continued to resolve DT/OT discrepancies associated with AN/BYG-1 TI00/TI02.

AN/BYG-1 TI04		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		16.500	6.100	0.500
RDT&E Articles Quantity				

FY05: Continued development, integration and test of the next generation AN/BYG-1 (TI04) for SSN 688I/SSN 21 Class submarines scheduled for delivery in FY05.
FY06: Continue development, integration and test of the next generation AN/BYG-1 (TI04) for SSN 688 Class/ SSGN submarines scheduled for delivery in FY06.
FY07: Complete development, integration and test of the next generation AN/BYG-1 (TI04) for 688 Class/SSGN submarines scheduled for delivery in FY07.

AN/BYG-1 TI06		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.083	11.233	11.188
RDT&E Articles Quantity				

FY05: Began engineering development process for selection and protyping of new technologies for TI06.
FY06: Continue development, integration and test of the next generation AN/BYG-1 (TI06) for 688/688I Class submarines scheduled for delivery in FY07.
FY07: Continue development, integration and test of the next generation AN/BYG-1 (TI06) for 688/688I Class submarines scheduled for delivery in FY07.

R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	0236/SSN COMB CONT SYS IMP (ENG)

B. Accomplishments/Planned Program (Cont.)

AN/BYG-1 TI08		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	4.957
RDT&E Articles Quantity				

FY07: Begin engineering development process for selection and protyping of new technologies for TI08 for 688/VA Class/SSGN/SSN 21 Class submarines.

Advanced Processor Builds		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		15.872	15.189	16.871
RDT&E Articles Quantity				

FY05: Began integration of APB(T)-05 and APB(W)-04 into BYG-1. Completed APB-04 integration into AN/BYG-1 baseline.
FY06: Begin integration of APB(T)-06 and APB(W)-05/06 into BYG-1. Complete APB-05 integration into AN/BYG-1 baseline.
FY07: Begin integration of APB(T)-07 and APB(W)-07 into BYG-1. Complete APB-06 integration into AN/BYG-1 baseline.

Testing		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		6.000	3.500	4.300
RDT&E Articles Quantity				

FY05: Planned and began conduct of Development Testing of AN/BYG-1 TI04 on 688I/SSN 21 Class submarines.
FY06: Continue FOT&E for AN/BYG-1 TI04 on SSN 688I Class/SSGN/SSN 21 Class submarines. Complete FOT&E on 688I Class submarines.
FY07: Complete FOT&E for AN/BYG-1 APB-05 on 688 Class/SSGN/SSN 21 Class submarines. Complete FOT&E on SSN 21 and SSGN Class submarines.

R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	0236/SSN COMB CONT SYS IMP (ENG)

B. Accomplishments/Planned Program (Cont.)

Common Weapon Launcher		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	4.052	13.840
RDT&E Articles Quantity				

FY06-FY07: Develop, integrate and test Common Weapon Launcher (CWL).

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	0236/SSN COMB CONT SYS IMP (ENG)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY2006 President Budget	47.497	40.690	55.089
FY2007 President Budget	45.455	40.074	51.656
Total Adjustments	-2.042	-0.616	-3.433
Summary of Adjustments:			
Programmatic/Other Adjustments	-1.042		-0.670
Execution Realignments	-1.000		
Inflation			0.245
Fuel Rates			0.055
Pay Rates			0.035
Rescissions/Reductions		-0.616	-3.098
TOTAL:	-2.042	-0.616	-3.433

Schedule:

- None

Technical:

- None

R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5			0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	0236/SSN COMB CONT SYS IMP (ENG)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN/BA-4 5420	111.226	132.072	86.876	105.309	98.046	106.799	113.303	CONT.	CONT.

Related RDT&E:
PE 0204229N (Tomahawk & 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)

E. ACQUISITION STRATEGY: AN/BYG-1:

- Competitive contracts awarded in Dec 02 which started the development of a combat control system which segregates tactical control from weapons control system.
- This budget integrates APBs developed by the advanced development community.
- Advanced Processing Builds-Tactical (APB (T)) products associated with AN/BYG-1 Release-To- Fleet 4Q 2003, 3Q 2004, 3Q 2006, 3Q 2007, 3Q 2008, and 3Q 2009.
- Advanced Processing Builds-Weapons (APB (W)) integration associated with AN/BYG-1 began FY2005 and will be Released-To-Fleet bi-annually and concurrently with an annual APB(T) product. APB(W) are integrated bi-annually due to increased time for weapon certification and safety issues.
- Follow-On contract for both tactical and weapons control subsystems are planned for award in FY2008.
- This program has been tailored in accordance with the new DoD5000 directive to incorporate annual MDA production reviews.
- A competitive Phase 3 Small Business & Innovative Research (SBIR) contract was awarded for the CWL development.

F. MAJOR PERFORMERS:

Raytheon Portsmouth, RI - Software Development for AN/BYG-1 weapon control subsystem - December 2002.
General Dynamics (GD AIS) Fair Lakes, VA - Software Development for AN/BYG-1 tactical control system - December 2002.
NUWC Newport, RI - Government Engineering
Progeny Systems, VA - CWL, Information Assurance (IA) and Multi-tube Weapon Simulator (MTWS) Developer

R-1 SHOPPING LIST - Item No.116

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM				PROJECT NUMBER AND NAME 0236/SSN COMB CONT SYS IMP (ENG)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Multi-Tube Weapon Simulator	SBIR	Progeny	2.635							0.000	2.635	
AN/BYG-1 Tech Insertion	CPIF/CPAF	Raytheon Portsmouth, RI	5.333	9.306	10/04	8.347	10/05	8.028	10/06	CONT.	CONT.	
AN/BYG-1 Tech Insertion	CPIF/CPAF	General Dynamics (GD AIS)	5.202	8.969	10/04	7.992	10/05	6.304	10/06	CONT.	CONT.	
Government Engineering	WR	NUWC Newport, RI	57.236	2.531	Various	0.869	Various	2.213	Various	CONT.	CONT.	
AN/BYG-1 Tech Insertion	FFRDC	MITRE	1.502	0.475	10/04	0.125	02/06	0.100	10/06	CONT.	CONT.	
AN/BYG-1 Tech Insertion	CPIF/CPAF	ANTEON	4.000	2.000							6.000	
Common Weapon Launcher	CPAF	Progeny				4.052	01/06	13.840			17.892	
COTS Hardware & Software	CPFF	DDL Omni	8.500								8.500	
											0.000	
Subtotal Product Development			112.313	23.281		21.385		30.485		0.000	187.464	
Remarks:												
Development Support Equipment											0.000	
APB Software Integration	CPIF/CPAF	Raytheon Portsmouth, RI	4.970	6.428	10/04	6.152	10/05	6.833	10/06	CONT.	24.383	
APB Software Integration	CPIF/CPAF	General Dynamics (GD AIS)	4.847	6.270	10/04	6.001	10/05	6.664	10/06	CONT.	23.782	
APB Software Integration	WR	NUWC Newport, RI	2.454	3.174	Various	3.036	Various	3.374	Various	CONT.	12.038	
											0.000	
Software Development	Various	Various	36.679								36.679	
											0.000	
Subtotal Support			48.950	15.872		15.189		16.871		0.000	96.882	
Remarks:												

R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM				PROJECT NUMBER AND NAME 0236/SSN COMB CONT SYS IMP (ENG)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	9.212	3.750	10/04	2.350	10/05	2.700	10/06	CONT.	CONT.	
Operational Test & Evaluation	Various	Various	7.769	2.250	10/04	1.150	10/05	1.600	10/06	CONT.	CONT.	
Test & Evaluation	Various	Various	1.295								1.295	
.											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			18.276	6.000		3.500		4.300		0.000	32.076	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	CPFF	EG&G Arlington, VA	8.731	0.302	10/04	0.000		0.000		CONT.	CONT.	
Travel	PD	NAVSEA Arlington, VA	0.350							CONT.	0.350	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			9.081	0.302		0.000		0.000		0.000	9.383	
Remarks:												
Total Cost			188.620	45.455		40.074		51.656		0.000	325.804	
Remarks:												

R-1 SHOPPING LIST - Item No. 116

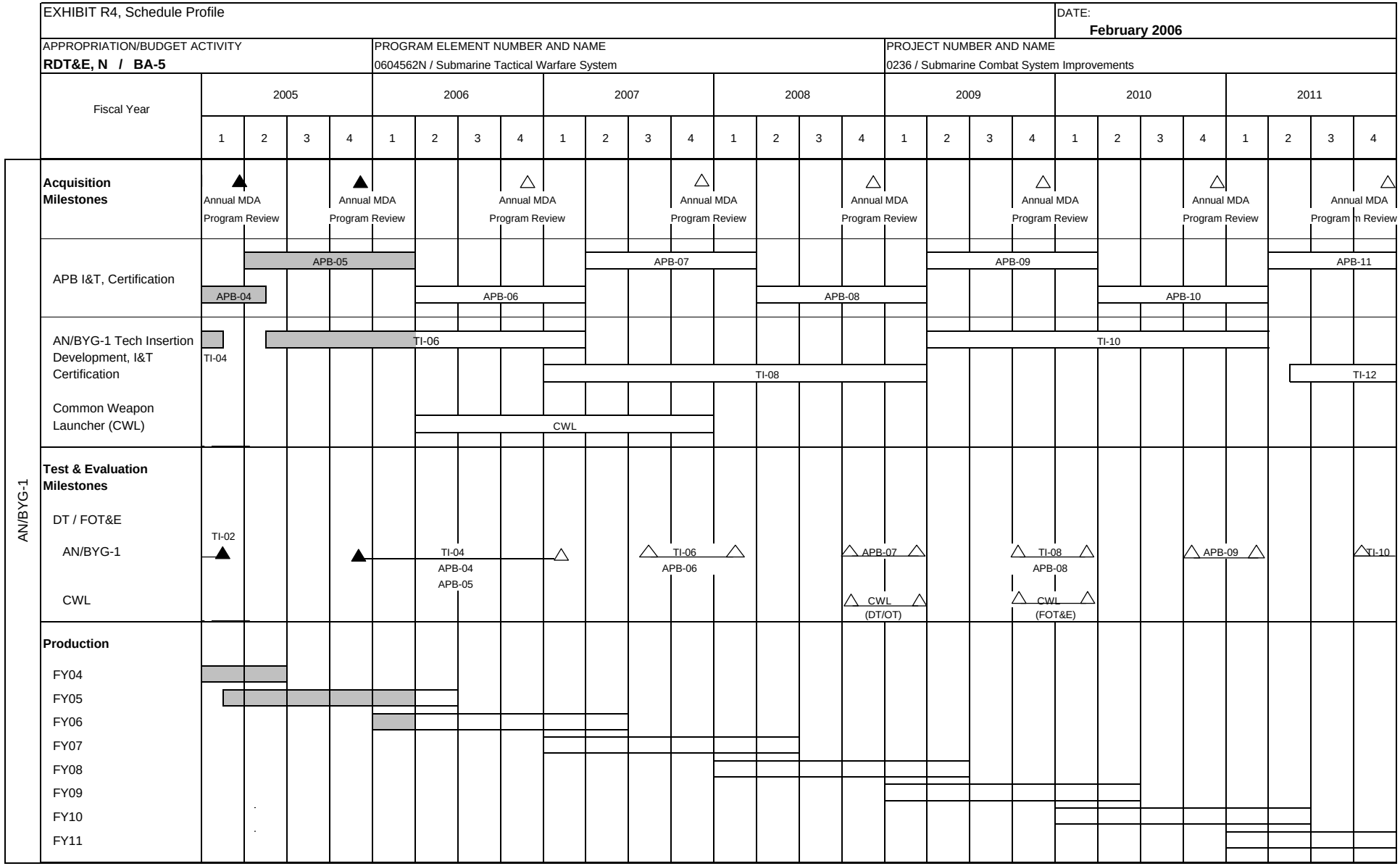
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604562N / Submarine Tactical Warfare System

PROJECT NUMBER AND NAME: 0236 / Submarine Combat System Improvements



R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604562N / Submarine Tactical Warfare System				PROJECT NUMBER AND NAME 0236 / Submarine Combat System Improvements		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
AN/BYG-1 (TI04) - Development	1Q						
AN/BYG-1 (TI06/APB05) - MDA Review	4Q						
AN/BYG-1 - APB05 Integration & Test, Certification	2Q - 4Q	1Q					
AN/BYG-1 (TI06) - Development	2Q - 4Q	1Q - 4Q	1Q				
AN/BYG-1 - TI04 DT/OT	4Q	1Q - 4Q	1Q				
AN/BYG-1 (APB06) - MDA Review		4Q					
AN/BYG-1 - APB06 Integration & Test, Certification		2Q - 4Q	1Q				
Common Weapon Launcher - Development		2Q - 4Q	1Q - 4Q				
AN/BYG-1 (TI08/APB07) - MDA Review			4Q				
AN/BYG-1 - APB07 Integration & Test, Certification			2Q - 4Q	1Q			
AN/BYG-1 - APB06 DT/OT			3Q - 4Q	1Q			
AN/BYG-1 (TI08) - Development			1Q - 4Q	1Q - 4Q	1Q		
AN/BYG-1 - TI06 DT/OT			3Q - 4Q	1Q			
CWL DT/OT				4Q	1Q		
AN/BYG-1 (APB08) - MDA Review				4Q			
AN/BYG-1 - APB08 Integration & Test, Certification				2Q - 4Q	1Q		
AN/BYG-1 (TI10/APB09) - MDA Review					4Q		
AN/BYG-1 - APB09 Integration & Test, Certification					2Q - 4Q	1Q	
AN/BYG-1 - APB07 DT/OT				4Q	1Q		
AN/BYG-1 (TI10) - Development					2Q - 4Q	1Q - 4Q	1Q
AN/BYG-1 - TI08 DT/OT					4Q	1Q	
CWL FOT&E					4Q	1Q	
AN/BYG-1 (APB10) - MDA Review						4Q	
AN/BYG-1 - APB10 Integration & Test, Certification						2Q - 4Q	1Q
AN/BYG-1 (TI12/APB11) - MDA Review							4Q
AN/BYG-1 - APB11 Integration & Test, Certification							2Q - 4Q
AN/BYG-1 - APB09 DT/OT						4Q	1Q
AN/BYG-1 (TI12) - Development							2Q - 4Q

R-1 SHOPPING LIST - Item No. 116

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604562N/SUBMARINE TACTICAL WARFARE SYSTEN	9999/Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
1950C				
Submarine Open Architecture Technology Insertion	2.500			

FY06: Re-engineer and migrate unique military standard sensors, electronics, and software system components to common COTS based architectures and technologies. Identify and migrate high risk/high reward components of AN/BYG-1, as well as identify opportunities for commonality across sub and surface ship electronic subsystems.

	FY 06			
9850N				
Automated Submarine Command and Control Center	1.750			

Transition weapons launch technology efforts required to accelerate hardware and software production, integration and installation of Weapon Launch System Technology Refresh Improvements for both Virginia Class and In-Service Submarines.

	FY 06			
9851N				
Bandwidth Management for Distance Support	1.700			

Develops common software applications and tools that will optimize the bandwidth allocated to Distance Support and the Afloat Integrated Learning Environment (AILE).

R-1 SHOPPING LIST - Item No. 116

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAV BA-5**					R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**118.644**	**57.424**	**72.055**	**57.237**	**46.151**	**33.828**	**87.686**
1803 / Ship Contract Design		**3.610**	**11.364**	**6.471**	**4.730**	**4.756**	**4.754**	**4.717**
2198 / Life Fire Test and Evaluation		**0.000**	**2.703**	**1.445**	**0.000**	**0.000**	**0.000**	**0.000**
2301 / CVN-77 Design		**0.010**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
2465 / LHA Replacement		**43.022**	**21.861**	**34.522**	**33.594**	**15.097**	**11.240**	**16.979**
3108 / CVN (X) Total Ship Integration		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**57.861**
3133 / Sea Base to Shore Connector		**0.000**	**0.000**	**0.000**	**9.466**	**20.001**	**9.946**	**2.019**
3134 / Intratheater Connectors (Contract Design)		**0.000**	**1.912**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
4007 / CVN 21 LFT&E		**8.447**	**7.420**	**7.499**	**2.593**	**6.297**	**7.888**	**6.110**
4008 / CVN 21 Total Ship Integration		**61.639**	**9.564**	**22.118**	**6.854**	**0.000**	**0.000**	**0.000**
9578 / Integrated Modernization Environment		**1.916**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9999 / Congressional Add		**0.000**	**2.600**	**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, 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 1803 Ship Contract Design			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**3.610**	**11.364**	**6.471**	**4.730**	**4.756**	**4.754**	**4.717**
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. This project also funds the research, development, test, and evaluation of shipyard workload and resource management tools.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	Ship Contract Design/LFT&E 0604567N	1803 Ship Contract Design

B. Accomplishments/Planned Program

Cruiser Modernization Program		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	11.364	6.471
RDT&E Articles Quantity				

Continued 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 lead ship procurement award.

Sea Base Connector		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.660	0.000	0.000
RDT&E Articles Quantity				

This profile provides for pre-systems acquisition efforts to include: Functional Area Analysis, Concept Studies, the development of an Initial Capabilities Document (ICD) leading into the Analysis of Alternatives that supports the Capabilities Development phase for Systems Acquisition and Milestone A.

ARGOS		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.950	0.000	0.000
RDT&E Articles Quantity				

This profile provides for research, development, test, and evaluation of a shipyard workload and resource management tool.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	1803 Ship Contract Design	

C. PROGRAM CHANGE SUMMARY:

	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	1.696	11.538	6.465
FY07 President's Budget:	3.610	11.364	6.471
Total Adjustments	1.914	-0.174	0.006
Summary of Adjustments			
SBIR Reductions	-0.087		
Congressional Action	1.992	-0.174	
Cancelled Accounts	-0.002		
Other misc. changes:	0.011		0.006
Programmatic Changes			
Subtotal	1.914	-0.174	0.006

Schedule:

CG Modernization procurement contract awards reflect Baseline 2 lead ship funded for long lead equipment procurement in FY06 and modernization availability in FY08. Baseline 3 and Baseline 4 lead ships are funded for procurement in the outyears. Design efforts funded in RDT&E,N leading to procurement contract awards have been scheduled accordingly.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	1803 Ship Contract Design	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN 096000 CG Modernization	0	125	234	275	289	400	477	1,698	3,498
WPN 422300 CG Modernization	0	5	18	23	45	53	54	187	386
Sea Base Connector									
RDT&E 0603564 3127	0.000	14.198	13.380	13.099	0.000	0.000	0.000	0.000	40.677
RDT&E 0604567 3133	0.000	0.000	0.000	9.466	20.001	9.946	2.019	0.000	41.432
SCN 0204411N 5112	0.000	0.000	0.000	0.000	0.000	98.000	207.080	0.000	305.080

E. ACQUISITION STRATEGY:

N/A

F. MAJOR PERFORMERS:

N/A

CLASSIFICATION:

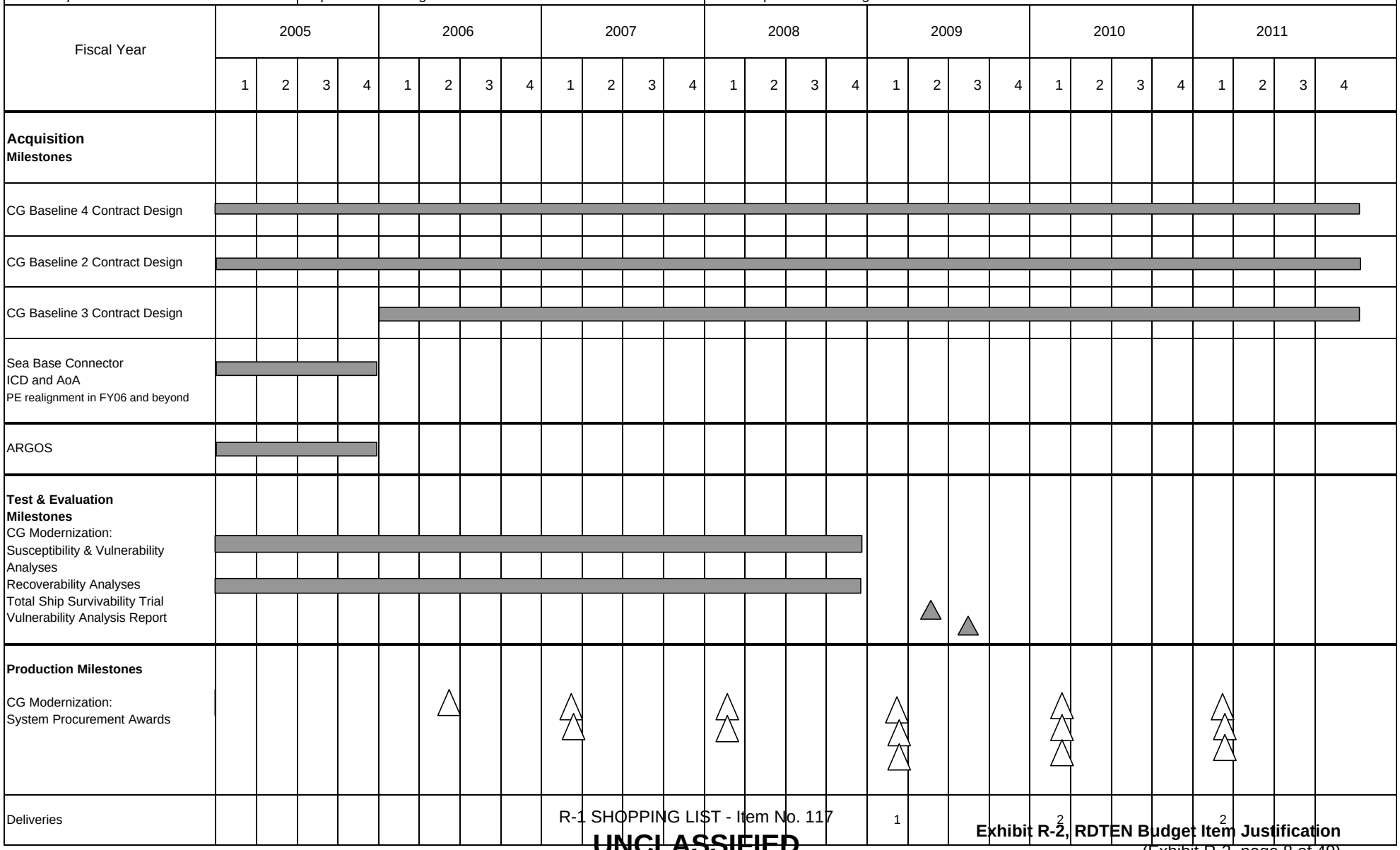
Exhibit R-3 Cost Analysis (page 1)													DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 1803 Ship Contract Design									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
CG Mod Class Design/Integration	SS/CPAF	Northrop Grumman, Pascagoula, MS				0.000		8.551	03/06	5.796	11/06		14.347		
CG Mod Electronic Systems Eng	C/CPAF	LMGES, Moorestown, NJ				0.000		2.813	03/06	0.675	11/06		3.488		
S B Connector Conc. Dev./AoA	C/CPFF	TBD				1.660	12/04						1.660		
ARGOS Evaluation	C/CPFF	Navy Systems Support Group, NNSY				1.950	09/05						1.950		
													0.000		
													0.000		
													0.000		
Subtotal Product Development			0.000			3.610		11.364		6.471		0.000	21.445		
Remarks:															
HLCAC Government Engineering Spt	MISC	NSWC DD: Panama City											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:															

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT Ship Contract Design LFT&E 0604567N			PROJECT NUMBER AND NAME 1803 Ship Contract Design									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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:														
HLCACTravel													0.000	
													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		3.610		11.364		6.471		0.000	21.445	
Remarks:														

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design/LFT&E 0604567N	PROJECT NUMBER AND NAME 1803 Ship Contract Design	



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 1803 Ship Contract Design			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Cruiser Moderinization								
Continue CG Baseline 4 Engineering		1Q	1Q	1Q	1Q	1Q	1Q	1Q
Continue CG Baseline 2 Engineering		1Q	1Q	1Q	1Q	1Q	1Q	1Q
Continue CG Baseline 3 Engineering			1Q	1Q	1Q	1Q	1Q	1Q
Initiate CG Susceptibility and Vulnerability Analyses								
Initiate CG Recoverability Analyses								
CGM Procurement Award								
CGM Procurement Award			1Q					
CGM Procurement Award				1Q				
CGM Procurement Award				1Q				
CGM Procurement Award					1Q			
CGM Procurement Award					1Q			
CGM Procurement Award						1Q		
CGM Procurement Award						1Q		
CGM Procurement Award							1Q	
CGM Procurement Award							1Q	
CGM Procurement Award							1Q	
CGM Procurement Award								1Q
CGM Procurement Award								1Q
CGM Procurement Award								1Q
Sea Base Connector								
Initiate ICD		1Q						
ARGOS		1Q						

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 2198 LFT&E			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.000**	**2.703**	**1.445**	**0.000**	**0.000**	**0.000**	**0.000**
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 inofrmation required to fulfill statutory and programmatic requirements for combat effective naval warfare for the Cruiser Modernization Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	2198 LFT&E

B. Accomplishments/Planned Program

Cruiser Modernization Program		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	2.703	1.445
RDT&E Articles Quantity				

Perform suseptibility, vulnerability, and recoverability analyses for the Cruiser Modernization Program. Continue planning and preparations for the Total Ship Survivability Trial planned for FY09. Conduct Survivability Trial and prepare Vulnerability Analysis Report in FY09.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	2198 LFT&E

C. PROGRAM CHANGE SUMMARY:

	FY 2005	FY 2006	FY 2007
President's Budget FY06	0.000	2.745	1.563
President's Budget FY07	0.000	2.703	1.445
Total Adjustments	0.000	-0.042	-0.118
Summary of Adjustments			
SBIR Reductions			
Congressional Action		-0.042	
Cancelled Accounts			
Miscellaneous Adjustments			-0.118
Programmatic Changes			
Subtotal	0.000	-0.042	-0.118

Schedule:

CG Modernization 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 FY09.

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	2198 LFT&E

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN 096000 CG Modernization	0	125	234	275	289	400	477	1,698	3,498
WPN 422300 CG Modernization	0	5	18	23	45	53	54	187	386

E. ACQUISITION STRATEGY:

Coast wide competitive procurement.

F. MAJOR PERFORMERS:

TBD

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 2198 LFT&E								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
													0.000	
													0.000	
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													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:														

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT Ship Contract Design/LFT&E 0604567N			PROJECT NUMBER AND NAME 2198 LFT&E								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CG Modernization LFT&E	MISC	NRL/Grayhawk	4.213			0.000		2.703	03/06	1.445	10/06	0.000	8.361	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal T&E			4.213			0.000		2.703		1.445		0.000	8.361	
Remarks:														
													0.000	
													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			4.213			0.000		2.703		1.445		0.000	8.361	
Remarks:														

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design/LFT&E 0604567N	PROJECT NUMBER AND NAME 2198 LFT&E	

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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																												
Test & Evaluation Milestones Susceptibility & Vulnerability Analyses																												
Recoverability Analyses																												
Total Ship Survivability Trial Vulnerability Analysis Report																		▲	▲									
Production Milestones CG Modernization System Procurement Awards						△				△				△				△				△				△		
Deliveries																	1								2			

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT Ship Contract Design/LFT&E 0604567N				PROJECT NUMBER AND NAME 2198 LFT&E			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Continue CG Susceptibility and Vulnerability Analyses		1Q	1Q	1Q	1Q			
Continue CG Recoverability Analyses		1Q	1Q	1Q	1Q			
CG Total Ship Survivability Trial						2Q		
CG Vulnerability Analysis Report						3Q		

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604567N Ship Contract Design / LFT&E				PROJECT NUMBER AND NAME 2465 LHA(R)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**43.022**	**21.861**	**34.522**	**33.594**	**15.097**	**11.240**	**16.979**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The mission of the LHA Replacement (R) Program is to provide a functional replacement for the LHA 1 Class ships which will reach the end of their extended service lives in consecutive years beginning in FY2011, to ensure that the Amphibious Fleet remains capable of Expeditionary Strike Warfare in support of the Navy and Marine Corp's Global Concept of Operations (CONOPS) well into the 21st century and to provide for an affordable and sustainable amphibious ship development program. LHA(R) ships will provide forward presence and power projection as an integral part of Joint, interagency, and multi-national maritime expeditionary forces. Additionally, they will be designed to operate for sustained periods in transit to and operations in an Amphibious Objective Area to include the embarkation, deployment, and landing of a Marine Landing Force in an assault by helicopters and tilt rotors supported by Joint Strike Fighters.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604567N Ship Contract Design / LFT&E	2465 LHA(R)

B. Accomplishments/Planned Program

LHA(R) Lead Ship		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		38.322	5.552	9.923
RDT&E Articles Quantity				

Complete requirements trades and feasibility studies toward a more aviation focused LHA(R) Lead Ship configuration. Continue resolution of engineering/design issues and development of the Preliminary and Contract Designs. Continue improvements targeted at reducing operating and support costs. Continue warfare system design refinement. Resolve low confidence areas in analytical models for Live Fire Test and Evaluation (LFT&E) concerns and continue the LFT&E surrogate test program.

LHA(R) Follow Ship		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.700	16.309	24.599
RDT&E Articles Quantity				

Continue the integration of design improvements into the Total Ship Design. Continue developing functional and system level design and transition these efforts into the total ship engineering package that forms the basis for the solicitation package for the detail design and construction of the ships. Tasks to include analysis and engineering to support ship design management; design integration; hull systems; machinery; warfare systems; command, control, communication, computers, intelligence (C4I) systems; human system integration; mission systems; aviaition systems and total ship survivability. Tasks will also include LFT&E analysis of surrogate test data and determining feasibility of incorporating lessons learned on LHA(R) Lead or Follow Ship.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	0.000
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604567N Ship Contract Design / LFT&E	2465 LHA(R)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 06 Pres. Controls	43.753	22.194	46.451
FY 07 Pres. Controls	43.022	21.861	34.522
Total Adjustments	-0.731	-0.333	-11.929
Summary of Adjustments			
Small Business Innovation Research	-0.656		
General provisions	-0.020	-0.333	
Trusted Foundry	0.000		
Cancelled Account	-0.055		
Programmatic changes			-11.000
Other misc. changes			-0.929
Subtotal	-0.731	-0.333	-11.929

Schedule:

Contract design and Live Fire Test and Evaluation (LFT&E) efforts to support LHA(R) Lead Ship shipbuilding contract award in FY07 and LHA(R) Follow Ship shipbuilding contract award in FY10.

Technical:

The Assistant Secretary of the Navy for Research, Development and Acquisition (ASN RDA) initiated program changes resulting in a Joint memorandum for LHA(R) Lead Ship requirements. The Joint memorandum was dated APR 30 2004 and signed by the Chief of Naval Operatons (CNO), Commandant of the Marine Corps, and ASN (RDA) . Lead Ship requirement is an LHD 8 variant with an aviation focus.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604567N Ship Contract Design / LFT&E	2465 LHA(R)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
SCN 304100 LHA(R) Lead Ship	149.3	148.3	1,135.9	1,380.0	0.0	0.0	0.0	0.0	2,813.5
SCN 304100 LHA(R) Lead Ship (Outfitting / Post Delivery)	0.0	0.0	0.0	0.0	14.5	4.7	29.6	33.6	82.4
SCN 304100 LHA(R) Follow Ship	0.0	0.0	0.0	0.0	0.0	2,003.6	1,728.0	0.0	3,731.6
SCN 304100 LHA(R) Follow Ship (Outfitting / Post Delivery)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	87.4	87.4

E. ACQUISITION STRATEGY:

Acquisition strategy signed February 7, 2005 approved stragety for sole source to Northrup Grumman Ship Systems (NGSS) to incorporate previous LHD engineering, design and producibility lessons-learned into LHA(R). Advanced Procurement contract for Long Lead-Time Material (LLTM) procurement and engineering support awarded July 05 with continuation of these efforts in FY06 prior to award of Detail Design and Construction (DD&C) contract in early FY07. Advance Procurement contract will be subsumed by FPI DD&C contract.

F. MAJOR PERFORMERS:

NGSS - Funds have been provided for preliminary and contract design including ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design.

CSC Corp. - Funds have been provided for preliminary and contract design. Specific efforts include ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design.

NSWC, Carderock (Bethesda, MD) - Funds have been provided for preliminary and contract design. Specific efforts include ship design management, design integration, hull systems engineering, machinery control, human system integration, mission systems and total ship survivability analysis for preliminary and contract design. Additionally, the activity will function as Live Fire Test and Evaluation (LFT&E) manager, perform/conduct surrogate tests and develop survivability analysis.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604567N Ship Contract Design / LFT&E			PROJECT NUMBER AND NAME 2465 LHA(R)								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development														
Ancillary Hardware Development														
Component Development														
Ship Design	Various	Various	76.971	33.302	10/04	12.009	10/05	19.299	10/06					
Ship Suitability														
Systems Engineering	Various	Various												
Training Development														
Licenses														
Tooling														
GFE														
Award Fees														
Subtotal Product Development			76.971	33.302		12.009		19.299						
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						
Remarks:														

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604567N Ship Contract Design / LFT&E			PROJECT NUMBER AND NAME 2465 LHA(R)									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Reimb.	Various	0.000	0.834	10/04	0.780	10/05	0.205	10/06					
Operational Test & Evaluation	Reimb.	COMOPTEVFOR	0.000	0.520	10/04	0.600	10/05	0.923	10/06					
Live Fire Test & Evaluation	Reimb.	Various	15.720	4.166	10/04	4.172	10/05	8.795	10/06					
Test Assets														
Tooling														
GFE														
Award Fees														
Subtotal T&E			15.720	5.520		5.552		9.923						
Remarks:														
Contractor Engineering Support														
Government Engineering Support														
Program Management Support				4.140	Various	4.230	Various	5.260	Various					
Travel				0.060	Various	0.070	Various	0.040	Various					
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			0.000	4.200		4.300		5.300						
Remarks:														
Total Cost			92.691	43.022		21.861		34.522						
Remarks:														

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604567N Ship Contract Design / LFT&E

PROJECT NUMBER AND NAME: 2465 LHA(R)

Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	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																																
Overarching Integrated Product Team Review			Advance Procurement			Milestone B				Follow Ship Program Review																						
Detailed Design - Lead Ship																																
Feasibility Studies - Follow Ship																																
Trade Studies and Point Design - Follow Ship																																
Milestones						Milestone B				Program Review								Program Review														
Preliminary/ Contract Design - Follow Ship																																
Test & Evaluation Milestones																																
Developmental Testing		DT - A												DT - B1																		
Vulnerability Assessment Report (VAR)																VAR #1																
Survivability Assessment Record (SAR)																																
Surrogate Testing																																
TEMP Update																																
Production Milestones																																
Shipbuilding Contract Award - Lead Ship																																
Lay Keel - Lead Ship																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604567N Ship Contract Design / LFT&E				PROJECT NUMBER AND NAME 2465 LHA(R)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Overarching Integrated Product Team	3Q	2Q	1Q					
Detail Design - Lead Ship		2Q-4Q	1Q-4Q	1Q-4Q				
Feasibility Studies - Lead Ship	3Q-4Q	1Q						
Trade Studies and Point Design - Follow Ship	1Q-3Q							
Milestone B / Program Review		2Q	1Q					
Program Review					1Q			
Preliminary/ Contract Design - Follow Ship		2Q-4Q	1Q-4Q	1Q-4Q	1Q			
Developmental Testing (A)	1Q-4Q	1Q						
Developmental Testing (B1)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Vulnerability Assessment Report (VAR)	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Vulnerability Assessment Report (VAR #1)				3Q				
Survivability Assessment Report (SAR)	1Q-4Q	1Q-3Q						
Surrogate Testing	1Q-4Q	1Q-2Q						
Update TEMP					1Q			
Shipbuilding Contract Award - Lead Ship			1Q					
Lay Keel - Lead Ship				3Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA-5**	PROGRAM ELEMENT NUMBER AND NAME **PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**				PROJECT NUMBER AND NAME **3134 Intratheater Connectors (Contract Design)**			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**0.000**	**1.912**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Intratheater Connectors - concept studies in support of intratheater connectors. These ship systems will be capable of self-deploying to the theater of operations, provide the air and surface means to move forces and supplies over operational distances within a theater. Intratheater connectors provide the JFC a mobility asset that enables rapid force closure to the sea base from advanced bases, movement of logistics, ship-to-ship and ship-to-shore replenishment, and in appropriate threat environments, the maneuver of forces to the shore.

The primary missions approved by the Services and defined in the Initial Capabilities Document (ICD) include the following:
- Global War on Terror (GWOT)/Theater Security Cooperation Program (TSCP)
- Intratheater Operational/Littoral Maneuver
- Force Closure/Seabasing Support

The Intratheater connector will have the following characteristics:
- Moderate payload capacity (500 to 1,000 short tons)
- Shallow draft
- Self deploying and sustaining for short periods
- Cross-theater laden ranges

FY07 through FY11 requirements realigned to PE 0208058N, Project 3134

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**	**DATE:** **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTEN/BA-5	**PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**	**3134 Intratheater Connectors (Contract Design)**

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.912	
RDT&E Articles Quantity			

Program Acquisition Efforts for Intratheater Connector - including pre-acquisition studies, Capability Development Document preparation, milestone A preparation, Test and Evaluation Master Plan (TEMP) development and performance specification preparation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**	**DATE:** **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTEN/BA-5	**PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**	**3134 Intratheater Connectors (Contract Design)**

C. PROGRAM CHANGE SUMMARY:

Funding:	**FY 2005**	**FY 2006**	**FY 2007**
President's Budget 2006	0.000	1.941	2.247
President's Budget 2007	0.000	1.912	0.000
Total Adjustments	0.000	-0.029	-2.247
General provisions	0.000	-0.029	0.000
Realigned to PE 0208058N starting in FY07	0.000	0.000	-2.247
Total Adjustment	0.000	0.000	-2.247

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**	**DATE:** **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA-5**	PROGRAM ELEMENT NUMBER AND NAME **PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**	PROJECT NUMBER AND NAME **3134 Intratheater Connectors (Contract Design)**

D. Other Program Funding Summary

	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
PE 0204228N SCN/BLI3043 Intratheater Connector Surface Support					**197.68**	**174.151**	**181.788**	**TBD**	**553.619**

(U) Related RDT&E:

PE 0603564N/SHIP PRELIM DESIGN & FEASIBILITY STUDIES/3131 Intratheater Connectors

PE 0208058N (U)JOINT HIGH SPEED VESSEL (JHSV)/ 3131 Intratheater Connectors (Concept Studies)/ 3134 Intratheater Connectors (Contract Design)

E. Acquisition Strategy:

Feasibility studies will be conducted to determine the best designs to meet new Joint Service requirements.

F. Major Performers:

Field Activities & Locations - Work Performed
NSWC, Carderock, MD - Concept development and engineering support
SPAWAR Systems Center, Charleston SC - Concept development and engineering support
NAVAIR Pax River, MD - Concept development and engineering support

Contractors & Locations - Work Performed
CSC, Washington, DC - Engineering Support
ALION-JJMA, Washington, DC - Program Support

Universities & Locations - Work Performed

CLASSIFICATION:

FY 2007 PRESIDENT'S BUDGET SUBMISSION			DATE:
Exhibit R-3 Cost Analysis (page 2)			**February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT		PROJECT NUMBER AND NAME
RDTEN/BA-5	**PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**		**3134 Intratheater Connectors (Contract Design)**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	MAC	ALION-JJMA				0.278	2Q				0.278	
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		0.278		0.000		0.000	0.278	

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:

CLASSIFICATION:

FY 2007 PRESIDENT'S BUDGET SUBMISSION								DATE:				
Exhibit R-3 Cost Analysis (page 2)								**February 2006**				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT						PROJECT NUMBER AND NAME				
RDTEN/BA-5		**PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**						**3134 Intratheater Connectors (Contract Design)**				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	MAC	CSC				0.615	2Q				0.615	
Government Engineering Support	WX	Various				0.109					0.109	
Program management Support	MAC	ALION-JJMA				0.910	2Q				0.910	
Travel											0.000	
Subtotal Management			0.000	0.000		1.634		0.000		0.000	1.634	
Remarks:												
Total Cost			0.000	0.000		1.912		0.000		0.000	1.912	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA-5**	PROGRAM ELEMENT NUMBER AND NAME **PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**	PROJECT NUMBER AND NAME **3134 Intratheater Connectors (Contract Design)**

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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						MS A							MS B															
Source Selection Award Lead Vessel																												

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail	**FY 2007 PRESIDENT'S BUDGET SUBMISSION**					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA-5**	PROGRAM ELEMENT **PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E**				PROJECT NUMBER AND NAME **3134 Intratheater Connectors (Contract Design)**			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone A		3Q						
Milestone B				1Q				
Award Lead Ship				2Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NAME AND NUMBER **Ship Contract Design/LFT&E PE 0604567N**				PROJECT NAME AND NUMBER **CVN 21 LFT&E 4007**		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**8.447**	**7.420**	**7.499**	**2.593**	**6.297**	**7.888**	**6.110**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses LFT&E efforts for CVN 78 and CVN 79. 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 mission threatening vulnerabilities early in the development process when there is time to take corrective action. The CVN 21 LFT&E Management Plan details the efforts, through testing and engineering analyses, to address potential design vulnerabilities.

The high unit cost of CVN 21 class and its shipboard systems preclude consideration of destructive testing of a full-up CVN 21 class hull with threats of the type that might be expected in combat. Consequently, the Navy must rely on other means to determine that CVN 21 class ships 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 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, prior to the award of the construction contract, descriptive detail of CVN 21 will increase and so will the ability to evaluate its survivability.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 LFT&E 4007**

B. Accomplishments/Planned Program

	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	**8.447**	**7.420**	**7.499**
RDT&E Articles Quantity			

(U) FY05: Resolved low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. This includes continuation of testing underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests, and vulnerability modeling of the CVN 78 for Vulnerability Assessment Report #3 (VAR 3). Initiated survivability modeling improvements. Conducted weapon debris full scale tests and analyses. Conducted underwater explosion and recoverability surrogate tests on the Large Test Asset (LTA). Continued with analytical bridge work between scaled model test results and analytical correlations. Updated and developed new Ship Vulnerability Models (SVM). Prepared, constructed and tested full and scaled surrogate model targets as required by TEMP 1610 and the LFT&E Management Plan. Conducted analyses and tests on ex-SHADWELL to evaluate ordnance in CVN 78 class representative locations, to review hangar bay fire spread, to determine desmoking and dewatering capabilities, data network system, and to assess fire main vulnerability. Continued intensive vulnerability modeling of CVN 78 for Vulnerability Assessment Report #3. Continued survivability model improvements to support CVN 78 vulnerability assessment. Began analyses of CVN 21 class vulnerability for VAR 3. In support of ORD vulnerability requirements testing, began planning efforts & begin representative CVN 21 class fire and smoke spread tests, and main drainage analyses; assess designed passive damage control features and conduct recoverability modeling tests.

(U) FY06: Conduct susceptibility assessment of the CVN 21 class. Continue to 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 underwater protection features (innerbottom structure), and conduct of recoverability tests. Continue survivability modeling improvements. Continue with analytical bridge work between scaled model test results and analytical correlations. Continue update and develop new SVM/Advanced Survivability Assessment Program (ASAP) models. Prepare, construct and test full and scaled surrogate model targets as required by TEMP 1610 and the LFT&E Management Plan. Refurbish Flight Deck Model. Finalize vulnerability analyses and drafting of Vulnerability Assessment Report #3. Continue survivability model improvements to support CVN 21 class vulnerability assessment. In support of ORD vulnerability requirements testing, conduct representative CVN 21 class fire and smoke spread tests, flight deck fire tests, and main drainage tests; conduct test of the passive damage control features and conduct recoverability modeling tests.

(U) FY07: Continue susceptibility assessment of the CVN 21 class. Continue to resolve low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. This includes testing Damage Prevention Protection System, System B components, & continuation of testing underwater protection features (innerbottom structure), and conduct of recoverability tests, and deliver the CVN 21 Vulnerability Assessment Report #3 . Initiate survivability modeling improvements. Continue with analytical bridge work between scaled model test results and analytical correlations. Update and develop new SVM models Prepare, construct and test full and scaled surrogate model targets as required by TEMP 1610 and the LFT&E Management Plan. Conduct Flight Deck testing and analysis.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 LFT&E 4007**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget Controls	8.490	7.533	7.576
FY07 President's Budget Controls	8.447	7.420	7.499
Total Adjustments	-0.043	-0.113	-0.077
Summary of Adjustments			
Rescissions	-0.053	-0.113	-0.116
Programmatic Changes	0.010		0.039
	-0.043	-0.113	-0.077

Schedule:

The CVN 78 Basic Construction contract will be awarded in FY08 with delivery in FY15.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 LFT&E 4007**

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 200100 Carrier Replacement Program	623.073	619.097	784.143	3,481.631	3,858.384	1,679.100	541.455	Cont.	Cont.
PE 0603512N Carrier System Development	161.539	168.283	153.894	117.125	106.872	164.210	98.324	Cont.	Cont.
PE 0603570N Adv. Nuclear Power Systems	167.951	165.845	174.648	165.165	157.045	137.766	109.429	Cont.	Cont.

*Note: Only a portion of the funding in PE 0603570N and 0603512N is included in the CVN 21 Program

E. ACQUISITION STRATEGY:

The CVN 78 will be the first ship of the CVN 21 class of aircraft carriers. Due to the length and cost of construction, each carrier will be contracted for separately. The CVN 78 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, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.

F. MAJOR PERFORMERS:

NSWC Carderock Maryland

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

Exhibit R-3 Cost Analysis

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: **Ship Contract Design/LFT&E PE 0604567N**

PROJECT NUMBER AND NAME: **CVN 21 LFT&E 4007**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	WX	NSWC Carderock, MD	15.378	7.435	10/04	6.420	10/05-02/06	6.499	12/06	Continuing	Continuing	
	CPAF	NGNN	2.292	1.012	10/04	1.000	01/06	1.000	12/06	Continuing	Continuing	
Subtotal T&E			17.670	8.447		7.420		7.499		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	0.000	
Remarks:												
Total Cost			17.670	8.447		7.420		7.499		Continuing	Continuing	
Remarks:												

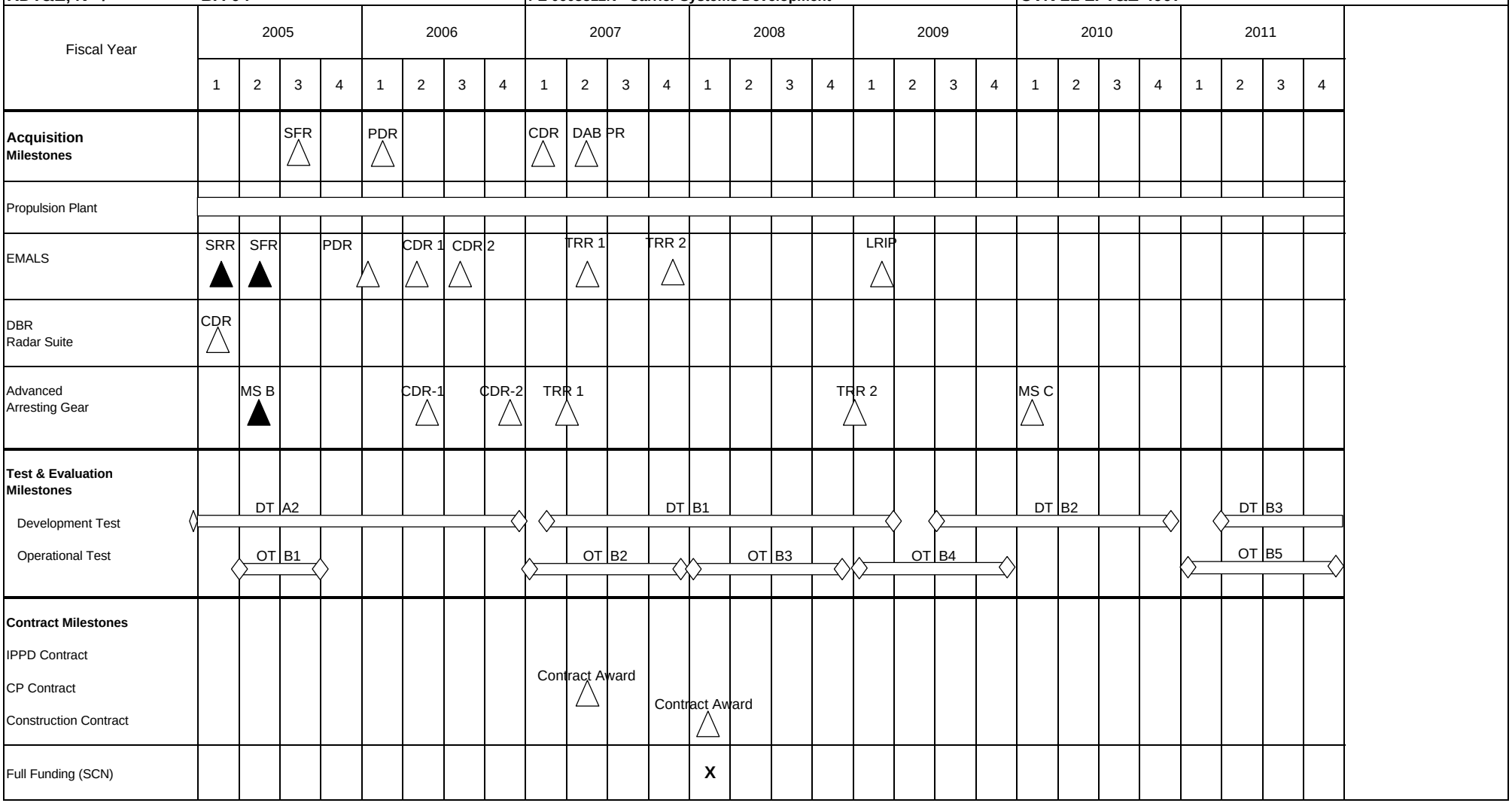
R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-04	**PE 0603512N - Carrier Systems Development**	**CVN 21 LFT&E 4007**



R-1 SHOPPING LIST - Item No. 117

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

Exhibit R-4a, Schedule Detail							DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-04**	PROGRAM ELEMENT **PE 0603512N - Carrier Systems Development**				PROJECT NUMBER AND NAME **CVN 21 LFT&E 4007**		
Schedule Profile	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Developmental Tests DT A-2							
Advanced Arresting Gear SRR							
EMALS SDD Phase Initiate							
Dual Band Radar PDR							
CVN 21 Milestone B							
CVN 21 SRR							
Construction Preparation Contract Award			2Q				
Advanced Arresting Gear PDR							
EMALS SRR	1Q						
Developmental Tests DT A-2	1-4Q						
Dual Band Radar CDR	1Q						
Advanced Arresting Gear Milestone B	2Q						
Operational Tests OT-B1	2-3Q						
EMALS SFR	2Q						
CVN 21 SFR	3Q						
EMALSP PDR		1Q					
Advanced Arresting Gear CDR 1		2Q					
CVN 21 PDR		1Q					
Developmental Tests DT A-2		1-4Q					
AAG CDR 2		4Q					
EMALS CDR 1		2Q					
EMALS CDR 2		3Q					
Developmental Tests DT-B1			1-4Q				
Operational Tests OT-B2			1-4Q				
CVN 21 CDR			1Q				
EMALS TRR 1(HALT/HCT)			1Q				
CVN 21 DAB PR			2Q				
AAG TRR 1 (IT)			2Q				
CVN 21 Construction Contract Award				1Q			
CVN 21 SCN Full Funding				1Q			
Developmental Tests DT-B1				1-4Q			
Operational Tests OT-B3				1-4Q			
EMALS TRR 2 (DT/OA)			4Q				
EMALS LRIP					1Q		
AAG TRR 2 (IT)					1Q		
Developmental Tests DT-B1					1Q		
Operational Tests OT-B4					1-4Q		
Developmental Tests DT-B2					3-4Q		
Developmental Tests DT-B2						1-4Q	
AAG LRIP						2Q	
Operational Tests OT-B5							1-4Q
Developmental Tests DT-B3							3-4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NAME AND NUMBER **Ship Contract Design/LFT&E PE 0604567N**				PROJECT NAME AND NUMBER **CVN 21 Total Ship Integration 4008**		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**61.639**	**9.564**	**22.118**	**6.854**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses CVN 78 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 78 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. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 78 procurement, including, but not limited to engineering support, programmatic and program support, logistics support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment (IDE). The CVN 21 class design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.

CVN 78 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; analysis and redesign of survivability systems, and analysis and design of all associated ship hull, mechanical, electrical, propulsion, combat/warfare system, survivability and other related components.

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 Total Ship Integration 4008**

B. Accomplishments/Planned Program

	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	**61.639**	**9.564**	**22.118**
RDT&E Articles Quantity			

(U) FY05 : Continue to resolve CVN 78 whole ship design issues related to aviation systems, combat and integrated warfare systems, auxiliary systems, and HM&E systems. 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 accommodates changes to the ship, its systems and equipment necessitated by equipment obsolescence, operational need, and incorporation of newer systems/technology. Provide required program management and logistics support, 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. A significant portion of work originally planned for FY06 was accelerated into FY05.

(U) FY06: Continue to resolve CVN 78 whole ship design issues related to aviation systems, combat and integrated warfare systems, auxiliary systems, and HM&E systems. Provide required logistics support and program management support leading up to the FY07 Defense Acquisition Board (DAB) Program Review and the FY08 Construction Contract Award for the lead ship.

(U) FY07: Continue to resolve CVN 78 whole ship design issues related to aviation systems, combat and integrated warfare systems, auxiliary systems, and HM&E systems. Provide logistics support and program support leading up to the FY08 Construction Contract Award. Continue construction preparation contract component development process.

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 Total Ship Integration 4008**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget Controls	62.600	9.721	22.204
FY07 President's Budget Controls	61.639	9.564	22.118
Total Adjustments	-0.961	-0.157	-0.086
Summary of Adjustments			
Cancelled accounts	-0.047		
Other misc. changes			-0.086
SBIR	-0.876		
General provisions	-0.038	-0.157	
Subtotal	-0.961	-0.157	-0.086

Schedule:

The CVN 78 Basic Construction contract will be awarded in FY08 with delivery in FY15.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	**Ship Contract Design/LFT&E PE 0604567N**	**CVN 21 Total Ship Integration 4008**

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
BLI 200100 Carrier Replacement Program	623.073	619.097	784.143	3,481.631	3,858.384	1,679.100	541.455	Cont.	Cont.
PE 0603512N Carrier System Development	161.539	168.283	153.894	117.125	106.872	164.210	98.324	Cont.	Cont.
PE 0603570N Adv. Nuclear Power Systems	167.951	165.845	174.648	165.165	157.045	137.766	109.429	Cont.	Cont.

*Note: Only a portion of the funding in PE 0603570N and 0603512N is included in the CVN 21 Program

E. ACQUISITION STRATEGY:

The CVN 78 will be the first ship of the CVN 21 class. Due to the length and cost of construction, each carrier will be contracted for separately. The CVN 78 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, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.

F. MAJOR PERFORMERS:

Northrop Grumman Newport News
NSWC Carderock
NAWC Lakehurst
NAVSEA

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: **Ship Contract Design/LFT&E PE 0604567N**

PROJECT NUMBER AND NAME: **CVN 21 Total Ship Integration 4008**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Total Ship Integration	WX	NSWC Carderock	12.082	3.091	11/04			7.200	12/06	Continuing	Continuing	
	SS, CPAF	NGNN, Newport News Va	38.913	24.509	10/04	1.470	01/06	1.450	12/06	Continuing	Continuing	
	IPR	GSA	5.888							Continuing	Continuing	
	WX	NAWC, Lakehurst	4.123							Continuing	Continuing	
	WX	NSWC Dahlgren	2.554	3.996	11/04			3.500	12/06	Continuing	Continuing	
	CPAF	Raytheon		0.747						Continuing	Continuing	
	CPAF	Raytheon		2.000	04/05					Continuing	Continuing	
	WX	NSWC, Port Hueneme	4.000							Continuing	Continuing	
	CPFF	NAVSEA SEAPORT	8.135	15.228	12/04	4.837	01/06	4.567	12/06	Continuing	Continuing	
	WX	NAWC AD, PAX River	2.383	7.874	10/04	2.045		4.000	12/06	Continuing	Continuing	
	PD	SPAWAR, San Diego	8.766	2.010	10/04					Continuing	Continuing	
	Various	Miscellaneous	10.156	2.051	10/04	1.062	11/05	1.251	12/06	Continuing	Continuing	
Subtotal Product Development			97.000	61.506		9.414		21.968		Continuing	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				

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT **Ship Contract Design/LFT&E PE 0604567N**					PROJECT NUMBER AND NAME **CVN 21 Total Ship Integration 4008**				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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			0.252	0.133	10/04	0.150	10/05	0.150				
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.252	0.133		0.150		0.150				
Remarks:												
Total Cost			97.252	61.639		9.564		22.118				
Remarks:												

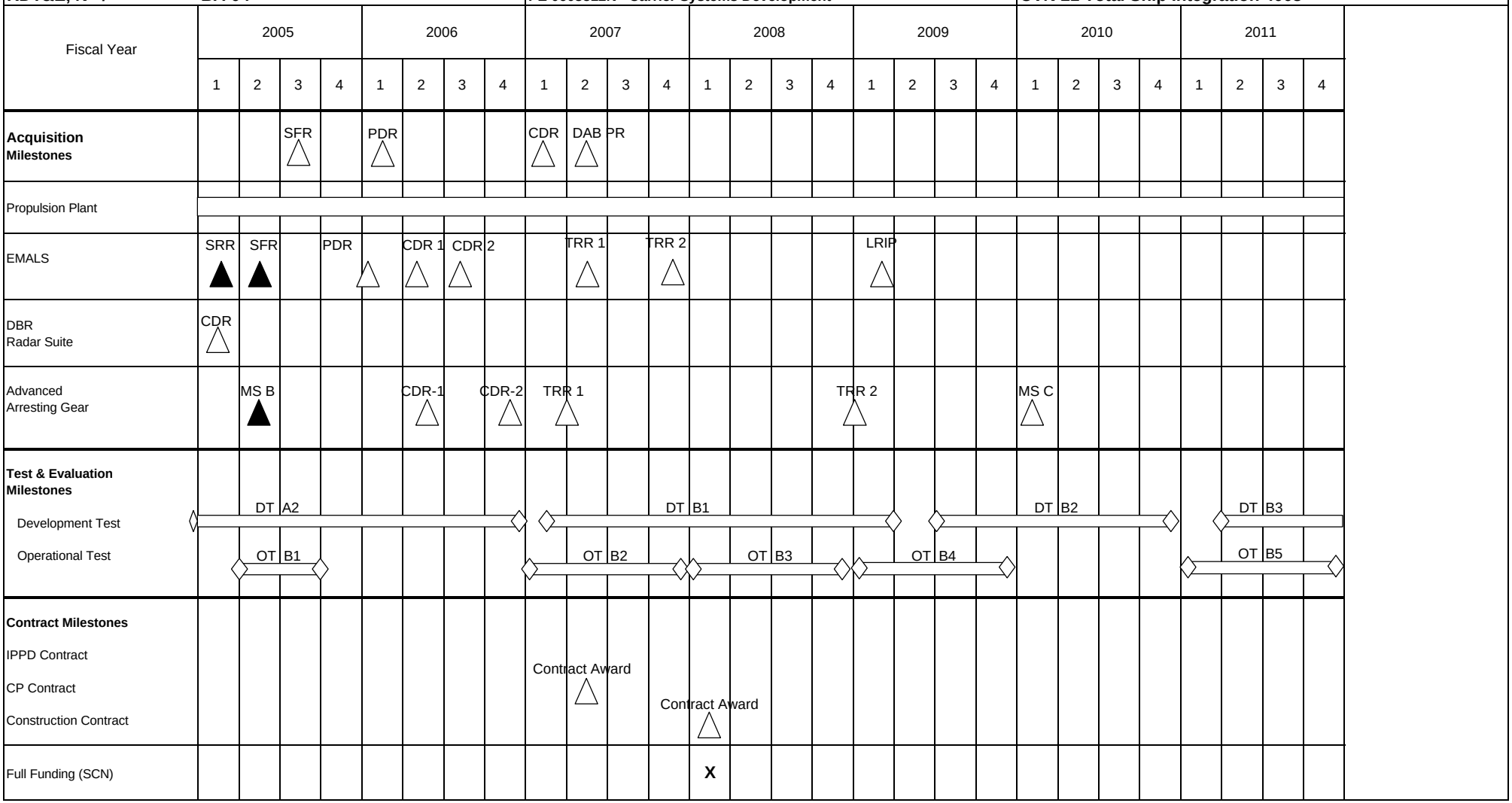
R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-04	**PE 0603512N - Carrier Systems Development**	**CVN 21 Total Ship Integration 4008**



R-1 SHOPPING LIST - Item No. 117

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

Exhibit R-4a, Schedule Detail							DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-04**	PROGRAM ELEMENT **PE 0603512N - Carrier Systems Development**				PROJECT NUMBER AND NAME **CVN 21 Total Ship Integration 4008**		
Schedule Profile	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Developmental Tests DT A-2							
Advanced Arresting Gear SRR							
EMALS SDD Phase Initiate							
Dual Band Radar PDR							
CVN 21 Milestone B							
CVN 21 SRR							
Construction Preparation Contract Award			2Q				
Advanced Arresting Gear PDR							
EMALS SRR	1Q						
Developmental Tests DT A-2	1-4Q						
Dual Band Radar CDR	1Q						
Advanced Arresting Gear Milestone B	2Q						
Operational Tests OT-B1	2-3Q						
EMALS SFR	2Q						
CVN 21 SFR	3Q						
EMALSP PDR		1Q					
Advanced Arresting Gear CDR 1		2Q					
CVN 21 PDR		1Q					
Developmental Tests DT A-2		1-4Q					
AAG CDR 2		4Q					
EMALS CDR 1		2Q					
EMALS CDR 2		3Q					
Developmental Tests DT-B1			1-4Q				
Operational Tests OT-B2			1-4Q				
CVN 21 CDR			1Q				
EMALS TRR 1(HALT/HCT)			1Q				
CVN 21 DAB PR			2Q				
AAG TRR 1 (IT)			2Q				
CVN 21 Construction Contract Award				1Q			
CVN 21 SCN Full Funding				1Q			
Developmental Tests DT-B1				1-4Q			
Operational Tests OT-B3				1-4Q			
EMALS TRR 2 (DT/OA)			4Q				
EMALS LRIP					1Q		
AAG TRR 2 (IT)					1Q		
Developmental Tests DT-B1					1Q		
Operational Tests OT-B4					1-4Q		
Developmental Tests DT-B2					3-4Q		
Developmental Tests DT-B2						1-4Q	
AAG LRIP						2Q	
Operational Tests OT-B5							1-4Q
Developmental Tests DT-B3							3-4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	Ship Contract Design/LFT&E 0604567N	Project 9578C Name: Congressional Add- Integrated Modernization Environment

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	2.600	0.000
RDT&E Articles Quantity				

This project (9578C) will develop an NMCI compatible Integrated Modernization Environment (IME) with a real time information sharing capability to improve the ability to manage program information and facilitate collaboration engineering. This funding continues development of the web based IME initiated in Project 9578 in FY05.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**				R-1 ITEM NOMENCLATURE 0604574N / NAVY TACTICAL COMPUTER RESOURCES				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**$8.169**	**$6.487**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**
1353 Standard Hardware		**$6.196**	**$2.187**	**$0.000**	**$0.000**	**$0.000**	**$0.000**	**$0.000**
9579 Compact Ultra Fast Laser System Development		**$1.973**						
9999 Congressional Adds			**$4.300**					

Defense Emergency Response Funds (DERF) : Not applicable.

A. Mission Description and Budget Item Justification: The AN/UYQ-70(V) program must incorporate state-of-the-art Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technological improvements continuously and rapidly, in order to meet rapidly evolving future customer requirements. The AN/UYQ-70(V) program provides the de facto standard for state-of-the-art commercial-off-the-shelf (COTS) processors and displays for all mission-essential/mission-critical combat systems, weapons systems, self-defense systems, command and control systems, and communications systems utilized in all USN combatants. The Q-70 product baseline continues to require increased capability in order to satisfy the needs of future FORCENET network-centric Open Architecture combat system designs. This funding also supports the continuing spiral development of Q-70 and Common Enterprise Display System (CEDS), which will be the standard display system for all new combat systems on all new ship designs. This CEDS development will incorporate vastly improved HSI (Human Systems Interface) characteristics, and migration to full Open Architecture Computing Environment (OACE) requirements.

**FY05 includes two Congressional Adds totaling 6.0M

R-1 SHOPPING LIST - Item No. 118

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME; 1353/Standard Hardware 9579 Compact Ultra Fast Laser System Development			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**8.169**	**6.487**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. Mission Description and Budget Item Justification: The AN/UYQ-70(V) program must incorporate state-of-the-art Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technological improvements continuously and rapidly, in order to meet rapidly evolving future customer requirements. The AN/UYQ-70(V) program provides the de facto standard for state-of-the-art commercial-off-the-shelf (COTS) processors and displays for all mission-essential/mission-critical combat systems, weapons systems, self-defense systems, command and control systems, and communications systems utilized in all USN combatants. The Q-70 product baseline continues to require increased capability in order to satisfy the needs of future FORCENET network-centric Open Architecture combat system designs. This funding also supports the continuing spiral development of Q-70 and Common Enterprise Display System (CEDS) which will be the standard display system for all new combat systems on all new ship designs. This CEDS development will incorporate vastly improved HSI (human systems interface) characteristics, and migration to full Open Architecture Computing Environment (OACE) requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME; 1353/Standard Hardware
RDT&E, N / BA-5	0604574N / NAVY TACTICAL COMPUTER RESOURCES	9579 Compact Ultra Fast Laser System Development

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	6.196	2.187	0.000
RDT&E Articles Quantity			

FY2005 Plan: Preparation and commencement of Common Enterprise Display System (CEDS) development contract. Congressional Add of $4.0M to continue Technology Insertion efforts on Q-70 production contract.
FY2006 Plan: Continue CEDS development.
FY2007 Plan: Continue CEDS development.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.973	0.000	0.000
RDT&E Articles Quantity			

FY 2005 Plan: FY05 Congressional Add for development of High Energy Laser.
FY 2006 Plan: None
FY2007 Plan: None

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N\
RDT&E, N / BA-5	0604574N / NAVY TACTICAL COMPUTER RESOURCES	9579 / Compact Ultra Fast Laser System Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Other Program Funding Summary									
Related RDT&E									
PE 0603382N (ADV COMBAT SYS TECHNOLOGY)	61.474	29.705	12.380	22.552	23.213	23.897	25.853		
PE 0603502N (SHALLOW WATER MCM)	97.892	118.682	130.265	131.401	127.034	194.089	246.993		
PE 0604307N (AEGIS WEAPON SYS MODS)	148.939	228.932	189.929	209.153	217.909	242.600	268.203		
PE 0604366N (STD MSL IMP)	110.568	148.532	186.016	221.583	237.085	159.352	67.405		
PE 0604755N (SHIP SELF DEFENSE)	68.193	56.642	10.044	6.266	5.440	0.743	0.138		
PE 0604503N SSN-688/TRIDENT MOD	65.521	62.102	59.777	64.761	67.660	64.384	76.525		
PE 0604561N SSN-21 DEVELOPMENT	2.966	2.878	3.260	2.708	2.756	2.912	2.960		
PE 0604562N SUB TACT WARFARE SYS	46.389	46.024	51.656	53.578	54.681	55.945	57.081		

F. MAJOR PERFORMERS:

N/A

R-1 SHOPPING LIST - Item No. 118

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME; 1353/Standard Hardware
RDT&E, N / BA-5	0604574N / NAVY TACTICAL COMPUTER RESOURCES	9579 / Compact Ultra Fast Laser System Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	8.298	2.220	2.701
FY 2007 Budget Estimate	8.169	2.187	0.000
Total Adjustments	-0.129	-0.033	-2.701
Summary of Adjustments			
Other General Provisions	-0.129	-0.033	-2.713
Inflation			0.012
Subtotal	-0.129	-0.033	-2.701

Technical:

N/A

R-1 SHOPPING LIST - Item No. 118

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604574N / NAVY TACTICA	PROJECT NUMBER AND NAME; 1353/Standard Hardware 9579 / Compact Ultra Fast Laser System Development									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	195.500							195.500	195.500	
Ancillary Hardware Development	Various	Various	0.650							0.650	0.650	
Component Development										0.000	0.000	
Ship Integration										0.000	0.000	
Ship Suitability										0.000	0.000	
Systems Engineering	CPFF	Lockheed Martin		3.859	Various	0.000	10/05	0.000		Continuing	Continuing	
Systems Engineering	WX	NSWC/Crane		0.021	02/05	0.695	10/05	0.000		Continuing	Continuing	
Systems Engineering	WX	NSWC/PHD		0.091	02/05	0.130	10/05	0.000		Continuing	Continuing	
Systems Engineering	WX	NSWC/Dahlgren		0.338	02/05	1.011	10/05	0.000		Continuing	Continuing	
Systems Engineering	WX	NUWC/Newport		0.100	02/05	0.000	10/05	0.000		Continuing	Continuing	
Systems Engineering	Various	Various	82.222	1.787	Various	0.351	10/05	0.000		Continuing	Continuing	
Training Development			1.000							1.000	1.000	
Licenses			1.000							1.000	1.000	
Tooling										0.000	0.000	
GFE										0.000	0.000	
Award Fees										0.000	0.000	
Subtotal Product Development			280.372	6.196		2.187		0.000		Continuing	Continuing	
Remarks:												
Development Support	CPFF	Lockheed Martin	1.000	1.973						Continuing	Continuing	
Software Development	Various	Various	40.009							Continuing	Continuing	
Training Development	Various	Various	1.575							Continuing	Continuing	
Integrated Logistics Support	Various	Various	2.472							Continuing	Continuing	
Configuration Management	Various	Various	2.620							Continuing	Continuing	
Technical Data	Various	Various	1.338							Continuing	Continuing	
GFE										0.000	0.000	
Award Fees										0.000	0.000	
Subtotal Support			49.014	1.973		0.000		0.000		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604574N / NAVY TACTICA	PROJECT NUMBER AND NAME; 1353/Standard Hardware 9579 / Compact Ultra Fast Laser System Development								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	26.300	0.000		0.000		0.000		Continuing	Continuing	Continuing
Operational Test & Evaluation	Various	Various	18.428	0.000		0.000		0.000		Continuing	Continuing	Continuing
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			44.728	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Government Engineering Services												
Program Management Support			1.000	0.000		0.000		0.000		Continuing	Continuing	
Subtotal Management			1.000	0.000		0.000		0.000		Continuing	Continuing	
Total Cost			375.114	8.169		2.187		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 118

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Not Applicable**					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604574N / NAVY TACTICAL COMPUTER RESOURCES				PROJECT NUMBER AND NAME; 1353/Standard Hardware 9579 / Compact Ultra Fast Laser System Development			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	

R-1 SHOPPING LIST - Item No. 118

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																												
Not Applicable																											DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME; 1353/Standard Hardware											
RDT&E,N / BA-5					0604574N / NAVY TACTICAL COMPUTER RESOURCES												9579 / Compact Ultra Fast Laser System Development											
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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 SHOPPING LIST - Item No. 118

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME:VARIOUS
RDT&E, N / BA-5	0604574N / NAVY TACTICAL COMPUTER RESOURCES	CONGRESSIONAL PLUS-UPS

B. CONGRESSIONAL PLUS-UPS:

	FY 06		
1353C	4.300		
Q-70 Systems Technology Improvements			

FY 2006 Plan: FY06 Congressional Add will allow for Q-70 System Technology Improvements.

R-1 SHOPPING LIST - Item No. 118

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**					
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**						R-1 ITEM NOMENCLATURE 0604601N, Mine Development					
COST ($ in Millions)	Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	**173.623**		**4.851**	**15.161**	**5.631**	**6.677**	**16.897**	**17.280**	**6.503**	**Continuing**	**Continuing**
RDT&E Articles Qty	**N/A**		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**0**	**0**

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

This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas: (1) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations; (2) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms; (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields; and (4) Designing and developing the Sea Predator (2010 Mine), which is a replacement for Underwater Mine MK 56 which is designated to be removed from service by the year 2010 due to environmental impact problems. The Sea Predator (2010 Mine) design will include provisions for future capability upgrades. Future upgrades may include: (a) 2-way remote command & 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.

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	6.052	15.392	15.738
FY07 President's Budget	4.851	15.161	5.631
Total Adjustments	-1.201	-0.231	-10.107
Summary of Adjustments:			
Inflation	0.000	0.000	0.025
Fuel Rates	0.000	0.000	0.005
Pay Rates	0.000	0.000	0.004
Programmatic Changes	-1.201	-0.231	-10.141
Subtotal	-1.201	-0.231	-10.107

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

R-1 SHOPPING LIST - Item No. 119

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604601N, Mine Development	0267, Mine Development

(U) C. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.471	12.486	3.993
RDT&E Articles Quantity				

Product Development:

FY 2005 PLANS

($2.939) Hardware Development: Initiate 2010 Mine design and development.

($0.532) System Engineering: Initiate development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development.

FY 2006 PLANS *

($12.486) System Engineering: Continue development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development.

FY 2007 PLANS

($3.993) System Engineering: Continue development of Concept of Operations and other tactical analysis modeling and simulation in support of 2010 Mine development. Continue System Development and Demonstration. Begin development fo aircraft certification for Quickstrike Mod 3.

* During the PR07 process, the decision was made to delay the development effort for the 2010 mines in order to fund higher priority items. The decision was made too late to affect a change to FY06 budgeted funds. A BTR is in process to reprogram $3.078M from this PE to PE0603502N, Project 0260 for the Remote Minehunting Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME 0267, Mine Development

(U) C. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.237	1.275	1.485
RDT&E Articles Quantity				

Development Support:

FY 2005 PLANS
($1.158) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning.
($0.079) Integrated Logistics Support (ILS).

FY 2006 PLANS
($1.145) Software Development: Continue development of algorithms (target detection) for mini-subs, HSV/SWATH ships, and MCM ships. Continue development of PC-based, MEDAL-compliant TDAs for minefield planning.
($0.130) Integrated Logistic Support (ILS).

FY 2007 PLANS
($1.336) Software Development: Continue development of algorithms (target detection) for mini-subs, HSV/SWATH ships, and MCM ships for Quickstrike Mod 3. Continue development of PC-based, MEDAL-compliant TDAs for minefield planning.
($0.149) Integrated Logistic Support (ILS).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME 0267, Mine Development	

(U) C. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.143	1.400	0.153
RDT&E Articles Quantity				

Management:

FY 2005 PLANS
Program Management Support.

FY 2006 PLANS
Program Management Support.

FY 2007 PLANS
Program Management Support.

	FY 05	FY 06	FY 07
TOTAL	4.851	15.161	5.631

R-1 SHOPPING LIST - Item No. 119

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604601N, Mine Development	0267, Mine Development

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Line 323100, WPN									
QS Mod 3	2.952	2.978	3.103						
2010 Mine Replacement	0.000	0.000	0.000						
Total	2.952	2.978	3.103						

(U) E. ACQUISITION STRATEGY:

NSWC PC, 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 FY11.

R-1 SHOPPING LIST - Item No. 119

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604601N, Mine Development				PROJECT NUMBER AND NAME 0267, Mine Development								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WX	NWSC-PC	106.622			2.939	12/04	11.059	12/05	3.000	12/06	Continuing	Continuing	N/A
Ancillary Hardware Development			2.158										2.158	N/A
Ship Suitability	WX	NWSC-PC	1.935			0.532	12/04	1.427	12/05	0.993	12/06	Continuing	Continuing	N/A
GFE			4.790										4.790	N/A
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			115.505			3.471		12.486		3.993		Continuing	Continuing	
Remarks:														
Software Development	WX	Various	5.467			1.158	12/04	1.145	12/05	1.336	12/06	Continuing	Continuing	N/A
Integrated Logistics Support	WX	NWSC-PC	0.320			0.079	12/04	0.130	12/05	0.149	12/06	Continuing	Continuing	N/A
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Support			5.787			1.237		1.275		1.485		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 119

CLASSIFICATION:

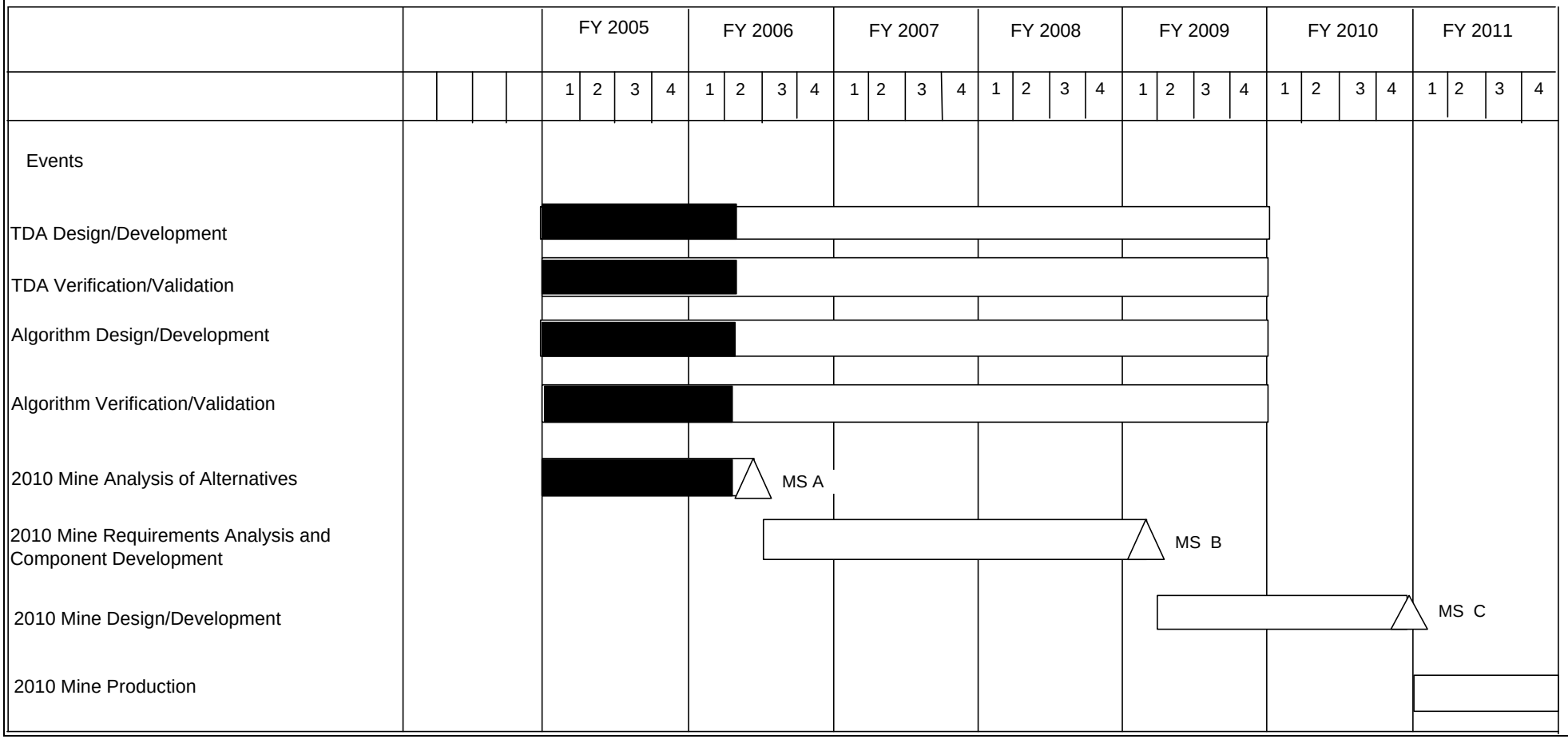
Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604601N, Mine Development				PROJECT NUMBER AND NAME 0267, Mine Development								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NWSC-PC	15.833									0.000	15.833	N/A
												0.000	0.000	N/A
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
Subtotal T&E			15.833			0.000		0.000		0.000		Continuing	Continuing	
Remarks:														
Government Engineering Support			35.599									0.000	35.599	N/A
Program Management Support	Various	Various	0.889			0.133	12/04	1.390	12/05	0.143	12/06	Continuing	Continuing	N/A
Travel	PD	NAVSEA	0.010			0.010	12/04	0.010	12/05	0.010	12/06	Continuing	Continuing	N/A
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
Subtotal Management			36.498			0.143		1.400		0.153		Continuing	Continuing	
Remarks:														
Total Cost			173.623			4.851		15.161		5.631		Continuing	Continuing	
Remarks:														

R-1 SHOPING LIST - Item No. 119

EXHIBIT R-4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	R-1 ITEM NOMENCLATURE
RDT& E, N/BA-5	0604601N, Mine Development	0267, Mine Development

E. Schedule Profile

MINE DEVELOPMENTS PROGRAM SCHEDULE



R-1 SHOPPING LIST - Item No. 119

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT 0604601N, Mine Development				PROJECT NUMBER AND NAME 0267, Mine Development			
Schedule Profile: Mine Development		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TDA Design/Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
TDA Verification/Validation		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Algorithm Design/Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Algorithm Verification/Validation		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
2010 Mine Analysis of Alternatives		1Q-4Q	1Q-2Q					
Milestone A			2Q					
2010 Mine Req Analysis and Component Development			3Q-4Q	1Q-4Q	1Q-4Q	1Q		
Milestone B						1Q		
2010 Design/Development						2Q-4Q	1Q-4Q	
Milestone C							4Q	
2010 Mine Production								1Q-4Q

R-1 SHOPPING LIST - Item No. 119

Exhibit R-2a, RDTEN Project Justification

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604603N Unguided Conventional Air-Launched Weapons			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**1.450**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
2183 Improved SLAM		**1.450**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

2183/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).

FY 05 funds are for completion of the SLAM-ER land moving target capability test and evaluation.

R-1 SHOPPING LIST - Item No. 120

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604603N Unguided Conventional Air-Launched Weapons				PROJECT NUMBER AND NAME 2183 Improved SLAM			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.450**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

2183/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).

FY 05 funds are for completion of the SLAM-ER land moving target capability test and evaluation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604603N Unguided Conventional Air-Launched Weapons	2183 Improved SLAM

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.450		
RDT&E Articles Quantity			

FY 05 funds are for completion of the SLAM-ER land moving target capability test and evaluation.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604603N Unguided Conventional Air-Launched Weapons	2183 Improved SLAM

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.000	0.000	0.000
Current President's Budget:	1.450	0.000	0.000
Total Adjustments	1.450	0.000	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments	1.450		
Subtotal	1.450	0.000	0.000

Schedule: Testing scheduled for completion by the end of FY 05 was delayed. This testing is now scheduled to be completed in the 3rd quarter of FY 06.

Technical: Not applicable

R-1 SHOPPING LIST - Item No. 120

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604603N Unguided Conventional Air-Launched Weapons	2183 Improved SLAM

D. OTHER PROGRAM FUNDING SUMMARY:

N/A

E. ACQUISITION STRATEGY:

This is a ACAT II program, post milestone C in full rate production with an approved Acquisition Plan.

R-1 SHOPPING LIST - Item No. 120

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5**		R-1 ITEM NOMENCLATURE **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**					
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**15.281**	**31.348**	**40.540**	**31.434**	**42.493**	**36.665**	**21.512**
Lightweight Torpedo 2234	**15.281**	**31.348**	**40.540**	**31.434**	**42.493**	**36.665**	**21.512**
Quantity of RDT&E Articles				**1**	**1**		

Notes: FY05 includes $5.040 million reprogramming for MK54 High Altitude ASW Weapons Concept Demo Program.
Articles reflect VLA Kit Integration deliveries in FY08 and Array Improvements delivery in FY09.

A. (U) Mission Description and Budget Item Justification:

Lightweight Torpedo / 2234: The program designs, integrates and tests the Lightweight Torpedo (LWT, MK54). The Lightweight Torpedo provides performance improvements in shallow water, counter-measure environments. The Engineering Development Model (EDM) contract was awarded to Raytheon Systems Company in June 1996. The EDM contract has delivered twenty-one EDM units to support the in-water test program. IOC achieved in 2004. FY2005: Initiated MK54 Vertical Launch Anti Submarine Rocket (VLA) integration effort. Congressional increase ($1.5M) received to support improvements of MK54 array performance and reliability. $5.040M reprogramming received to conduct High Altitude ASW Weapons Concept (HAAWC) Demo. FY2006: Budget increased significantly to support a Pre-Planned Product Improvement Program (P3I) for MK54 using a hardware spirals development acquisition approach and Advanced Processor Build (APB) software upgrades process to enable rapid hardware and software improvements to the Fleet. The P3I program will focus on common hardware and software architecture enhancements that will provide re-architecture / Torpedo Downloader System (TDS), MK54 VLA Integration, Insensitive Munitions Warhead (IM W/H) capability improvement, broadband array improvements, fully open architecture design, and connectivity / advanced interface. The APB program also will incorporate MK 48 ADCAP Torpedo algorithms and tactics software to create a Common Torpedo Development program. Future APB software builds will utilize the common torpedo software to deliver software and tactics to both the MK 48 ADCAP and MK 54 Lightweight torpedoes. FY07: Continue development of hardware/software improvements for P3I program. Initiate development of launcher and fire control prototypes and conduct demo of MK54 capability from Unmanned Surface Vehicle (USV). Initiate development of MK54 high altitude launch capability from Maritime Patrol Aircraft (MPA).

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5**	R-1 ITEM NOMENCLATURE **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**

B. Accomplishments/Planned Program

MK54 Pre-Planned Product Improvement (includes MK54 VLA Integration) 2234	FY 05	FY 06	FY 07
TOTAL	15.281	31.348	40.540
Quantity of RDT&E Articles			

FY 2005 ACCOMPLISHMENTS:

Awarded contract to conduct system engineering, software and hardware development for new prototype array (funded with Congressional add).
Performed engineering trade-off studies leading to initiating Hardware Spirals in FY05.
Initiated engineering studies for VLA integration.
Initiated High Altitude ASW Weapons Concept (HAAWC) Demo Program.
Complete array technology demo.

FY 2006 Plan:

Complete FOT&E
Funding increases to support commencing development of hardware spirals improvements and software upgrades for Advanced Processor Build (APB).
Continue hardware spiral development to integrate Vertical Launch Anti Submarine Rocket (VLA) with MK54 torpedo. VLA efforts include hardware design, develop prototypes, hardware/software integration, and launch system integration; development includes efforts for hardware and software improvements of re-architecture / Torpedo Downloader System (TDS), and Insensitive Munitions Warhead (IM W/H) capability improvement.
Initiate P3I contract award efforts to contractors.
Initiate increased software upgrades development efforts in order to address fleet identified performance priorities for the MK54 LWT.
Initiate design and qualification of array and transmitter.
Complete HAAWC Demo.

FY 2007 Plan:

Continue hardware spirals development to integrate Vertical Launch Anti Submarine Rocket (VLA) with MK54 torpedo. VLA efforts include hardware design, develop prototypes, hardware/software integration, and launch system integration; development includes efforts for hardware and software improvements of re-architecture / Torpedo Downloader System (TDS), and Insensitive Munitions (IM) capability improvement.
Continue software upgrades development efforts; software development to include coding, and modeling and simulation.
Conduct in-water tests of VLA.
Initiate MK54 launcher and fire control prototypes as part of the Unmanned Surface Vehicle (USV) Concept Demo Program.
Initiate MK54 High Altitude ASW Weapon Concept (HAAWC) capability program.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5**	R-1 ITEM NOMENCLATURE **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY06 PB Controls)	11.324	31.826	28.583
Current BES/President's Budget: (FY07 PB Controls)	15.281	31.348	40.540
Total Adjustments	3.957	-0.478	11.957

Summary of Adjustments:			
Small Business Innovation Research	-0.110		
Department of Energy Transfer (P.L. 108-447)	-0.009		
Rescissions		-0.478	
Programmatic changes			11.957
Reprogramming	4.076		
Sub-Total	3.957	-0.478	11.957

Schedule: Not applicable.

Technical: Not applicable.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5**	R-1 ITEM NOMENCLATURE **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Torpedo MK 46 MODS / MK54 MODS 0 (WPN / PE 0204228N / BA3 / BLI 321500)	60.822	68.582	96.505	84.945	176.628	151.056	167.627

E. ACQUISITION STRATEGY:

The EDM contract is held by Raytheon Systems 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.
Sole Source Production Contract awarded in FY 2004 for MK48 ADCAP MODS/CBASS and MK54 Lightweight Torpedoes.
P3I spiral acquisition strategy is to award EDM contract's among qualified producers.

F. MAJOR PERFORMERS:

NUWC, Newport: MK54 System Engineering, System Integration, Software development, and Hardware Engineering development.
NUWC, Keyport: MK 54 Torpedo preparation for in-water testing and safety and environmental engineering including Fleet Exercise Section and Automatic Test Equipment. VLA: System Engineering and Integration.
NSWC Indian Head: Warhead Development for torpedoes.
PEO-IWS 3, Dahlgren: VLA Integration: MK41 Vertical Launching System (VLS) Systems Integration and software development.
PEO-IWS 5, Dahlgren: VLA Integration: ASW Fire Control system integration and software development.
PMA 290: Development of MK54 high altitude launch capability.
Lockheed Martin: Development of MK54 high altitude launch capability.
Raytheon Corporation: MK54 Hardware Development.
Material System Incorporated: Hardware Design for array technology.
Lockheed Martin: System Engineering for VLA integration.

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**		PROGRAM ELEMENT **0604610N**				PROJECT NAME AND NUMBER **Lightweight Torpedo 2234**						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NUWC Newport/Keyport	CONT.	0.965	10/04	5.300	10/05	7.925	10/06	CONT.	CONT.	N/A
Hardware Development	SS/FP	Material Systems Inc.	N/A	1.150	10/04	0.000		0.000				
Hardware Development	SS/FP	Raytheon Corporation	N/A	0.000		2.678	01/06	1.475	11/06	CONT.	CONT.	N/A
Hardware Development	SS/FP	Lockheed Martin - Orlando	N/A	2.417	09/05	0.000		0.000				
Hardware Development	WR	NSWC Indian Head	N/A	0.500	10/04	0.977	11/05	0.600	10/06	CONT.	CONT.	N/A
Hardware Development	WR	ARL/PSU State College, PA	0.200	0.050	10/04	0.000	11/05	0.000		N/A	N/A	N/A
Systems Engineering	WR	NUWC Newport/Keyport	CONT.	2.817	10/04	4.423	10/05	8.902	10/06	CONT.	CONT.	N/A
Systems Engineering	SS/FP	Lockheed Martin - Akron		0.500	10/04	1.680	01/06	0.510	11/06	CONT.	CONT.	N/A
Systems Engineering	WR	PEO-IWS 3, Dahlgren	N/A	2.000	10/04	2.922	10/05	4.500	10/06	CONT.	CONT.	N/A
Systems Engineering	WR	PEO-IWS 5, Dahlgren	N/A	0.655	10/04	1.981	01/06	1.817	10/06	CONT.	CONT.	N/A
Systems Engineering	WR	NSWC PMA 290	N/A	1.235		0.000		1.357	10/06			
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			CONT.	12.289		19.961		27.086		CONT.	CONT.	
Development Support Equipment												
Software Development	WR	NUWC Newport/Keyport	CONT.	2.104	10/04	10.350	10/05	11.825	10/06	CONT.	CONT.	N/A
Software Development	WR	ARL/PSU State College, PA	0.200	0.075	10/04	0.000		0.000				
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			CONT.	2.179		10.350		11.825		CONT.	CONT.	

Remarks:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N/BA-5**

PROGRAM ELEMENT: **0604610N**

PROJECT NAME AND NUMBER: **Lightweight Torpedo 2234**

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Evaluation	WR	Operational Test Support	CONT.	0.364	10/04	0.600	10/05	0.600	10/06	CONT.	CONT.	N/A
System Test & Evaluation	WR	NUWC Newport/Keyport	CONT.	0.000	10/04	0.000	10/05	0.000	10/06	CONT.	CONT.	N/A
System Test & Evaluation	WR	NSWC PMA 290	0.600	0.000	10/04	0.000	10/05	0.600	10/06	N/A	0.000	N/A
System Test & Evaluation	WR	ARL/PSU State College, PA	0.200	0.000	10/04	0.000	11/05	0.000	11/06	N/A	N/A	N/A
Subtotal T&E			CONT.	0.364		0.600		1.200		CONT.	CONT.	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Anteon	CONT.	0.399	MISC.	0.397	MISC.	0.389	MISC.	CONT.	CONT.	N/A
Travel			CONT.	0.050	MISC.	0.040	MISC.	0.040	MISC.	CONT.	CONT.	N/A
Labor (Research Personnel)				0.000		0.000		0.000				
Overhead			CONT.	0.000	MISC.	0.000	MISC.	0.000	MISC.	CONT.	CONT.	N/A
Subtotal Management			CONT.	0.449		0.437		0.429		CONT.	CONT.	
Remarks:												
Total Cost			CONT.	15.281		31.348		40.540		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 121

EXHIBIT R-4, Schedule Profile	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5**	R-1 ITEM NOMENCLATURE **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**

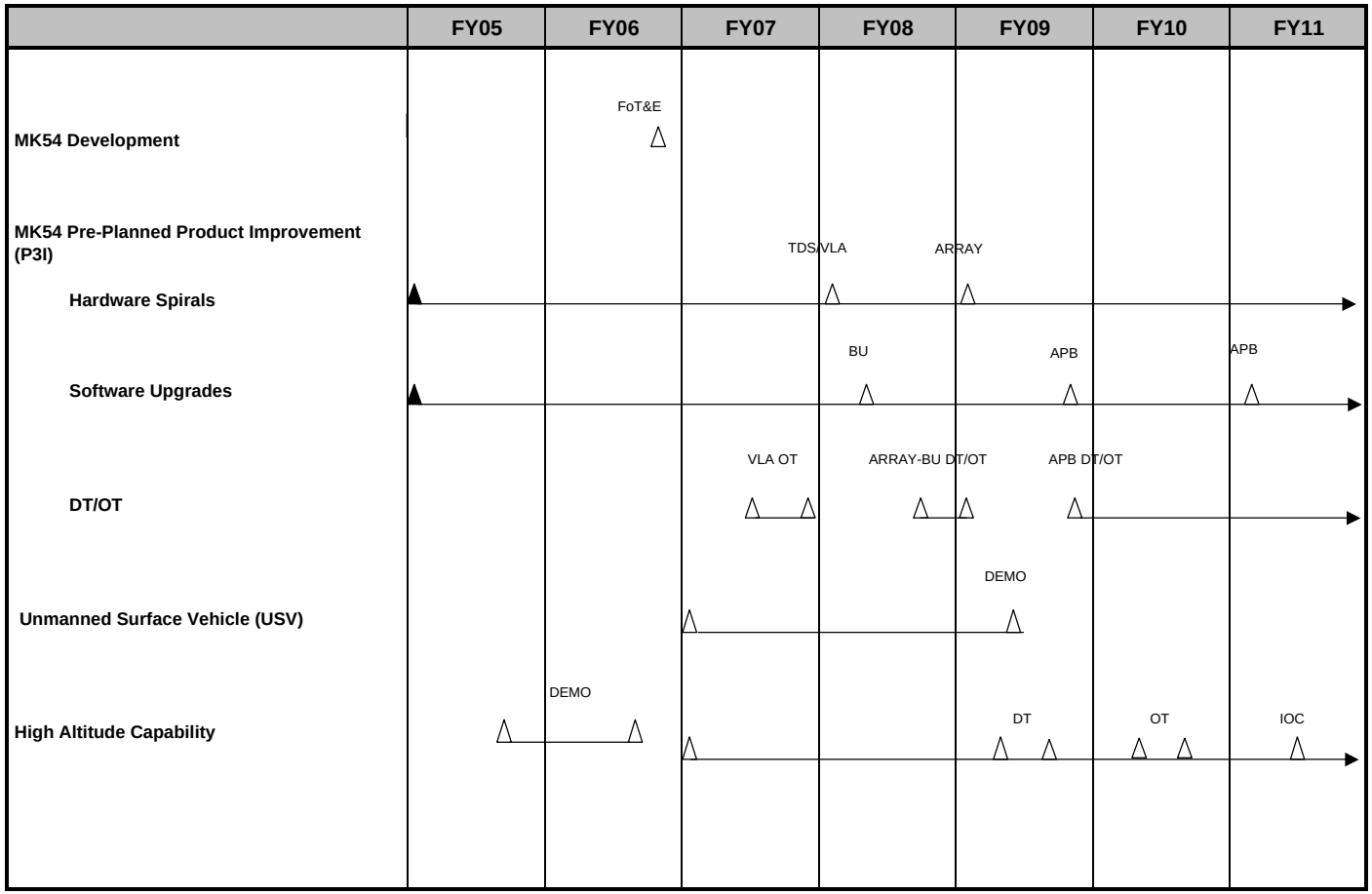


Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-5**		PROJECT NUMBER AND NAME **LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N**					
Schedule Profile	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**
MK54 Development & Upgrades							
FOT&E		4Q					
MK54 Pre-Planned Product Improvement (P3I)							
Hardware Spirals	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Software Spirals	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
DT/OT			2Q-4Q	3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Unmanned Surface Vehicle			1Q-4Q	1Q-4Q	1Q-2Q		
High Altitude Capability Demo	3Q-4Q	1Q-3Q					
High Altitude Capability			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5**					R-1 ITEM NOMENCLATURE 0604654N Joint Service EOD Development Engineering					
										Total
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Program
Total PE Cost		**9.277**	**8.746**	**10.026**	**10.249**	**9.811**	**10.029**	**10.246**	**Continuing**	**Continuing**
EOD Procedures/1829		***8.317**	**8.746**	**10.026**	**10.249**	**9.811**	**10.029**	**10.246**	**Continuing**	**Continuing**
Anti-Terrorist EOD/9580		****0.960**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
RDT&E Articles Qty		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Continuing**	**0**

(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 (N75X) 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.

This program is a non-acquisition program with on-going, continuous delivery of documented procedures and identification guides with no distinct delivery milestones.

* Includes $320K IED Defeat Supplemental funding.
**Congressional Add FY05 for Anti-Terrorist Explosive Ordnance Disposal.

R-1 SHOPPING LIST - Item No. 122

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604654N/Joint Service EOD Development Engineering	1829/EOD Procedures

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		6.683	1.001	0.991
RDT&E Articles Quantity				

Obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.770	2.335	3.222
RDT&E Articles Quantity				

Develop IND countermeasures procedures and participate in exercises and joint working groups.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.864	5.410	5.813
RDT&E Articles Quantity				

Obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604654N/Joint Service EOD Development Engineering	1829/EOD Procedures

(U) C. PROGRAM CHANGE SUMMARY:

	FY 2005	FY 2006	FY 07
(U) Funding:			
Previous President's Budget	8.979	8.880	10.017
(FY06 Pres Controls)			
Current BES/President's Budget	9.277	8.746	10.026
(FY07 Pres Controls)			
Total Adjustments	0.298	-0.134	0.009
Summary of Adjustments			
Programmatic Changes	0.320	0.000	0.009
Other general provisions	-0.022	-0.134	0.000
Subtotal	0.298	-0.134	0.009

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 122

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604654N/Joint Service EOD Development Engineering	1829/EOD Procedures

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not applicable									

(U) E. ACQUISITION STRATEGY: *

This is a non-acquisition program.

(U) F. MAJOR PERFORMERS: **

Funding is executed by Naval Explosive Ordnance Disposal Technology Division located in Indian Head, MD and the Office of Naval Intelligence located in Suitland, MD in FY05 through FY07. The funding is used to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.

*** Not required for Budget Activities 1,2,3, and 6**
**** Required for DON and OSD submit only.**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604654N/Joint Service EOD Development Engineering			PROJECT NUMBER AND NAME 1829/EOD Procedures								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RSP Development	WX	EODTD, Indian Head, MD	154.051			6.633	10/04	0.686	10/05	0.698	10/06	Continuing	Continuing	
IND Countermeasures	WX	EODTD, Indian Head, MD	26.420			0.584	10/04	1.991	10/05	2.673	10/06	Continuing	Continuing	
Foreign Mine Acquisition	WX	EODTD, Indian Head, MD	5.042			0.657	10/04	4.512	10/05	4.928	10/06	Continuing	Continuing	
Program Management Personnel	WX	EODTD, Indian Head, MD	2.045			0.200	10/04	0.225	10/05	0.225	10/06	Continuing	Continuing	
Miscellaneous	Various	Various	7.718			1.203	10/04	1.332	10/05	1.502	10/06	Continuing	Continuing	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			195.276			9.277		8.746		10.026		0.000	223.325	
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	
Remarks:														

R-1 SHOPPING LIST - Item No. 122

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604654N/Joint Service EOD Development Engineering			PROJECT NUMBER AND NAME 1829/EOD Procedures									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	
													0.000	
Subtotal T&E			0.000			0.000		0.000				0.000	0.000	
Remarks:														
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Management			0.000			0.000		0.000				0.000	0.000	
Remarks:														
Total Cost			195.276			9.277		8.746		10.026		0.000	223.325	
Remarks:														

R-1 SHOPPING LIST - Item No. 122

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604703N, MANPOWER, PERSONNEL, TRAINING, SIM, & HF	
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	18.361	5.150	8.754	8.775	8.798	8.740	8.736
1822 MANPOWER, PERSONNEL, TRAINING, SIM, & HF	1.933	1.962	2.711	2.696	2.699	2.758	2.808
3089 SCIENCE AND TECHNOLOGY TRAINING	16.428	1.088	6.043	6.079	6.099	5.982	5.928
9999 Congressional Add		2.100					

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

Project 1822, Manpower, Personnel, Training SIM, & HF: This non-acquisition category program provides funds for continued R&D for broader application of advanced training technologies and the science of learning to transition successful 6.3 research proof of concept demonstrations and rapid prototyping of COTS/GOTS technologies into operation use.

Project 3089, Science and Technology Training Transition: Every major study on Navy Training (e.g. Zero-based Review (ZBT), Navy Research Advisory Committee (NRAC), Naval Studies Board, Executive Review of Navy Training (ERNT), Strategic Studies Group, Revolution in Training (SSG RIT)) conducted over the past decade has indicated the need for a Development, Test and Evaluation (D, T&E) program for training technologies. This non-acquisition category program provides funds for continued R&D for broader application of advanced training technologies and the science of learning to transition emerging successful 6.3 research proof of concept demonstrations and rapid prototyping of COTS/GOTS technologies into operational use. Development of prototype systems to support and/or improve operational requirements of training sponsors is the primary goal of this Engineering Development Program. Demonstrations of the 6.3 R&D training technologies have significantly reduced knowledge acquisition times and cost to the Navy. For example, intelligent tutoring has been shown to significantly reduce time (up to 30%) to acquire complex knowledge and skills, and accelerate knowledge acquisition (by 1-2 standard deviation) over traditional training methods. Team dimensional training has demonstrated up to a 60% improvement in tactical teamwork skills. 6.3 programs like Interactive Multisensor Analysis Training (IMAT), and visualization technologies have decreased time to qualify and have been documented and endorsed as a fleet requirement. Reduced manning initiatives require training solutions that will accomplish the training in less time and with fewer instructors. Current acquisition initiatives are unable to incorporate many of the technology developments that would reduce training time and trainers due to the lack of funds to support prototype development on specific platforms or at schoolhouses. This 6.3 program features the use of a broad range of maturing technologies from the science of learning and cognitive science, learning object design design and development, learning delivery technologies, and human performance technologies and also push the envelope on new technologies. Further Engineering Development and Test/Evaluation is needed in support of the Capable Manpower Future Naval Capability investment strategy to prepare technologies for Fleet/School implementation.

Project 9999, Congressional Add. 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.

FY 05 only: Battle Stations-21 (BS-21) complex for the Recruit Training Command, Great Lakes, Illinois consists of the BS-21 trainer design of shell improvements, fixed equipment, relocation of equipment, complex improvements, and outfitting of the BS-21 trainer. Battle Stations is the capstone event of Navy Basic Military Training. The various scenarios presented during Battle Stations will provide new sailors with the tools to deal with real-life combat scenarios. The exercise has previously been conducted in five different buildings throughout the base, using a variety of low-tech simulations. The new BS-21 complex will use modern special effects equipment from the entertainment and theme park industries, combined with reality-based immersive Navy training scenarios to provide a more experience-based effective learning environment for new recruits.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOP| BA 5	R-1 ITEM NOMENCLATURE 0604703N, MANPOWER, PERSONNEL, TRAINING, SIM, & HF

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2005
FY 06 President's Budget	2.958	3.097	4.031
FY07 President's Budget	18.361	3.050	8.754
Total Adjustments	15.403	-0.047	4.723
Summary of Adjustments			
Congressional Undistributed Reductions	-0.511	-0.033	
Congressional Increases	0.002		
Economic Assumptions		-0.014	0.097
Program Adjustments	15.912	_____	4.626
Subtotal	15.403	-0.047	4.723

Changes are due to realignment of OPN funds to RDT&E, N for Battlestations 21.

C. OTHER PROGRAM FUNDING SUMMARY:

Not Applicable

D. ACQUISITION STRATEGY:

Acquisition strategy will rely on extensive market surveillance and market research and include a combination of competitive commercial and non-developmental item procurements with competitive integration and support contracts. Most hardware/software system contracts will be firm-fixed price. Integration and support contracts will be a combination of firm-fixed price and cost type contracts. Project will use an integrated project team approach to manage the requirements, development, integration, testing and support of fielded prototypes.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604703N, Manpower, Personnel, Training, Simulation, and Human Factors	PROJECT NUMBER AND NAME 1822/Manpower, Personnel, Training, Sim, and HF	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
1822 Manpower, Personnel, Training, Sim and Human Factor	**1.933**	**1.962**	**2.711**	**2.696**	**2.699**	**2.758**	**2.808**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

1822/Manpower, Personnel, Training, Sim, and Human Factors 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.

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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME 0604703N, MANPOWER, PERSONNEL, TRAINING, SIMULATION, & HF	PROJECT NUMBER AND NAME 1822/Manpower, Personnel, Training, Sim, and HF

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	1.933	1.282	.782
RDT&E Articles Qty			

Completed prototype development of CNP Quick Polling System for Military. Continued prototype development of URL Officer Career Path Simulation model. Finalize input and output reporting requirements and prepare for full implementation. Extended application of the model to Submarine and Fleet Support Officer Communities. Validate the model across all URL communities. Continued 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. Continued prototype development of the Models of Navy Compensation and Personnel Behavior (MODCOMP). Continued 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. Continued 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 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. Started transition of Enterprise Management System. R&D support to Retention Goaling.

Scenario Based Performance Assessment & Diagnosis	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		.680	
RDT&E Articles Qty			

Begin transition of Non-Cognitive Measures. Begin transition of Attrition Reduction Technologies.

COTS/GOTS Simulation Engines	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost			1.929
RDT&E Articles Quantity			

Complete prototype development of TCARM. Continue prototype development of Non-Cognitive Measures. Continue prototype development of Attrition Reduction Technologies. Begin prototype development of Career Case Manager Technologies. Begin prototype development of Distribution Incentives System (DIS).

			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME 0604703N, MANPOWER, PERSONNEL, TRAINING, SIMULATION, & HF	PROJECT NUMBER AND NAME 3089, SCIENCE AND TECHNOLOGY TRAINING TRANSITION	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
3089 SCIENCE AND TECHNOLOGY TRAINING	16.428	1.088	6.043	6.079	6.099	5.982	5.928
RDT&E Articles Qty	4	3	3	3	3	3	3

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

U) Every major study on Navy Training (e.g. Zero-based Review (ZBT), Navy Research Advisory Committee (NRAC), Naval Studies Board, Executive Review of Navy Training (ERNT), Strategic Studies Group, Revolution in Training (SSG RIT)) conducted over the past decade has indicated the need for a Development, Test and Evaluation (D, T&E) program for emerging training technologies. This non-acquisition category program provides funds for continued R&D for broader application of advanced training technologies and the science of learning to transition successful 6.3 research proof of concept demonstrations and rapid prototyping of COTS/GOTS technologies into operational use. Development of prototype systems to support and/or improve operational requirements of training sponsors is the primary goal of this Engineering Development Program. Demonstrations of the 6.3 R&D training technologies have significantly reduced knowledge acquisition times and cost to the Navy. For example, intelligent tutoring has been shown to significantly reduce time (up to 30%) to acquire complex knowledge and skills, and accelerate knowledge acquisition (by 1-2 standard deviation) over traditional training methods. Team dimensional training has demonstrated up to a 60% improvement in tactical teamwork skills. 6.3 programs like Interactive Multisensor Analysis Training (IMAT), and visualization technologies have decreased time to qualify and have been documented and endorsed as a fleet requirement. Reduced manning initiatives require training solutions that will accomplish the training in less time and with fewer instructors. Current acquisition initiatives are unable to incorporate many of the technology developments that would reduce training time and trainers due to the lack of funds to support prototype development on specific platforms or at schoolhouses. This 6.3 program features the use of a broad range of maturing technologies from the science of learning and cognitive science, learning object design and development, learning delivery technologies, and human performance technologies and also push the envelope on new technologies. Further Engineering Development and Test/Evaluation is needed in support of the Capable Manpower Future Naval Capability investment strategy to prepare technologies for Fleet/School implementation.

FY 05 only: Battle Stations-21 (BS-21) complex for the Recruit Training Command, Great Lakes, Illinois consists of the BS-21 trainer design of shell improvements, fixed equipment, relocation of equipment, complex improvements, and outfitting of the BS-21 trainer. Battle Stations is the capstone event of Navy Basic Military Training. The various scenarios presented during Battle Stations will provide new sailors with the tools to deal with real-life combat scenarios. The exercise has previously been conducted in five different buildings throughout the base, using a variety of low-tech simulations. The new BS-21 complex will use modern special effects equipment from the entertainment and theme park industries, combined with reality-based immersive Navy training scenarios to provide a more experience-based effective learning environment for new recruits.

			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME 0604703N, MANPOWER, PERSONNEL, TRAINING, SIMULATION, & HF	PROJECT NUMBER AND NAME 3089, SCIENCE AND TECHNOLOGY TRAINING TRANSITION

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

BattleStations 21	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	15.456		
RDT&E Articles Qty	1		

Objective: Battle Stations-21 (BS-21) complex for the Recruit Training Command, Great Lakes, Illinois consists of the BS-21 trainer design of shell improvements, fixed equipment, relocation of equipment, complex improvements, and outfitting of the BS-21 trainer. Battle Stations is the capstone event of Navy Basic Military Training. The various scenarios presented during Battle Stations will provide new sailors with the tools to deal with real-life combat scenarios. The exercise has previously been conducted in five different buildings throughout the base, using a variety of low-tech simulations. The new BS-21 complex will use modern special effects equipment from the entertainment and theme park industries, combined with reality-based immersive Navy training scenarios to provide a more experience-based effective learning environment for new recruits.

Scenario Based Performance Assessment & Diagnosis	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.391	.424	5.136
RDT&E Articles Qty	1	1	1

Objective: Develop and integrate tools and technologies for 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 the Fleet and Total Force training audience with electronic performance support for human performance assessment, scenario design, . Prototype capability would support the Fleet in the rapid authoring of various types of human performance metrics and assessment methods to be used in training individuals and teams while deployed. FY06 deliverable will be an integration test using algorithm-based assessment methods for a selected community or platform in the Navy. FY07 deliverable will extend 06 effort into other communities and provide improved user interface and tool set. FY07 $5M increase for Integrated Learning Environment (ILE) key delivery system design, intergration effort and assessment capability.

COTS/GOTS Simulation Engines	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.104	0.272	0.483
RDT&E Articles Quantity	1	1	1

Develop prototype low-cost COTS/GOTS simulation systems. The program would leverage work done on micro-simulator systems, interoperability using the high level architecture (HLA), team dimensional training, PC-based simulation, and human performance measurement to provide very low-cost (<$100K per unit) part-task devices and reusa ble simulation objects to increase participant access to existing distributed simulation and distributed learning networks. FY06 deliverables will be a demonstration of an open source gaming engine interfaced with the ILE Learning Management System and interface specification, and a specification for reusable simulation objects with working prototype that allows scenario-based authoring of attributes, characteristics, and behaviors of common simulation objects (e.g. general purpose electronic test equipment).

E- learning Tools for Diagnosis and Assessment	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.477	0.392	0.424
RDT&E Articles Quantity	1	1	1

Develop prototype E-learning mentoring, tutoring, skills and performance support tools and develop prototype models and capability in successive spiral updates to ILE capability. 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, learning content management systems, authoring tools, skills and 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 successive spirals of capability to include development guidelines and standards so that publications, technical specifications & data, training data, and learning assets, fully integrated with job, skill, and performance data. Capabilities at each spiral will support 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. FY06 deliverable will be an integrated user interface, and web services development effort for end-to-end data capture and mapping of skills and job task data to learning content, learning objectives, and learning assessments. FY07 deliverable will be a major revision to the 06 product.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 5		0604703N, MANPOWER, PERSONNEL, TRAINING, SIMULATION & HUMAN FACTORS				W3089, SCIENCE AND TECHNOLOGY TRAINING TRANSITION						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Other Contracts	C-FFP	JAMES MCHUGH CONST. CO., CHICAGO, IL		15.066	1/1/2005						15.066	15.066
Other Contracts	C-FFP	KNOWLEDGE ANALYSIS TECH. LLC, BOULDER, CO				.150	1/1/2005				.150	.150
Training Development	WX	NAWCTSD, ORLANDO FL		.391	1/1/2005	.215	1/1/2006	2.214	1/1/2007	8.987	11.807	
SUBTOTAL PRODUCT DEVELOPMEN				15.457		.365		2.214		8.987	27.023	
Remarks:												
SUPPORT												
Software Development	WX	NAVAL POSTGRADUATE SCHOOL, MONTEREY, CA	.161			.125	1/1/2006	2.876	1/1/2007		3.162	
Software Development	C-FFP	KNOWLEDGE ANALYSIS TECH. LLC, BOULDER, CO		.129	VARIOUS	.150	VARIOUS	.900	VARIOUS	15.600	16.779	16.779
Studies & Analyses	C-FFP	UCLA CRESST, LA, CA	.682	.357	VARIOUS	.408	VARIOUS				1.447	1.447
Studies & Analyses	C-FFP	JAMES MCHUGH CONST. CO., CHICAGO, IL		.485	1/1/2005						.485	.485
SUBTOTAL SUPPORT			.843	.971		.683		3.776		15.600	21.873	
Remarks:												
TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												
Remarks:												
MANAGEMENT												
Program Management Support	WR	NAWCTSD, ORLANDO FL				.040	1/1/2006	.053	1/1/2007	.264	.357	
SUBTOTAL MANAGEMENT						.040		.053		.264	.357	
Remarks:												
Total Cost			.843	16.428		1.088		6.043		24.851	49.253	

Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile				DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME
RDT&E, N /	PE0604703N, Manpower,Personnel,Training, Simulation, and Human Factors			3089, Science and Technology Training Transition

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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
Scenario based Performance Assessment & Diagnosis																												
For BattleStations 21																												
For Individual Training/ ILE																												
Spiral 1- PM																												
Spiral 2- Assessment																												
Spiral 3 - Diagnosis																												
For Fleet Training																												
Spiral 1- PM																												
Spiral 2- Assessment																												
Spiral 3 - Diagnosis																												
COTS/GOTS Simulation Engines																												
For Individual Training/ ILE																												
Spiral 1- Stand alone																												
Spiral 2- Networked/ Interoperable																												
Spiral 3 - Distributed																												
For Fleet Training																												
Spiral 1- Stand alone																												
Spiral 2- Networked/ Interoperable																												
Spiral 3 - Distributed																												
E- learning Tools for Diagnosis and Assessment																												
For Individual Training/ ILE																												
Spiral 1- PM																												
Spiral 2- Assessment																												
Spiral 3 - Diagnosis																												
For Fleet Training																												
Spiral 1- PM																												
Spiral 2- Assessment																												
Spiral 3 - Diagnosis																												
Deliverables																												
Report - Study Results				△				△				△				△				△				△				△
Prototype Demonstration			△				△				△				△				△				△				△	
Systems Requirements Specifications (SRS)				△				△				△				△				△				△				△

CLASSIFICATION:

Exhibit R-4a, Schedule Detail

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE0604703N, Manpower,Personnel,Training, Simulation, and Human Factors	3089, Science and Technology Training Transition

Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Scenario based Performance Assessment & Diagnosis							
For BattleStations 21							
--Analysis/Studies	2Q-4Q						
--Prototype Development		1Q-3Q					
--Systems Requirements Specifications (SRS)		4Q					
For Individual Training/Integrated Learning Environment (ILE)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
--Analysis/Studies	1Q-2Q	1Q-2Q	1Q-2Q	1Q-2Q			
--Prototype Development	2Q-3Q	2Q-3Q	2Q-3Q	2Q-3Q			
--Systems Requirements Specifications (SRS)	4Q	4Q	4Q	4Q			
For Fleet Training				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
--Analysis/Studies				1Q-2Q	1Q-2Q	1Q-2Q	1Q-2Q
--Prototype Development				2Q-3Q	2Q-3Q	2Q-3Q	2Q-3Q
--Systems Requirements Specifications (SRS)				4Q	4Q	4Q	4Q
COTS/GOTS Simulation Engines							
For Individual Training/Integrated Learning Environment (ILE)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
--Analysis/Studies		1Q-2Q	1Q-2Q	1Q-2Q	1Q-2Q		
-Prototype Development		2Q-3Q	2Q-3Q	2Q-3Q	2Q-3Q		
--Systems Requirements Specifications (SRS)		4Q	4Q	4Q	4Q		
For Fleet Training					1Q-4Q	1Q-4Q	1Q-4Q
--Analysis/Studies					1Q-2Q	1Q-2Q	1Q-2Q
--Prototype Development					2Q-3Q	2Q-3Q	2Q-3Q
--Systems Requirements Specifications (SRS)					4Q	4Q	4Q
E- learning Tools for Diagnosis and Assessment							
For Individual Training/Integrated Learning Environment (ILE)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
--Analysis/Studies	1Q-2Q	1Q-2Q	1Q-2Q	1Q-2Q			
--Prototype Development	2Q-3Q	2Q-3Q	2Q-3Q	2Q-3Q			
--Systems Requirements Specifications (SRS)	4Q	4Q	4Q	4Q			
For Fleet Training				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
--Analysis/Studies				1Q-2Q	1Q-2Q	1Q-2Q	1Q-2Q
--Prototype Development				2Q-3Q	2Q-3Q	2Q-3Q	2Q-3Q
--Systems Requirements Specifications (SRS)				4Q	4Q	4Q	4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604703N, Manpower, Personnel, Training, Simulation, and Human Factors			PROJECT NUMBER AND NAME 9999, Congressional Adds			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9999, Congressional Adds	**0.000**	**2.100**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty							

9786 Human System design support tool	FY 2005	FY 2006
		2.1
Transition Models and Tools developed under earlier SEAPRINT/IMPRINT-N Initiatives.		

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5

R-1 ITEM NOMENCLATURE

PE 0604721N Battle Group Passive Horizon Extension System

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2011
Total PE Cost	**29.677**	**32.779**						
2134/SHIPBOARD IW EXPLOIT	**17.799**	**18.179**						
9999/Congressional Adds	**11.878**	**14.600**						
Quantity of RDT&E Articles								

Shipboard IW migrates to PE 0304785N (Tactical Cryptologic Systems) beginning FY07.

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Shipboard Information Warfare line includes the following programs: Ships Signal Exploitation Equipment (SSEE), the Program of Record that executes the Maritime Cryptologic Systems for the 21st Century (MCS 21) and Communications Data Link System (CDLS) the Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed IMINIT (Imagery Intelligence). These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

Military Intelligence Program (MIP), formerly TIARA (DOD 7000.14)
Congressional Adds *:
NAVY INTELLIGENT AGENT SECURITY MODULE (IASM): – Offensive Capabilities (program name recently changed to Sensing, Warning, and Response Manager (SWARM)). Funds provided for Small Business Innovation Research (SBIR) II research, development, testing and evaluation of newly designed "Offensive capabilities technology for the IASM . Assures information dominance and superiority against threats with forensics and countermeasure options.

AIRBORNE COMMUNICATIONS INTERCEPT POD (ACIF): - Funds will support the test and evaluation of communications module; documentation; test and evaluation of additional interface capabilities for different type aircraft. Test and evaluation of antennas for airborne pod operation. The add will also provide engineering support for flight clearances and for test support engineering.

ANTI-TERRORISM TECHNOLOGY SURVEILLANCE SYSTEM (ATTSS): - Funds will support Phase III SBIR to ATTSS for the development of 2 Engineering Development Models to be provided to the Mobile Inshore Undersea Warfare System Upgrade (MIUW-SU).

SHIPBOARD INFORMATION WARFARE EXPLOIT: - Funds are to develop organic Electronic Intelligence (ELINT) collection, response, processing and integration, which will provide individual ships with an integrated and consolidated SIGINT picture of the threat battle space. This add will address the ORD requirements to provide SSEE with a tactical organic ELINT capability.

SHIPS SIGNAL EXPLOITATION EQUIPMENT (SSEE): - Funds will provide enhancements to SSEE using commercial off the shelf hardware such as Field Programmable Gate Arrays (FPGAs). SSEE is an adaptable system that can accommodate new threat signals through software updates. Emergent signals place increased demand on system processing requirements. At the same time, opportunities exist to expand system capabilities through the use of new COTS FPGA boards to increase processing capability without increasing system cost.

SMART SIGNAL PARSER AND ACTIONABLE INTELLIGENCE: - Funds are provided to develop and expand the applied Special Signal rule set and to expand the subject signal set to cover the larger number of signal types that are required. Obtain message textual para data for special signal case to create template module to process new bit data; to expand the AIE data mining capability to cover additional signal types and expand actionable intelligence extraction rule set that permit automated actionable intelligence extraction of other key signals of interest in the war on terror.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-5**	R-1 ITEM NOMENCLATURE PE 0604721N Battle Group Passive Horizon Extension System

Congressional Adds Continued:

COOPERATIVE OUTBOARD LOGISTICS UPGRADE (COBLU) - NETWORK CENTRIC WARFARE ENHANCEMENTS - The COBLU system will provide enhanced capabilities which will facilitate the integration of Control and Coordination Software that enables multiple COBLU systems to be operated remotely in compliance within the FORCEnet constructs; coordinate resources and reduce system manning; and enable the distributed operation of COBLU systems allowing operators to be remotely located at an RSOC or a COBLU operator on one platform to task and utilize a second COBLU on another platform. As part of this effort, interface software between COBLU and DIO-S will be provided and an at-sea technology demonstration will be conducted.

ADVANCED TACTICAL COMMUNICATIONS INTERCEPT - (ACTIC) is a remote, IP based sensor system developed to provide Carrier Strike Group (CSG)/Expeditionary Strike Group (ESG) personnel access to adversary wireless communication signals and will be used for signal exploitation. Designed for shipboard use and to be carried by unmanned air vehicles and fixed wing aircraft, it will provide deployed Naval and Marine Forces with a persistent over-the horizon SIGINT capability under their direct operational control.

REMOTE SENSING AND DATA MANAGEMENT - Remote Sensing and Data Management is a multiple wireless sensors which will be installed in shipping containers including video imagery, and anti-tamper devices. Sensor data will be gathered by either a handheld device or a standalone hub, and will be stored in a sensor monitoring database for analysis and display using web based technology.

TAPERED SLOT ANTENNA - A tapered slot antenna has been developed to collect modern hostile threat communications signals. The prototype was initially developed with National Security Agency (NSA) Tactical SIGINT Technology (TST) funding. Additionally needed technology upgrades have been identified to further improve antenna functionality and to enhance its ability for hostile/threat emitter detection, which will be back fitted as future engineering change proposals (ECPs) to the tapered slot antenna system. Accelerated development of these urgently needed tapered slot antenna upgrades will significantly enhance SSEE Increments E's ability to both collect and process signals for Indications and Warning (I&W) more accurate cuing of sensors, improved COMINT and Electronics Intelligence (ELINT) signal exploitation and more timely support for Time Critical Strike operations. Additional development to the Tapered Slot Antenna will incorporate the latest advances in digital technology and provide the Navy with its first truly multi-function antenna suitable for simultaneous direction Finding (DF), signal acquisition and Information Operations (IO).

TREXIMILDEC TACTICAL TARGET GENERATOR SYSTEM - MILDEC Tactical Target Generator (TTG) will provide both offensive and defensive Information Operations (IO) and Military Deception (MILDEC) capabilities for military aircraft against current and future hostile air defense systems. In the offensive mode, the TTG will provide a tactical IO capability for airborne platforms to electronically stimulate hostile air defense acquisition and tracking radars so they can be detected and located by National and tactical sensors, and then be destroyed by US or coalition forces. In the defensive mode, the TTG will enable tactical airborne platforms (manned, unmanned, fixed wing or rotary) to successfully enter, transit and egress hostile territory by appearing as a non-threatening air contact.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5	PE 0604721N Battle Group Passive Horizon Extension System

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY2006 President's Budget	29.966	18.456	17.736
FY2007 Budget Estimate	29.677	32.779	0
Total Adjustments	-0.289	14.323	-17.736
Summary of Adjustments			
Department of Energy Transfer	-0.023		
Nuclear Physical Security (OSD-09)	0.005		
Trusted Foundry (OSD-09)	0.019		
Small Business Innovation Research (SBIR)	-0.290		
Congressional Adds		14.600	
SEC. 8125 Revised Economic Adjustments		-0.084	
Congressional Action 1% Reduction		-0.193	
FORCEnet Shipboard IW Prgram Increase			4.450
Realigns Shipboard IW Exploit R&D Project to correct PE			-22.186
Subtotal	-0.289	14.323	-17.736

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**17.799**	**18.179**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
RDT&E Articles Qty								

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

The Shipboard Information Warfare line includes the following programs: Ships Signal Exploitation Equipment (SSEE), the Program of Record that executes the Maritime Cryptologic Systems for the 21st Century (MCS 21) and Communications Data Link System (CDLS) the Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed IMINIT (Imagery Intelligence). These systems provide the Battle Group with real time Indications and Warnings (I & W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

Military Intelligence Program (MIP), formerly TIARA (DOD 7000.14)

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	4.000	0.600	0.000	
RDT&E Articles Quantity				

Communications Data Link- System (CDLS)

FY05 - Designed and Developed CDLS Interfaces to Phased Array Antenna Systems. Integrated and Tested Cooperative Antenna Program Sub-array Assemblies. Designed and developed CDLS Spiral 1 Advanced Networking Technology Insertion Kit. Continued Vendor Interoperability and Integration Testing with emerging Navy sensor systems such as BAMS, MMA, GHMD, F/A-18 SHARP, P-3C AIP, and EP-3E Multi-int systems. Design and Develop KGV-135A communications security Module. Design and Develop CDLS Interfaces with Automated Data Network System (ADNS). Developed Joint Tactical Radio Systems (JTRS) Software Communications Architecture (SCA) Core Framework for CDLS.
FY06 - Continue Integration and Test of Phased Array Antenna Systems sub-array assemblies. Continue Vendor Interoperability and Integration Testing with emerging Navy sensor systems such as BAMS, MMA, GHMD, F/A-18 SHARP, P-3C AIP, and EP-3E Multi-int systems. Continue Design and Develop KGV-135A COMSEC Module.

Note: Name change from CDL-N Block 1 to CDLS.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.800	0.000	0.000	
RDT&E Articles Quantity				

Cryptologic On-Line Trainer (COLT)

FY05 - Completed modifications and improvements to COLT server in support of CUB 5.X integration. Upgraded existing COLT client applications (SSEE Inc E, COBLU Phase 1, and CDF). Completed COLT Battle Force Tactical Trainer (BFTT) integration development.

Note: Current migration plan for COLT to be integrated into the SSEE Program.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	1.000	0.000	0.000	
RDT&E Articles Quantity				

Cryptologic Unified Build (CUB)

FY05 - Completed development and integration of CUB software to incorporate DII COE 4.Y baseline. This development effort completed the DII COE 4.Y baseline. Completed development of CUB On-Line Tutorial, CUBOLT software.

*DII COE - Defense Information Infrastructure (DII) Common Operating Environment (COE)

Note: Current migration plan for CUB to be integrated into the SSEE Program.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	3.763	1.000	0.000	
RDT&E Articles Quantity				

Multi-Mission Payload (MMP)

FY05 - Completed development of the EDMs pod and conduct laboratory acceptance tests. Obtained Flight Certification and completed testing. Performed land-based flight tests and demonstrations.
FY06 - Completed carrier launch qualifications and performed flight demonstrations on carrier launched aircraft.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	5.133	14.349	0.000	
RDT&E Articles Quantity				

Ship Signal Exploitation Equipment

FY05 - Continued with effort to improve Command and Control software portion of the HITS in SSEE Inc E. Continued to expand Signals of Interest (SOI) processing capability to priority signal sets. Fully tested improved software. Initiated acquisition development for follow-on increments.
FY06 - Continue with effort to improve Command and Control software portion of the HITS in SSEE Incre E. Continue to expand SOI processing capability to priority signal sets. Fully test improved software. Modify COLT server to upgrade current software releases. Continue development and integration of Cryptologic Unified Build (CUB) software. Begin SSEE Inc F development to support Engineering Development Models (EDMs), system design, integration , testing and remoting of manned and unmanned platforms.
ed platforms.

Note: CUB and COLT will be migrated into SSEE Program beginning FY 06.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	1.603	1.230	0.000	
RDT&E Articles Quantity				

Specific Emitter Identification (SEI)

FY05 - Continued to improve SEI software Phase III to support additional tactical installations, surface combatants, and airborne platforms. Enhanced the exchange of Navy SEI data. Began incorporation of future SEI algorithms corresponding to the next generation of multi-mission combatants and changing target sets. Continued incorporation of SEI into the overall Navy EW architecture for enhanced correlation and integration into Navy single platform distributed EW systems, which included surface, subsurface, and airborne.
FY06 - Continue incorporation of next generation SEI algorithms into existing fielded SEI systems with new algorithms and software. Increase capabilities to distribute and utilize SEI data in network centric architectures. Enhance automation capabilities of SEI collection, processing, and reporting software. Integrate geolocation information with SEI systems. Continue incorporation of SEI into ELINT and the overall Navy EW architecture, and use of COTS hardware for SEI data extraction. Develop software enhancements in GCCS-M, GALE Lite, and other fielded systems to support next generation SEI capabilities and data types. Pursue SEI-based deinterleaving for tactical and high volume collectors. Pursue enhanced SEI algorithms and techniques.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	1.500	1.000	0.000	
RDT&E Articles Quantity				

Antenna & RF Distribution

FY05 - Updated requirements analysis to maintain growing Signals of Interest (SOI) threat capability support via system radio frequency distribution (RFD) unit and future antenna upgrades. Continued development of future antenna for low signature direction Finding (DF) and acquisition/enhanced performance.
FY06 - Continue development of antenna & radio frequency (RF) tools to enhance future capabilities via new technologies, EDM development, testing and certification.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPN Line 2360	68.454	58.991	70.782	67.333	91.484	104.013	87.937

(U) D. ACQUISITION STRATEGY: *

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.

(U) E. MAJOR PERFORMERS:

N/A

(U) F. METRICS:

Earned Value Management (EVM) is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	39.994	3.955	12/04	5.350	12/05					
Ancillary Hardware Development												
Systems Engineering	Various	Various	6.669	5.074		4.397						
Training Development	Various	Various	0.168	0.075		0.093						
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			46.831	9.104		9.840						

Remarks:

Development Support												
Software Development	Various	Various	10.549	3.738		3.811						
Training Development												
Integrated Logistics Support	Various	Various	0.485	0.136		0.130						
Configuration Management	Various	Various	0.199	0.117		0.120						
Technical Data												
GFE												
Subtotal Support			11.233	3.991		4.061						

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: February 2006

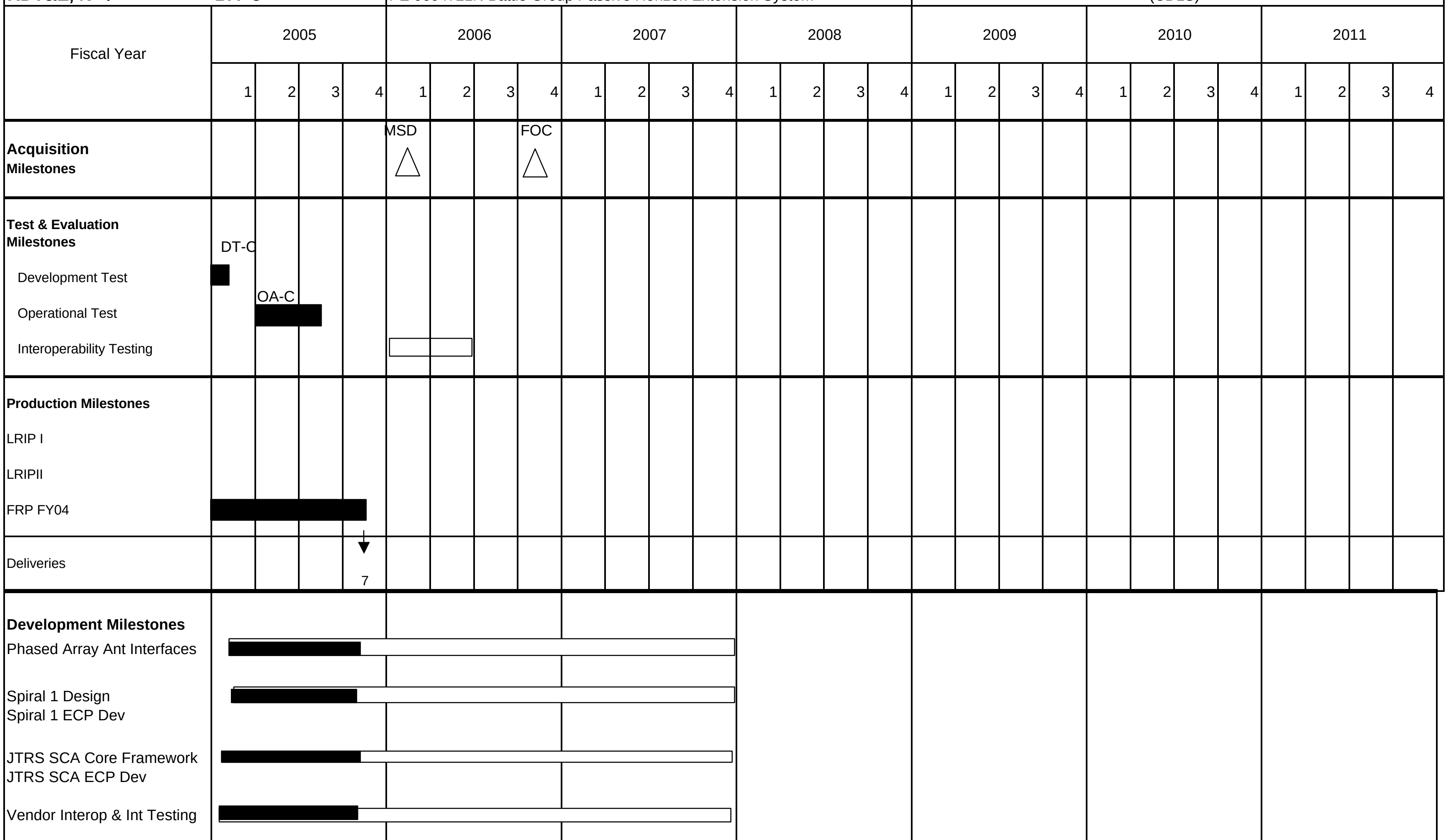
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134/SHIPBOARD IW EXPLOIT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	3.927	0.927	12/04	0.868	12/05					
Operational Test & Evaluation	Various	Various	0.716	0.421		0.395						
Live Fire Test & Evaluation												
Test Assets	Various	Various	0.746	0.439		0.412						
Tooling												
GFE												
Subtotal T&E			5.389	1.787		1.675						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Various	5.923	2.765		2.461						
Travel	Various	Various	0.257	0.152		0.142						
Subtotal Management			6.180	2.917		2.603						
Remarks:												
Total Cost			69.633	17.799	0.000	18.179	0.000					
Remarks:												

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/COMMUNICATIONS DATA LINK-SYSTEM (CDLS)



R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/COMMUNICATIONS DATA LINK-SYSTEM (CDLS)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Material Support Date		Q1						
Full Operational Capability		Q4						
Developmental Testing (DT)	Q1							
Operational Analysis	Q2-Q3							
Interoperability Testing		Q1-Q2						
Phased Array Antenna Interfaces	Q1-Q4	Q1-Q4						
Spiral 1 Design	Q1-Q4		Q1-Q4					
Spiral 1 ECP Dev			Q4					
JTRS SCA Core Framework	Q1-Q4							
Vendor Interoperability and Integration Testing	Q1-Q4	Q1-Q4	Q1-Q4					

R-1 SHOPPING LIST - Item No. 124

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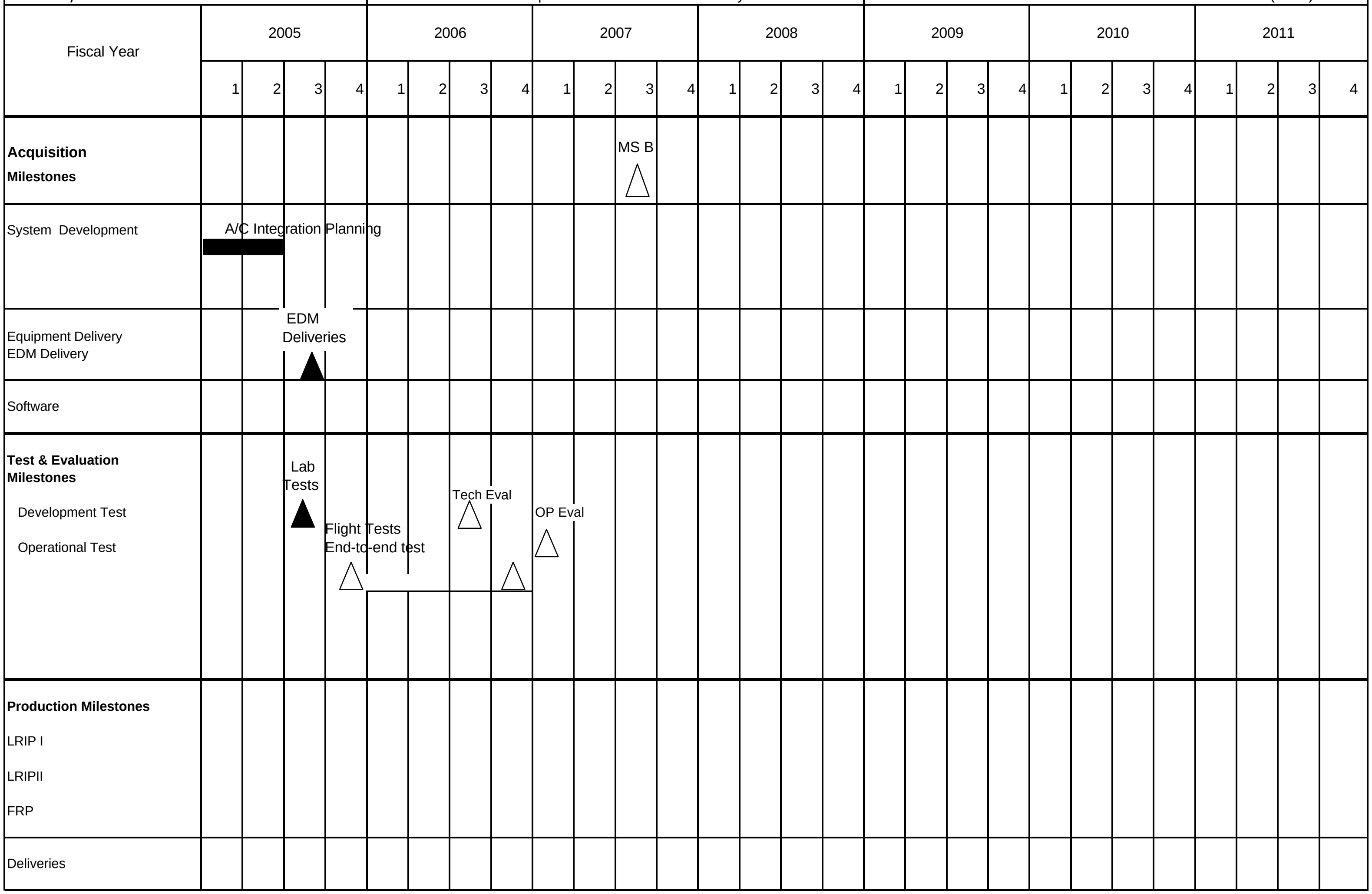
Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	**Multi-Mission Payload**	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/MULTI-MISSION PAYLOAD (MMP)



R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	2134 SHIPBOARD IW EXPLOIT/MULTI-MISSION PAYLOAD (MMP)

Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
EDM Award								
Update Analysis of Alternatives								
Design Review								
Aircraft Integration Planning	Q1-Q2							
Laboratory Acceptance Tests	Q3							
Eng Dev Model (EDM) Deliveries - Lab	Q3							
Flight Tests	Q4	Q2-Q4						
Technical Evaluation		Q3						
Operational Evaluation			Q1					
Milestone B Decision			Q3					

R-1 SHOPPING LIST - Item No. 124

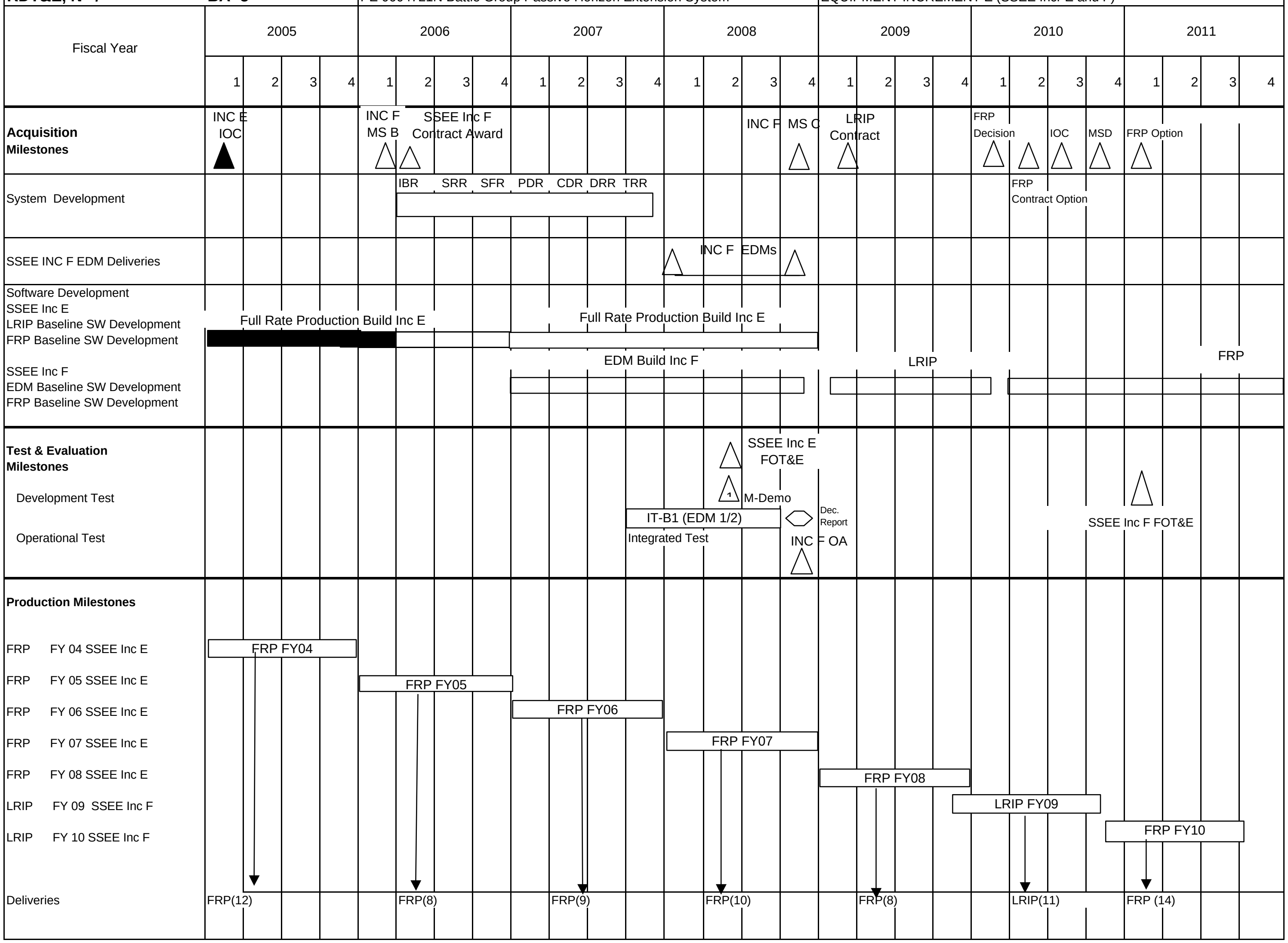
KLSERDUG,: PLJUDWHV WR 3(1 7DFWLFDO &U\SWRORJLF 6\VWHPV EHJLQQLQJ)<

Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

IBR SRR SFR PDR CDR DRR TRR

CLASSIFICATION:

EXHIBIT R4, Schedule Profile **SHIPS SIGNAL EXPLOITATION EQUIPMENT INCREMENT E (SSEE Incr E)**		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL EXPLOITATION EQUIPMENT INCREMENT E (SSEE Incr E and F)



R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL EXPLOITATION EQUIPMENT INCR E (SSEE Incr E)			
Schedule Profile	FY2005	FY2006	FY2007	FY 2008	FY 2009	FY 2010	FY 2011	
Increment E								
Follow-On Test & Evaluation (FOTE)				Q2				
IOC	Q1							
Full Rate Production	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4				
Pre-Planned Improvements (P3I)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4				
Increment F								
Milestone II (MS B)		Q1						
Contract Award		Q2						
IBR/SBR/SFR/PDR/CDR/DRR/TRR		Q2-Q4	Q1-Q4					
Developmental Testing				Q2-Q4				
Operational Testing					Q4			
EDM SSEE Delivery - Ship				Q1-Q4				
Milestone III (MS C)LRIP/FRP Decision				Q4				
Production Start						Q1		
Material Support Date						Q4		
IOC						Q3		
LRIP					Q1			
Full Rate Production (FRP)						Q2		
Follow-On Test & Evaluation (FOT&E)							Q1	

R-1 SHOPPING LIST - Item No. 124

SSEE is a spiral development program.

FY09 will introduce a future Increment with new antenna design and P3I.

**** Shipboard IW migrates from PE 0604721N (Battle Group Passive Horizon Extension System) beginning FY07. Schedule data for PE 0304785N included in this exhibit for presentation purposes only.***

CLASSIFICATION: UNCLASSIFIED//FOR OFFICIAL USE ONLY

EXHIBIT R4, Schedule Profile			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC UNIFIED BUILD (CUB)	

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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** Software																												
4.X SW Development 4.X SDT&E 4.X System Documentation 4.X Software Delivery																												
4.Y SW Development 4.Y SDT&E 4.Y System Documentation 4.Y Software Delivery																												
Test & Evaluation **Milestones**																												
Development Test																												
Operational Test																												
Production Milestones																												

R-1 SHOPPING LIST - Item No. 124

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Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/CRYTOLOGIC UNIFIED BUILD (CUB)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Software Development v 4.X	Q1							
System Developmental Test & Eval v 4.X	Q1							
System Documentation v 4.X	Q1							
Software Delivery v 4.X	Q1							
Software Development v 4.Y	Q2-Q4							
System Developmental Test & Eval v 4.Y	Q3-Q4							
System Documentation v 4.Y	Q3-Q4							
Software Delivery v 4.Y		Q1						

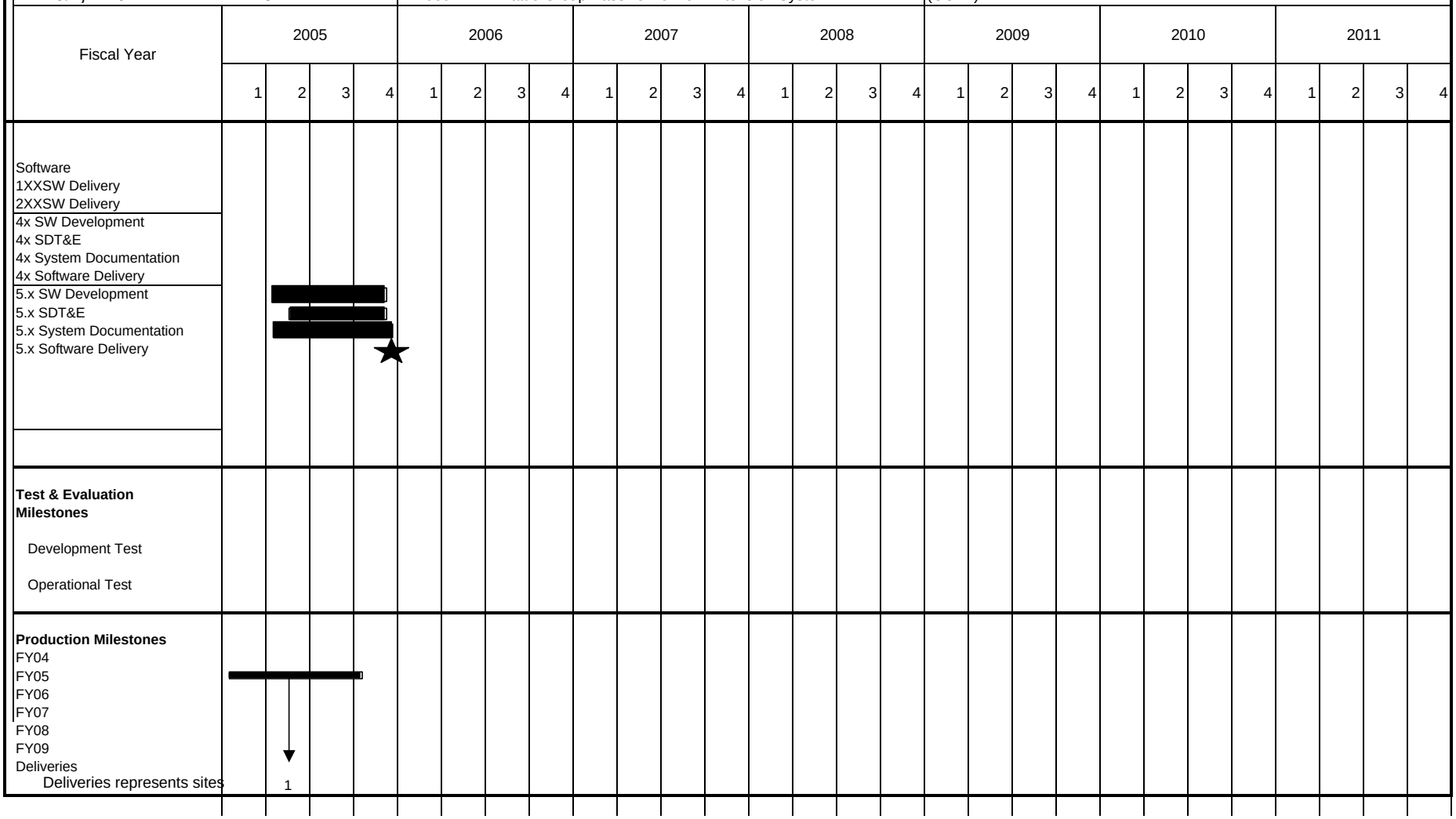
R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA- 5	PE 0604721N Battle Group Passive Horizon Extension System	2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC ON-LINE TRAINER (COLT)



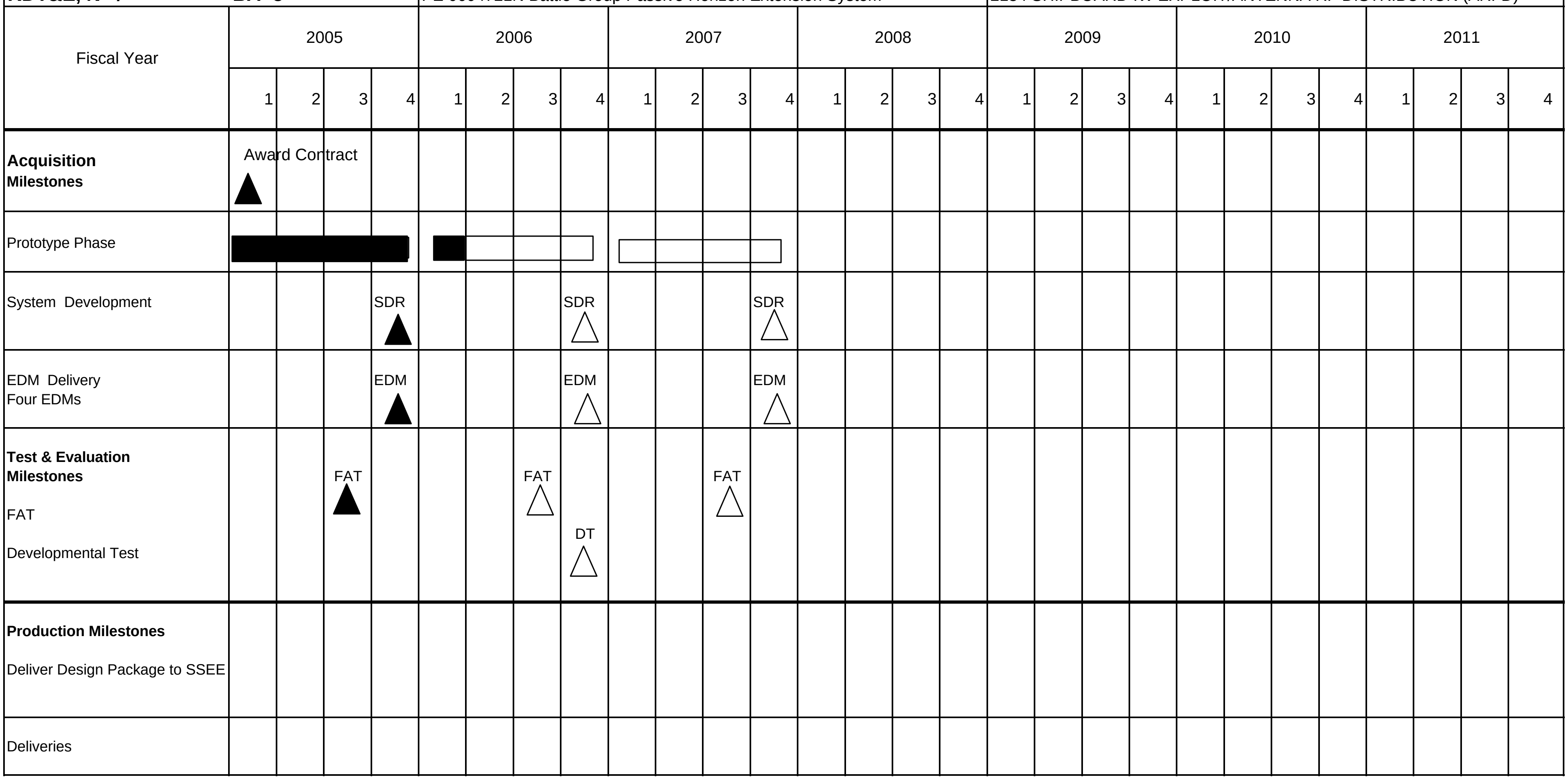
CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC ON-LINE TRAINER (COLT)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
COLT Server Software								
4x SW Development								
4x SDT&E								
4x System Documentation								
4x Software Delivery								
5.0 SW Development	Q2-Q4							
5.0 SDT&E	Q2-Q4							
5.0 System Documentation	Q2-Q4							
5.0 Software Delivery	Q4							

R-1 SHOPPING LIST - Item No. 124

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA- 5	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/ANTENNA RF DISTRIBUTION (ARFD)



R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/ANTENNA RF DISTRIBUTION (ARFD)

Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award	1Q						
Prototype Phase	Q1-Q4	Q1-Q4	Q1-Q4				
EDM Delivery	4Q	4Q	4Q				
System Design Review (SDR)	4Q	4Q	4Q				
Factory Acceptance Testing	3Q	3Q	3Q				
Developmental Test		4Q					
Deliver Design Package to SSEE				1Q			

R-1 SHOPPING LIST - Item No. 124

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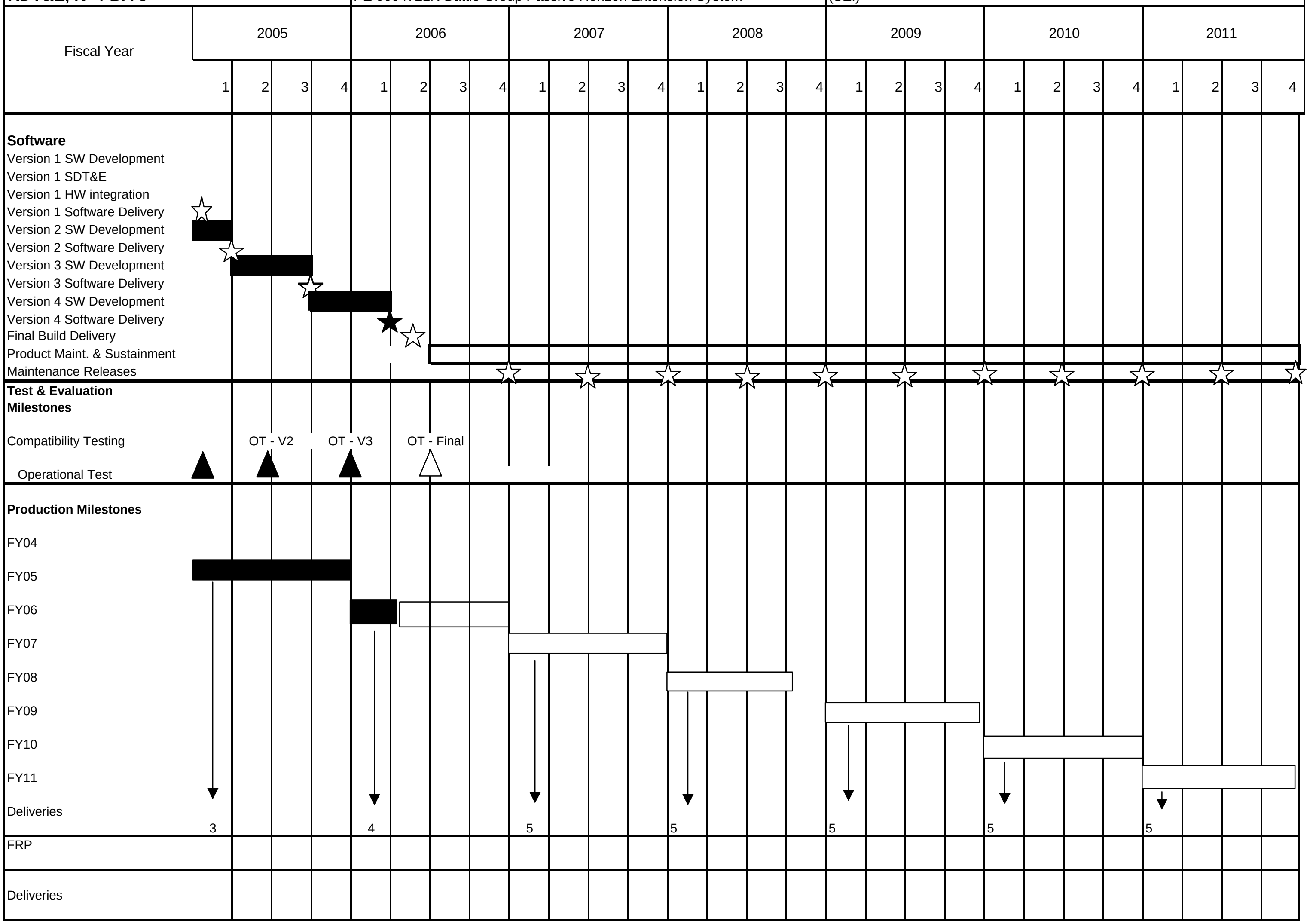
Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: September 2005
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0604721N Battle Group Passive Horizon Extension System	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)



R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: September 2005		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0604721N Battle Group Passive Horizon Extension System				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
SURPAS Development								
Phase 1 - Software Delivery								
Phase 2 - Software Delivery	Q1							
Phase 3 - Software Delivery	Q2-3							
Phase 4 - Software Delivery	Q4	Q1						
Technical Information Meeting	Q1-Q4	Q1-Q4						
Software Delivery	Q2 & Q4	Q2						
Software Maintenance Release			Q1 & Q3	Q1 & Q3	Q1 & Q3	Q1 & Q3	Q1 & Q3	
Hardware/software compatibility testing	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	
Test Readiness Review (TRR)	Q2 & Q4	Q2						
Developmental Testing (DT-IIA)	Q1-Q4	Q1-Q2						
Logistics								
Operational Testing (OT-IIA)	Q2 & Q4	Q2						
Start Low-Rate Initial Production I (LRIP I)		Q3						
IOC		Q3						

R-1 SHOPPING LIST - Item No. 124

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	Various Congressional Increases

(U) B. Accomplishments/Planned Program

9281 NAVY INTELLIGENT AGENT SECURITY MODULE	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.955	1.500	0.000
RDT&E Articles Quantity			

NAVY INTELLIGENT AGENT SECURITY MODULE: – Offensive Capabilities (program name recently changed to Sensing, Warning, and Response Manager (SWARM)).
FY 05 - Funds provided for SBIR II research, development, testing and evaluation of newly designed "Offensive capabilities technology for the IASM . Assures information dominance and superiority against threats with forensics and countermeasure options.
FY 06 - Funds support extending wireless support to spec 802.16 and 802.20

9581 AIRBORNE COMMUNICATIONS INTERCEPT POD	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.641	0.000	0.000
RDT&E Articles Quantity			

AIRBORNE COMMUNICATIONS INTERCEPT POD (ACIF): - Funds support the test and evaluation of communications module; documentation; test and evaluation of additional interface capabilities for different type aircraft. Test and evaluation of antennas for airborne pod operation. The add will also provide engineering support for flight clearances and for test support engineering.

9582 ANTI-TERRORISM TECHNOLOGY SURVEILLANCE SYSTEM	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.064	0.000	0.000
RDT&E Articles Quantity	0	0	0

ANTI-TERRORISM TECHNOLOGY SURVEILLANCE SYSTEM: - Provides Force Protection and Indications and Warning data.

9584 SHIPBOARD INFORMATION WARFARE EXPLOIT	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.151	0.000	0.000
RDT&E Articles Quantity			

SHIPBOARD INFORMATION WARFARE EXPLOIT: - Funds are to develop organic ELINT collection, response, processing and integration, which will provide individual ships with an integrated and consolidated SIGINT picture of the threat battle space. This add will address the ORD requirements to provide SSEE with a tactical organic ELINT capability.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	Various Congressional Increases

(U) B. Accomplishments/Planned Program

9585 SHIPS SIGNAL EXPLOITATION EQUIPMENT (SSEE)	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.962	0.000	0.000
RDT&E Articles Quantity			

SHIPS SIGNAL EXPLOITATION EQUIPMENT (SSEE): - Funds will provide enhancements to SSEE using commercial off the shelf hardware such as Field Programmable Gate Arrays (FPGAs). SSEE is an adaptable system that can accommodate new threat signals through software updates. Emergent signals place increased demand on system processing requirements. At the same time, opportunities exist to expand system capabilities through the use of new COTS FPGA boards to increase processing capability without increasing system cost.

9586 SMART SIGNAL PARSER AND ACTIONABLE INTELLIGENCE	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.105	1.400	0.000
RDT&E Articles Quantity			

/SMART SIGNAL PARSER AND ACTIONABLE INTELLIGENCE: - Congressional Add funds are provided to develop and expand the applied Special Signal rule set and to expand the subject signal set to cover the larger number of signal types that are required. Obtain message textual para data for special signal case to create template module to process new bit data; to expand the AIE data mining capability to cover additional signal types and expand actionable intelligence extraction rule set that permit automated actionable intelligence extraction of other key signals of interest in the war on terror.

FY 05 - Funds are provided to develop and expand the applied Special Signal rule set and to expand the subject signal set to cover the larger number of signal types that are required. Obtain message textual para data for special signal case to create template module to process new bit data; to expand the AIE data mining capability to cover additional signal types and expand actionable intelligence extraction rule set that permit automated actionable intelligence extraction of other key signals of interest in the war on terror.

FY 06 - Funding provided to expand parametric generation to include platform identification, additional source data, complete the knowledgebase development and continue knowledgebase tool development.

9242 COBLU - NETWORK CENTRIC WARFARE ENHANCEMENTS	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.800	0.000
RDT&E Articles Quantity			

COBLU - NETWORK CENTRIC WARFARE ENHANCEMENTS - The COBLU system will provide enhanced capabilities which will facilitate the integration of Control and Coordination Software that enables multiple COBLU systems to be operated remotely in compliance within the FORCEnet constructs; coordinate resources and reduce system manning; and enable the distributed operation of COBLU systems allowing operators to be remotely located at an RSOC or a COBLU operator on one platform to task and utilize a second COBLU on another platform. As part of this effort, interface software between COBLU and DIO-S will be provided and an at-sea technology demonstration will be conducted. Funding will be used to provide interface software between DIO-S and COBLU; and will be used to conduct an at-sea technology demonstration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0604721N Battle Group Passive Horizon Extension System	Various Congressional Increases

(U) B. Accomplishments/Planned Program

9897ADVANCED TACTICAL COMMUNICATIONS INTERCEPT	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	3.400	0.000
RDT&E Articles Quantity			

ADVANCED TACTICAL COMMUNICATIONS INTERCEPT - (ACTIC) is a remote, IP based sensor system developed to provide Carrier Strike Group (CSG)/Expeditionary Strike Group (ESG) personnel access to adversary wireless communication signals and will be used for signal exploitation. Designed for shipboard use and to be carried by unmanned air vehicles and fixed wing aircraft, it will provide deployed Naval and Marine Forces with a persistent over-the horizon SIGINT capability under their direct operational control. Funding will accelerate development of new SIGINT capabilities for ATCIC.

9898N/REMOTE SENSING AND DATA MANAGEMENT	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.100	0.000
RDT&E Articles Quantity			

REMOTE SENSING AND DATA MANAGEMENT - Remote Sensing and Data Management is a multiple wireless sensors which will be installed in shipping containers including video imagery, and anti-tamper devices. Sensor data will be gathered by either a handheld device or a standalone hub, and will be stored in a sensor monitoring database for analysis and display using web based technology. Funding provided to develop the hub for the on-board sensor management, and the first prototype of the web-based data-centric sensor management system.

9899N/TAPERED SLOT ANTENNA	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.700	0.000
RDT&E Articles Quantity	0	0	0

TAPERED SLOT ANTENNA - A tapered slot antenna has been developed to collect modern hostile threat communications signals. The prototype was initially developed with National Security Agency (NSA) Tactical SIGINT Technology (TST) funding. Additionally needed technology upgrades have been identified to further improve antenna functionality and to enhance its ability for hostile/threat emitter detection, which will be back fitted as future engineering change proposals (ECPs) to the tapered slot antenna system. Accelerated development of these urgently needed tapered slot antenna upgrades will significantly enhance SSEE Increments E's ability to both collect and process signals for Indications and Warning (I&W) more accurate cuing of sensors, improved COMINT and Electronics Intelligence (ELINT) signal exploitation and more timely support for Time Critical Strike operations. Additional development to the Tapered Slot Antenna will incorporate the latest advances in digital technology and provide the Navy with its first truly multi-function antenna suitable for simultaneous direction Finding (DF), signal acquisition and Information Operations (IO).
Funding will provide for design and develop 20-element antenna array

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0604727N, JOINT STANDOFF WEAPON SYSTEMS		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	10.588	13.314	27.524	24.710	5.650	.592	.640	
2068 JSOW	10.588	13.314	27.524	24.710	5.650	.592	.640	

(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 or BLU-111 payload. This weapon is designed up front for pre-planned product improvements. Procurement of JSOW-A in the FYDP is deferred pending a fix to the Unexploded Ordnance (UXO) issue or a change in the inventory levels. 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 is deferred pending a change in the threat. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a Broach lethal package to enable the attack of blast/fragmentation and penetration type targets. The JSOW Unitary provides increased accuracy and lethality and the capability for aimpoint selection. Operational Testing of the JSOW-C was successfully completed in December 2004. Approval for Milestone-III/Full Rate Production was granted on 20 December 2004. JSOW-C Initial Operational Capability (IOC) was achieved in February 2005.

FY 2005-2006 includes funding to integrate a Selective Availability Anti-Spoofing Module (SAASM) based GPS receiver per the Joint Chiefs of Staff mandate. Concurrent with the SAASM integration, a new computer processor will be integrated to replace the existing obsolete 486 processor. The effort will focus on concurrent cost reduction opportunities (termed Block II). FY 2005-2011 includes funding to integrate new functionality into the Joint Mission Planning Systems (JMPS) and Common Unique Planning Component (CUPC). FY 2006-2009 includes funding for development, integration, qualification and follow-on developmental/operational test and evaluation of a moving/relocatable target capability into the JSOW-C (AGM-154C) variant (termed Block III). Funding is included in FY07-FY09 to complete the moving/relocatable target integration and testing effort and to support insertion of this capability as an engineering change proposal beginning with FY09 procured JSOW-C weapons. The new Block III capability will enable the weapon to attack moving targets (ashore and afloat) via real-time pre and post-launch targeting updates.

JSOW utilizes a "common truck" for both AGM-154A and AGM-154C variants. Through adherence to international standards for weapons interfaces, weight, and dimension considerations, JSOW is compatible with Air Force and NATO aircraft.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604727N, JOINT STANDOFF WEAPON SYSTEMS**	PROJECT NUMBER AND NAME 2068, JSOW	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2068 JSOW	10.588	13.314	27.524	24.710	5.650	.592	.640	
RDT&E Articles Qty								

(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 or BLU-111 payload. This weapon is designed up front for pre-planned product improvements. Procurement of JSOW-A in the FYDP is deferred pending a fix to the Unexploded Ordnance (UXO) issue or a change in the inventory levels. 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 is deferred pending a change in the threat. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a Broach lethal package to enable the attack of blast/fragmentation and penetration type targets. The JSOW Unitary provides increased accuracy and lethality and the capability for aimpoint selection. Operational Testing of the JSOW-C was successfully completed in December 2004. Approval for Milestone-III/Full Rate Production was granted on 20 December 2004. JSOW-C Initial Operational Capability (IOC) was achieved in February 2005.

FY 2005-2006 includes funding to integrate a Selective Availability Anti-Spoofing Module (SAASM) based GPS receiver per the Joint Chiefs of Staff mandate. Concurrent with the SAASM integration, a new computer processor will be integrated to replace the existing obsolete 486 processor. The effort will focus on concurrent cost reduction opportunities (termed Block II). FY 2005-2011 includes funding to integrate new functionality into the Joint Mission Planning Systems (JMPS) and Common Unique Planning Component (CUPC). FY 2006-2009 includes funding for development, integration, qualification and follow-on developmental/operational test and evaluation of a moving/relocatable target capability into the JSOW-C (AGM-154C) variant (termed Block III). Funding is included in FY07-FY09 to complete the moving/relocatable target integration and testing effort and to support insertion of this capability as an engineering change proposal beginning with FY09 procured JSOW-C weapons. The new Block III capability will enable the weapon to attack moving targets (ashore and afloat) via real-time pre and post-launch targeting updates.

JSOW utilizes a "common truck" for both AGM-154A and AGM-154C variants. Through adherence to international standards for weapons interfaces, weight, and dimension considerations, JSOW is compatible with Air Force and NATO aircraft.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		1.207	26.282
RDT&E Articles Qty			

Develop and integrate the moving/relocatable target (MRT) capability into AGM-154C. The FY 2006-2007 effort will involve seeker software updates to enable receipt of revised target coordinates after missile launch, the integration of a weapon datalink, and the update of the F/A-18 Operational Flight Program (OFP) to incorporate the JSOW-C changes.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604727N, JOINT STANDOFF WEAPON SYSTEMS**	PROJECT NUMBER AND NAME 2068, JSOW

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.742	.371	1.242
RDT&E Articles Qty			

Perform baseline JMPS Migration; plan new functions into JSOW Common Unique Planning Component (CUPC) and develop new software releases of CUPC. The FY05 effort resulted in the final release of CUPC Software version 1.1. The FY2005-FY2007 efforts will address compliance with new imagery architectures and new mission planning functionality related to the incorporation of moving/relocatable target capability into the JSOW-C weapon.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	9.846	11.736	
RDT&E Articles Qty			

Insert a Selective Availability Anti-Spoofing Module (SAASM) based Guidance Electronics Unit (GEU) into the weapon and demonstrate compatability with currently integrated aircraft. Effort will complete with the FY06 qualification and Development Test/Operational Test program.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604727N, JOINT STANDOFF WEAPON SYSTEMS**	PROJECT NUMBER AND NAME 2068, JSOW	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:	10.874	13.517	13.009
Current BES / President's Budget:	10.588	13.314	27.524
Total Adjustments	-0.286	-0.203	14.515
Summary of Adjustments			
Congressional Reductions		-0.141	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.292		
Congressional Increases			
Programmatic Adjustments			14.384
Economic Assumptions		-0.062	
Miscellaneous Adjustments	0.006		0.131
Subtotal	-0.286	-0.203	14.515

Schedule:

1) AGM-154C LRIP I deliveries complete 3Q FY05, AGM-154C LRIP II deliveries begin 3Q FY05.

2) Moving/relocatable target development test 3Q FY08 through 1Q FY09, operational tests 2Q - 3Q FY09.

3) FY06 AGM-154C contract option exercise moved one month to 2Q FY06.

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
USN WP,N BLI 223000 JSOW*	141.314	144.246	125.551	131.402	155.152	164.484	169.061	1,643.291	2,674.501
Qtys*	405	420	397	421	504	521	546	4,680	7,894

*Does not include Spares.

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 Engineering and Manufacturing Development and follow-on development program (i.e., Block II, Block III) efforts. Fixed price type contracts will be used for production.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604727N, JOINT STANDOFF WEAPON SYSTEMS				PROJECT NUMBER AND NAME 2068, JSOW						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	C-CPIF	RAYTHEON COMPANY, TUCSON, AZ	272.295								272.295	272.295
Primary Hdw Development	SS-CPIF	RAYTHEON COMPANY, TUCSON, AZ	247.809								247.809	247.809
Primary Hdw Development (MRT)	SS-CPFF	RAYTHEON COMPANY, TUCSON, AZ				1.094	11/30/2005	20.002	12/31/2006	16.691	37.787	37.787
Primary Hdw Development-SAASM	SS-CPFF	RAYTHEON COMPANY, TUCSON, AZ		9.713	11/30/2004	4.499	11/30/2005				14.212	14.212
Ancillary Hdw Development	SS-CPIF	TEXTRON	2.923								2.923	2.923
Ancillary Hdw Development	SS-FPFF	BAE CHORLEY, ENGLAND	12.450								12.450	12.450
Aircraft Integration	SS-CPIF	MTECH / McDONNELL DOUGLAS	21.455								21.455	21.455
Aircraft Integration	WX	NAWCWD CHINA LAKE	15.058								15.058	
Systems Eng	WX	NAWCWD CHINA LAKE	107.710			.113	11/30/2005	.450	11/30/2006	1.250	109.523	
Award Fees	Fee	TEXTRON / RAYTHEON	7.198								7.198	
SUBTOTAL PRODUCT DEVELOPMEN			686.898	9.713		5.706		20.452		17.941	740.710	
Remarks:												
SUPPORT												
Software Development	SS-CPFF	BOEING , ST. LOUIS, MO						4.220	11/30/2006	6.380	10.600	10.600
Software Development	SS-CPFF	RAYTHEON COMPANY, TUCSON, AZ	3.135	.742	11/30/2004	.371	11/30/2005	1.242	11/30/2006	2.781	8.271	8.271
SUBTOTAL SUPPORT			3.135	.742		.371		5.462		9.161	18.871	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	WX	NAWCWD, CHINA LAKE CA	26.680			3.031	11/30/2005	1.460	11/30/2006	2.000	33.171	
Oper Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	7.662	.123	11/30/2004	4.056	11/30/2005			2.490	14.331	
SUBTOTAL TEST & EVALUATION			34.342	.123		7.087		1.460		4.490	47.502	
Remarks:												
MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	18.136	.010	11/30/2004						18.146	
Travel	WX	VARIOUS	7.092			.150	11/30/2005	.150	11/30/2006		7.392	
SUBTOTAL MANAGEMENT			25.228	.010		.150		.150			25.538	
Remarks:												
Total Cost			749.603	10.588		13.314		27.524		31.592	832.621	
Remarks:												

CLASSIFICATION:

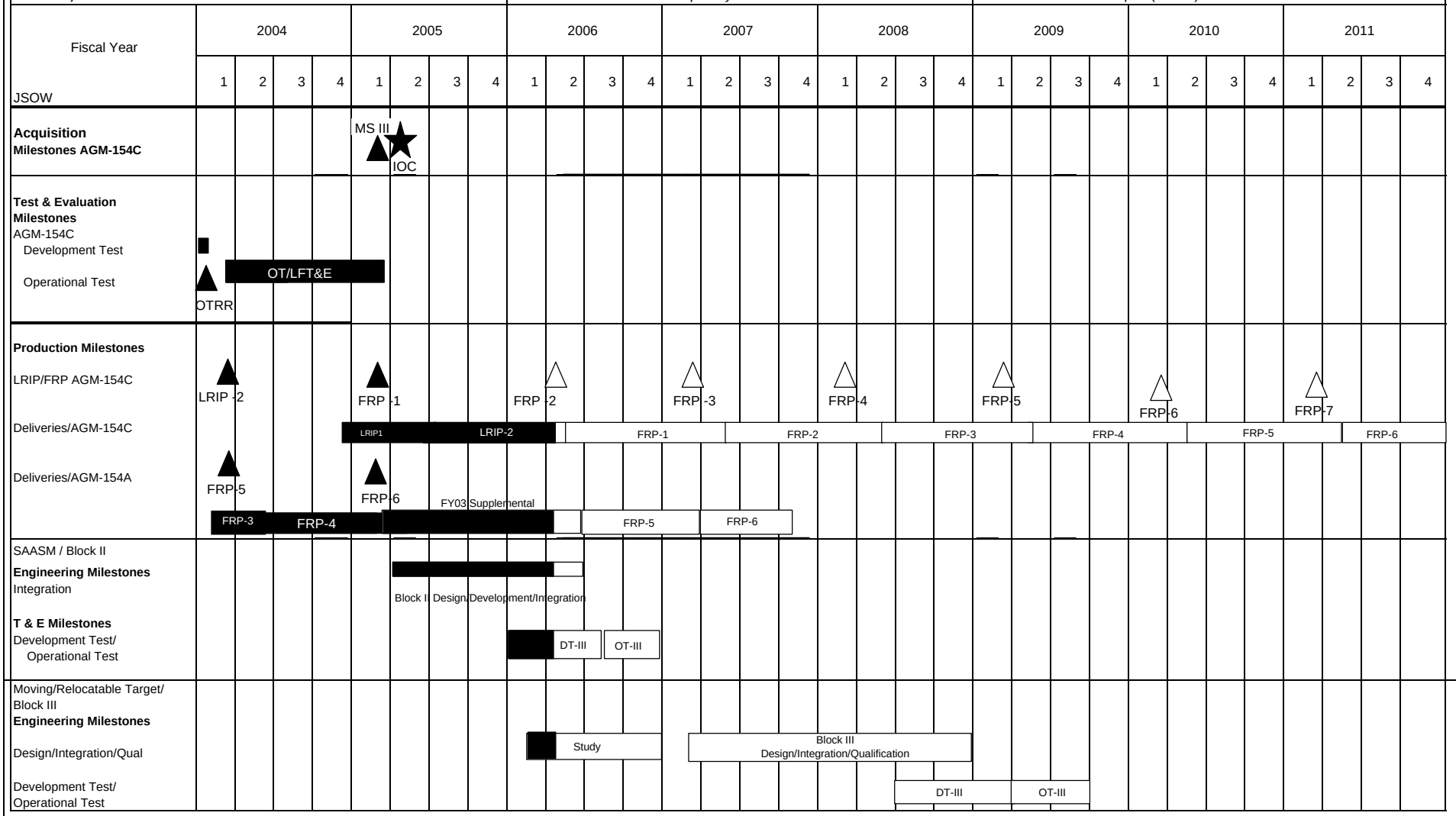
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604727N Joint Standoff Weapon System

PROJECT NUMBER AND NAME: 2068 Joint Standoff Weapon (JSOW)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**	PROGRAM ELEMENT 0604727N Joint Standoff Weapon System				PROJECT NUMBER AND NAME 2068 Joint Standoff Weapon (JSOW)			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Low Rate Initial Production (LRIP)/AGM-154C	1Q							
Operational Test Readiness Review (OTRR)/AGM-154C	1Q							
Operational Test/Live Fire Test and Evaluation (cont'd)								
(OT/LFT&E)/AGM-154C	1Q-4Q	1Q						
Milestone III (MS-III)/AGM-154C		1Q						
Initial Operational Capability (IOC)/AGM-154C		2Q						
Full Rate Production (FRP)/AGM-154C		1Q	2Q	1Q	1Q	1Q	1Q	1Q
Full Rate Production (FRP)/AGM-154A	1Q	1Q						
LRIP-1 Deliveries-AGM-154C	4Q	1Q-3Q						
LRIP-2 Deliveries-AGM-154C		3Q-4Q	1Q-2Q					
FRP-1 Deliveries-AGM-154C			2Q-4Q	1Q-2Q				
FRP-2 Deliveries-AGM-154C				2Q-4Q	1Q-2Q			
FRP-3 Deliveries-AGM-154C					2Q-4Q	1Q-2Q		
FRP-4 Deliveries-AGM-154C						2Q-4Q	1Q-2Q	
FRP-5 Deliveries-AGM-154C							2Q-4Q	1Q-2Q
FRP-6 Deliveries-AGM-154C								2Q-4Q
FRP-3 Deliveries-AGM-154A	1Q-2Q							
FRP-4 Deliveries-AGM-154A	2Q-4Q	1Q						
FY03 Supplemental-AGM-154A		1Q-4Q	1Q-2Q					
FRP-5 Deliveries-AGM-154A			2Q-4Q	1Q				
FRP-6 Deliveries-AGM-154A				2Q-4Q				
SAASM / Block II								
Design/Integration		2Q-4Q	1Q-2Q					
Development Test (DT)			1Q-3Q					
Operational Test (OT)			3Q-4Q					
Moving/Relocatable Target / Block III								
Engineering Study			1Q-4Q					
Design/Integration/Qual				1Q-4Q	1Q-4Q			
Development Test (DT)					3Q-4Q	1Q		
Operational Test (OT)						2Q-3Q		

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**						R-1 ITEM NOMENCLATURE 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Total PE Cost		**68.193**	**56.642**	**10.050**	**6.270**	**5.444**	**0.744**	**0.138**		
0166 Shipboard Protection System (SPS)/ 0166 Underwater Intrusion Detection Sonar		**3.884**	**5.368**	**6.516**	**1.973**	**1.719**	**0.000**	**0.000**		
2178 QRCC		**47.305**	**39.874**	**3.534**	**0.000**	**0.000**	**0.000**	**0.000**		
3172 Joint Non-Lethal Weapons		**0.000**	**0.000**	**0.000**	**4.297**	**3.725**	**0.744**	**0.138**		
9394 Integrated Radar Optical Surveillance (IROS3)		**9.836**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
9587 Autonomous Unmanned Surface Vessel		**1.444**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
9588 Directed Energy User Scrutiny Equipment		**2.417**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
9589 IDEA		**3.307**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
9999N/Congressional Adds		**0.000**	**11.400**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program element consolidates currently ongoing and planned programmatic efforts related to Detect & Control aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets.

Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric threats. Capabilities for Increment 1 include: Surface Surveillance System, MK 49 Mod 0 stabilized gun mounts and Non-lethal weapons/devices. The surface surveillance system integrates EO/IR sensors, and radar into a common tactical surveillance system. Stabilized guns: provide integrated lethal engagement capability against assymetric threats. Non-lethal weapons: NLW assist in determining intent and target discrimination. SPS is to be fielded in increments through evolutionary acquisition, as defined in DoD Instruction (DoDINST) 5000.2. The incremental approach facilitates the early delivery of economically practical and militarily useful integrated technologies. Future increments with enhanced capabilities will be developed as DoD/commercial research and development capabilities mature and resources permit. The SPS “End State System” will provide Navy vessels with the ability, in foreign and domestic ports, to protect themselves from attacks by asymmetric threats. This ability requires that information necessary to seamlessly execute the detect-to-engage sequence be collected, processed, communicated, and acted upon before threats reach their objectives.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	R-1 ITEM NOMENCLATURE 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)

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.

DETECTION: Improvements in 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) (2178), while sensor improvements are addressed through the SPS Improvements (0166). These provide improvements to both active and passive detection.

CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated response to the ASCM threat are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (2178) 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.

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)				PROJECT NUMBER AND NAME 0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar					
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Project Cost		**3.884**	**5.368**	**6.516**	**1.973**	**1.719**	**0.000**	**0.000**		
RDT&E Articles Qty										

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project provides funding for the SPS Improvement Program:

Shipboard Protection System (SPS): develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric threats. Capabilities for Increment I include: Surface Surveillance System, ROSAM stabilized gun mounts and Non-lethal weapons/devices. The surface surveillance system integrates EO/IR sensors, and radar into a common tactical surveillance system. Stabilized guns: provide integrated lethal engagement capability against assymetric threats. Non-lethal weapons: NLW assist in determining intent and target discrimination. SPS is to be fielded in increments through evolutionary acquisition, as defined in DoD Instruction (DoDINST) 5000.2. The incremental approach facilitates the early delivery of economically practical and militarily useful integrated technologies. Future increments with enhanced capabilities will be developed as DoD/commercial research and development capabilities mature and resources permit. The SPS "End State System" will provide Navy vessels with the ability, in foreign and domestic ports, to protect themselves from attacks by asymmetric threats. This ability requires that information necessary to seamlessly execute the detect-to-engage sequence be collected, processed, communicated, and acted upon before threats reach their objectives.

Underwater Intrusion Detection Sonar: Congressional Add: Designs, develops and prototypes a portable subsurface defense system to detect threats including swimmers and other underwater asymmetric threats.

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.995	0.000	0.000
RDT&E Articles Quantity				

Underwater Intrusion Detection Sonar (Congressional Add) FY05: Explores Commercial Off The Shelf (COTS) products to provide detection/enganagement of subsurface threats including swimmers and other asymmetric threats.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.889	3.923	2.666
RDT&E Articles Quantity				

Shipboard Protection System - Increment I System design, development, integrate, analyse and evaluate the SPS system.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	1.445	0.850
RDT&E Articles Quantity				

Test the SPS system, to include WESERB Testing, Developmental Testing (DT) , ground based testing, live fire testing, Ship integration test, Ship underway testing and Operational Testing (OT)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	0.000	3.000
RDT&E Articles Quantity				

Periscope Detection: This program modifies and improves a search radar to provide automatic periscope detection & discrimination while conducting surface search functions, such as navigation and piloting, surface target detection (ships, buoys, etc). The concept is to field a new capability without having to procure and qualify a new radar.

TOTAL			3.884	5.368	6.516	

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	3.907	5.450	3.551
FY 2007 President's Budget:	3.884	5.368	6.516
Total Adjustments	-0.023	-0.082	2.965
Summary of Adjustments			
Other General Provisions	-0.003	-0.025	
Programmatic Adjustments	-0.020		2.920
Congressional 1% reduction		-0.057	
Revised rates & inflation indices			0.045
Subtotal	-0.023	-0.082	2.965

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST-Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	Prior Years	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN LINE 812800 (Physical Security Equipment)	3.017	20.549	53.471	30.300	59.486	58.337	85.295	98.362	CONT.	CONT.

E. ACQUISITION STRATEGY:

Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric threats. Capabilities for Increment I include: Surface Surveillance System, MK49 Mod 0 stabilized gun mounts and Non-lethal weapons/devices. The surface surveillance system integrates EO/IR sensors, and radar into a common tactical surveillance system. Stabilized guns: provide integrated lethal engagement capability against assymetric threats. Non-lethal weapons: NLW assist in determining intent and target discrimination. SPS is to be fielded in increments through evolutionary acquisition, as defined in DoD Instruction (DoDINST) 5000.2. The incremental approach facilitates the early delivery of economically practical and militarily useful integrated technologies. Future increments with enhanced capabilities will be developed as DoD/commercial research and development capabilities mature and resources permit. The SPS "End State System" will provide Navy vessels with the ability, in foreign and domestic ports, to protect themselves from attacks by asymmetric threats. This ability requires that information necessary to seamlessly execute the detect-to-engage sequence be collected, processed, communicated, and acted upon before threats reach their objectives.

F. MAJOR PERFORMERS:

TBD

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)						PROJECT NUMBER AND NAME 0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WX	NSWC Crane				0.100	01/05	0.050	11/05	0.000	11/06	Continuing	Continuing	TBD
Hardware/Software Development	WX	NSWC Dahlgren				0.200	02/05	0.050	11/05	0.050	11/06	Continuing	Continuing	TBD
Hardware/Software Development	FFP	Northrop Grumman				0.213	08/05	0.084	12/05	0.100	11/06	Continuing	Continuing	TBD
Hardware/Software Development	WX	NAVAIR/KDH				0.995								
Subtotal Product Development			0.000	0.000		1.508		0.184		0.150		0.000	0.000	TBD
Remarks:														
Engineering Services	WX	NSWC Crane				0.337	11/04	0.100	11/05	0.075	11/06	Continuing	Continuing	TBD
Engineering Services	WX	NSWC Dahlgren				0.358	01/05	0.100	11/05	0.100	11/06	Continuing	Continuing	TBD
Engineering Services	FFP	Northrop Grumman				1.193	08/05	3.454	02/06	2.266	11/06	Continuing	Continuing	TBD
Engineering Services										3.000	11/06			
ILS Functions	WX	NSWC Dahlgren				0.200	02/05	0.000	11/05	0.000	11/06	Continuing	Continuing	TBD
ILS Functions														
ILS Functions														
Subtotal Support			0.000	0.000		2.088		3.654		5.441		0.000	0.000	TBD
Remarks:														

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)

PROJECT NUMBER AND NAME: 0166 Shipboard Protection System (SPS)/Underwater Intrusion Detection Sonar

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E Functions	WX	COMOPTEVFOR						1.195	11/05	0.600		Continuing	Continuing	TBD
T&E Functions	WX	NWSC Dahlgren						0.250	11/05	0.250		Continuing	Continuing	TBD
T&E Functions														
Subtotal T&E			0.000	0.000		0.000		1.445		0.850		0.000	0.000	
Remarks:														
Management Support	Various	Various				0.250	11/05	0.050	11/06	0.050	11/07	Continuing	Continuing	TBD
Travel						0.038	11/05	0.035	11/05	0.025	11/05	Continuing	Continuing	TBD
Subtotal Management			0.000	0.000		0.288		0.085		0.075		0.000	0.000	TBD
Remarks:														
Total Cost			0.000	0.000		3.884		5.368		6.516		0.000	15.768	
Remarks:														

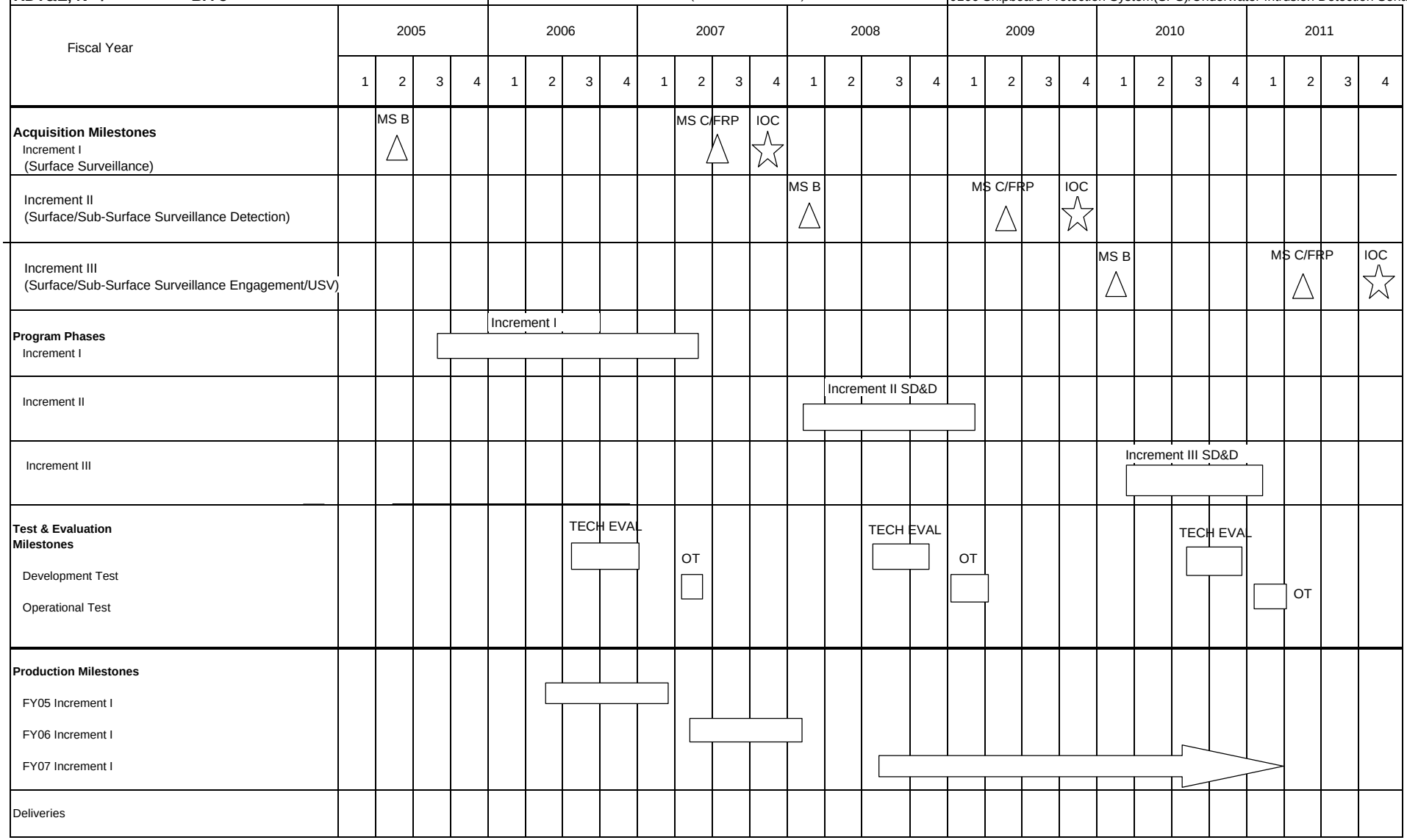
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)

PROJECT NUMBER AND NAME: 0166 Shipboard Protection System(SPS)/Underwater Intrusion Detection Sonar



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)				PROJECT NUMBER AND NAME 0166 Shipboard Protections System (SPS)/Underwater IDS			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B (Increment I)		2nd QTR						
SD&D (Increment I)				2nd QTR				
DT (Increment I)			3rd-4th QTR					
OT (Increment I)				2nd QTR				
Milestone C/FRP (Increment I)				3rd QTR				
IOC (Increment I)				4th QTR				
Milestone B (Increment II)					1st QTR			
SD&D (Increment II)					1st-4th QTR			
DT (Increment II)					3rd-4th QTR			
OT (Increment II)						1st QTR		
Milestone C/FRP (Increment II)						2nd QTR		
IOC (Increment II)						4th QTR		
Milestone B (Increment III)							1st QTR	
SD&D (Increment III)							1st-4th QTR	
DT (Increment III)							3rd-4th QTR	
OT (Increment III)								1st QTR
Milestone C/FRP (Increment III)								2nd QTR
IOC (Increment III)								4th QTR

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/Quick Reaction Combat Capability / 9589 Integrated Display Enhanced Architecture				
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total
2178/QRCC	**47.305**	**39.874**	**3.534**	**0.000**	**0.000**	**0.000**	**0.000**	**90.713**
2178 QRCC/ 9589 IDEA	**3.307**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**3.307**
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 system architecture. SSDS is a physically distributed, open system 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 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 re-use 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, and Tactical Data Links, 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.

The Navy, by direction of DOT&E, required LPD 17 Live Fire testing to be conducted on the Self Defense Test Ship (R). SSDS MK 2 self defense combat system will be tested against Anti Ship Cruise Missile threats in FY06-07 to support this effort.

In order to meet the Navy's warfighting capabilities and modernization concepts described in SEA POWER 21, Navy Open Architecture (NOA) is being introduced. This is the first step in unifying a set of warfighting functions into a single architecture shared among many ship classes. This principle of commonality is a major mechanism for cost control and avoidances in the Navy's future warfighting systems. The Ship Self Defense System (SSDS) MK 2 would rehost existing tactical computer program applications to the Open Architecture Computing Environment (OACE) specifications/ equipment suite prior to full migration and integration with other OA applications for implementation on future classes of ships.

The Integrated Display & Enhanced Architecture (IDEA) approach will be utilized for the development of a software-based capability to share displays across Naval subsystems. This capability would allow specific displays within SSDS/ACDS and selected displays of external systems to be displayed at designated locations, and to be interchanged among designated operator stations. Based on Open System architecture standards for networked systems, the IDEA software permits an operator to immediately reconfigure his workstation and assume the responsibilities of any other operator, minimizing the number of workstations. Proof of concept will be demonstrated with LHA 2/4 upgraded COTS display systems. The software architecture will conform to Navy Open Architecture guidelines.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	2178 Quick Reaction Combat Capability / 9589 Integrated Display Enhanced Architecture

B. Accomplishments/Planned Program

	FY 05	FY 06	FY07	
Accomplishments/Effort/Subtotal Cost	25.633	0.000	0.000	
RDT&E Articles Quantity				

Developed and delivered the computer program products for each of the SSDS MK 2 ship class variants (Mod 1 for Carriers and Mod 2 for LPDs). Conducted reviews of computer program systems engineering products to assess the computer program development and integration progress. Coded each new or modified unit as specified in the detailed design, revise and compile the code until it compiles without errors. Conducted 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. Evaluated the test results and corrected the code and retest, if necessary. Conducted a Formal Qualifications Test (FQT) before delivery to test certification facilities and continued to support testing efforts through computer program corrections and retest.

	FY 05	FY 06	FY07	
Accomplishments/Effort/Subtotal Cost	15.160	24.321	3.534	
RDT&E Articles Quantity				

Conducted comprehensive combat system tests on SSDS MK 2 MOD 1 (CVN 76) at Wallops Island, including development tests, data collection, data extraction, data analysis and identifying computer program corrections.
Conducted at-sea DT/OT and FOT&E events onboard USS Reagan in FY05.
Completed all test preparations and documentation for LPD 17 configuration testing efforts planned in FY05.
Conduct land based and at-sea DT events for SSDS MK2 Mod 2 (LPD 17) in FY05 / FY06 / FY07, and conduct live fire testing on board the Self Defense Test Ship (R) in FY06 & FY07. Design Agent test, analyze, and fix for the computer software program in support of testing will be done as required to successfully complete MK 2 Mod 2 development.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	6.512	15.553	0.000	
RDT&E Articles Quantity				

Migration of SSDS MK 2 to OA Category 3 Computing Environment (OACE) and conduct a FQT before delivery to combat system facilities for System Integration Test (SIT), IV&V and certification testing. Conduct Environmental Qualification Test (EQT) on the OACE hardware.

	FY 05	FY 06	FY07	
Accomplishments/Efforts/Subtotal Cost	3.307			
RDT&E Articles Quantity				

Congressional Plus Up for Integrated Display Enhanced Architecture for SSDS/ACDS to be utilized for the development of a software-based capability to share displays across Naval subsystems.

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	2178 Quick Reaction Combat Capability / 9589 Integrated Display Enhanced Architecture

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	48.118	40.481	3.585
FY 2007 President's Budget:	50.612	39.874	3.534
Total Adjustments	2.494	-0.607	-0.051
Summary of Adjustments			
Other General Provisions	-1.033	-0.607	-0.069
Revised rates & inflation indices	0.000	0.000	0.018
Programmatic changes	3.527	0.000	0.000
Subtotal	2.494	-0.607	-0.051

Schedule:

PB05 FY05/FY06 controls support FOT&E test events.

Technical: N/A

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	XLFN5 HDFWLRQ&RP EDW&DSDELOLW\ QWHJUDWHG' LVSOD\ (QKDQFHG$UFKLWHFWXUH

D. OTHER PROGRAM FUNDING SUMMARY:

								To	Total
Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Complete	Cost
Ship Self Defense System OPN / 523900 , 523905 , 523906	37.833	28.960	56.668	47.359	71.382	54.359	80.092	298.18	684.053
SCN 2086 CV(N)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SCN 3036 LPD ship class	0.000	0.000	20.205	20.205	0.000	0.000	0.000	40.410	80.820
Related RDT&E:									
PE 0603382N / 0324 (Advanced Combat System Technology) Navy Enterprise OACE effort supported	61.474	29.705	12.38	22.552	23.213	23.897	25.853	CONT.	199.074
PE 0603658N / 2039 (Cooperative Engagement Capability CEC)	99.618	86.757	53.329	50.37	53.633	57.869	55.052	CONT.	456.628
PE 0604307N / 1447 (Aegis Surf Combatant Combat Sys Imp)	136.011	200.743	151.49	95.097	72.061	88.002	87.756	CONT.	831.16
PE 0603582N / 0164 (Common Network Interface CNI)	25.0	25.73	27.54	24.0	23.10	23.56	24.03	CONT.	172.96

E. ACQUISITION STRATEGY:

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 are awarded on FFP contracts with the exception of those ships that will be receiving COTS tech Refresh hardware suites; then a CPAF type contract is necessary.
A new design agent and Life Cycle Maintenance contract was awarded in FY05 to support future SSDS MK 2 system/software maintenance and systems corrections.

F. MAJOR PERFORMERS:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME XLFN5HDFWLRQ&RPEDW&DSDELOLW\ QWHJUDWHG'LVSOD\(QKDQFHG$UFKLWHFWXUH				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR/WX	NAVSEA/DD-Dahlgren, VA	26.875	7.331	10/04	1.746	10/05	0.000	10/06	0.000	35.952	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	32.844	2.080	11/04	1.492	11/05	0.000	11/06	0.000	36.416	N/A
Systems Engineering	WR/WX	NAVSEA/PHD-Pt Hueneme,CA	14.751	2.456	10/04	2.000	10/05	0.000	10/06	0.000	19.207	N/A
Systems Engineering	WR/WX	NAVSEA/Dam Neck-Dam Neck, V.	5.609	1.258	10/04	1.576	10/05	0.000	10/06	0.000	8.443	N/A
Systems Engineering	WR/WX	NAVSEA/IH-Indian Head, MD	0.000	3.056	N/A	3.100	N/A	0.000	N/A	0.000	6.156	N/A
Systems Engineering	SS/FP	Lockheed Martin St. Paul, MN	3.208	0.000	01/00	1.000	10/05	0.000	10/06	0.000	4.208	N/A
Systems Engineering/Dev/Integrate	SS/CPAF	RSC(5108)-San Diego, CA	93.986	4.144	N/A	0.000	N/A	0.000	N/A	0.000	98.130	TBD
Systems Engineering/Dev/Integrate	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	TBD
Systems Engineering/Dev/Integrate	SS/CPFF	RSC(5104)-San Diego, CA	23.685	0.000	10/04	0.000	10/05	0.000	10/06	0.000	23.685	TBD
Systems Engineering/Dev/Integrate	SS/CPAF	RSC (5132)-San Diego, CA	14.951	1.842	10/04	3.744	10/05	0.000	10/06	0.000	20.537	TBD
Award Fees	SS/CPAF	RSC (5132)-San Diego, CA	0.000	2.650	10/04	2.505	10/05	0.000	10/06	0.000	5.155	TBD
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	9.726	1.482	N/A	0.000	N/A	0.000	N/A	0.000	11.208	TBD
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	TBD
Risk Reduction / EMD	Various	Various	76.366	0.000	N/A	0.000	N/A	0.000	N/A	0.000	76.366	N/A
Misc.	Various	Various	0.544	1.822	N/A	0.000	N/A	0.000	N/A	0.000	2.366	N/A
Subtotal Product Development			325.061	28.121		17.163		0.000		0.000	370.345	N/A
Remarks:												
QA/RMA	WR	NWAS Corona	8.950	0.415	N/A	0.150	N/A	0.000	N/A	0.000	9.515	
Subtotal Support			8.950	0.415	N/A	0.150	N/A	0.000	N/A	0.000	9.515	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178 Quick Reaction Combat Capability / 9589 Integrated Display Enhanced Architecture							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/WX	NAVSEA/PHD-Pt Hueneme,CA	34.738	7.610	10/04	4.793	10/05	3.534	10/06	0.000	50.675	N/A
Developmental Test & Evaluation	WR/WX	NAVSEA/DD,Dahlgren, VA	1.445	1.925	10/04	2.425	10/05	0.000	10/06	0.000	5.795	N/A
Developmental Test & Evaluation	WR/WX	NAVSEA DD, Wallops Island	19.303	3.147	10/04	1.598	10/05	0.000	10/06	0.000	24.048	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	5.283	1.245	N/A	1.596	N/A	0.000	N/A	0.000	8.124	N/A
Developmental Test & Evaluation	WR/WX	NAVSEA/CORONA, Corona CA	0.998	0.000	10/04	0.000	10/05	0.000	10/06	0.000	0.998	N/A
Developmental Test & Evaluation	WR/WX	OPTEVFOR	1.287	0.240	10/04	0.400	10/05	0.000	10/06	0.000	1.927	N/A
Developmental Test & Evaluation	SS/CPFF	RSC (5110)-San Diego, CA	0.000	4.125	10/04	10.220	10/05	0.000	10/06	0.000	14.345	65.471
Developmental Test & Evaluation	SS/CPFF	RSC (5456)-Tucson, AZ	0.000	2.180	03/05	0.000	N/A	0.000	N/A			
Misc.	Various	Various	4.184	0.150	N/A	0.000	N/A	0.000	N/A	0.000	4.334	N/A
Subtotal T&E			67.238	20.622		21.032		3.534		0.000	112.426	N/A
Remarks:												
Program Management Support			10.293	1.454	N/A	1.529	N/A	0.000	N/A	0.000	13.276	N/A
											0.000	N/A
Subtotal Management			10.293	1.454		1.529		0.000		0.000	13.276	N/A
Remarks:												
Total Cost			411.542	50.612	N/A	39.874	N/A	3.534	N/A	0.000	505.562	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 126

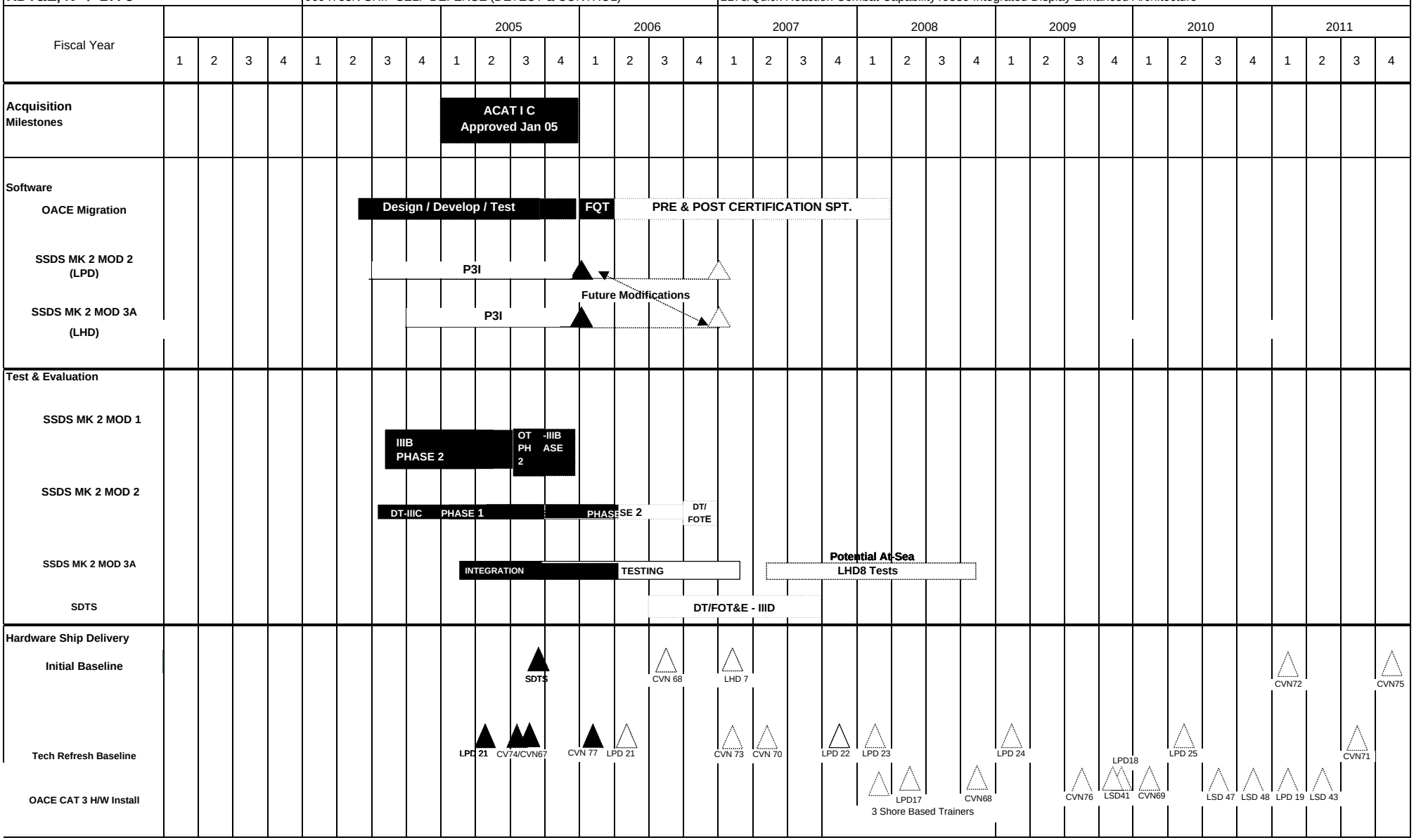
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)

PROJECT NUMBER AND NAME: 2178/Quick Reaction Combat Capability /9589 Integrated Display Enhanced Architecture



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N BA-5**	PROGRAM ELEMENT 604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/Quick Reaction Combat Capability / 9589 Integrated Enhanced Display Architecture			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SSDS OACE Migration							
DESIGN AND DEVELOPMENT	1Q-4Q						
DEVELOPMENTAL TESTING AT WALLOPS	1Q-4Q						
FORMAL QUALIFICATION TEST (FQT)		1Q-2Q					
SIT		2Q-3Q					
VALIDATION & CERTIFICATION		4Q	1Q-4Q				
SSDS MK 2 MOD 1 (CV/CVNs)							
INTEGRATION/DEVELOPMENTAL TESTS / Phase I							
TEST READINESS REVIEW (TRR)	1Q						
CSIT TESTING	1Q						
ONBOARD TEST EVENTS / Phase II	1Q-4Q						
CSSQT	2Q						
SSDS MK 2 MOD 2 (LPDs)							
SYSTEM DEVELOPMENT							
INTEGRATION TESTING							
FORMAL QUALIFICATION TEST (FQT)							
LPD-17 (SCN) DIT							
INTEGRATION/DEVELOPMENTAL TESTS / Phase I							
TEST READINESS REVIEW (TRR)	2Q-3Q						
CSIT TESTING	1Q						
ONBOARD TEST EVENTS / Phase II	2Q-3Q	1Q-4Q					
CSSQT	3Q						
SSDS MK 2 MOD 3A (LHDs) LHD 8 - Lead Ship (SCN)							
SYS ENGINEERING/SYSTEM DEVELOPMENT	1Q-4Q	1Q-4Q					
INTEGRATION TESTING	2Q-4Q	1Q-3Q	1Q-4Q				
FORMAL QUALIFICATION TEST (FQT)	1Q-2Q						
INTEGRATION/DEVELOPMENTAL TESTS / Phase I	1Q-3Q						
TEST READINESS REVIEW (TRR)	3Q-4Q		3Q				
CSIT TESTING	3Q-4Q	1Q-4Q	1Q-2Q				
ONBOARD TEST EVENTS /Phase II (LHD 8 Unique)		1Q-4Q	1Q-3Q				
CSSQT LHD 8			4Q				
SDTS							
DT/FOT&E - IIID/LFT&E		3Q-4Q	1Q-3Q				

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	Congressional Adds : VARIOUS

CONGRESSIONAL PLUS-UPS:

		FY 06		
9587C				
Autonomous Unmanned Surface Vessel		2.000		

Congressional Add: Develop/analyze concept demonstrator to support ATFP missions: protect harbors, coastal facilities (airports, nuclear power plants, inland waterways).

		FY 06		
9852N				
Shipboard Swimmer Detection System*		4.300		

Congressional Add: Evaluate commercial swimmer detection systems to futher provide risk reduction in support of the Navy's GWOT.

		FY 06		
9589C				
Integrated Display Enhanced Architecture		5.100		

Congressional Plus UP for Integrated Enhanced Display Architecture for SSDS/ACDS to be utilized for the development of a software-based capability to share displays across Naval subsystems.

R-1 SHOPPING LIST - Item No. 126

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE **SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**46.807**	**49.833**	**46.390**	**45.552**	**31.529**	**32.226**	**6.580**
0167 / 5” Rolling Airframe Missile		**11.553**	**29.657**	**41.673**	**40.761**	**26.663**	**27.297**	**1.556**
0173 / NATO SEASPARROW		**17.934**	**5.849**	**4.717**	**4.791**	**4.866**	**4.929**	**5.024**
9081 / PHALANX CIWS SeaRAM		**17.320**	**9.827**					
9853/ PHALANX CIWS future concepts		**0.000**	**2.000**					
9854 / PHALANX CIWS self-destructing		**0.000**	**2.500**					

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 Hard Kill. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming Anti-Ship Cruise Missiles (ASCM).

(U) ENGAGEMENT: Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), 5" Rolling Airframe Missile (RAM) (0167), and Phalanx CIWS SeaRAM (9081). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. System improvements include incorporation of Phalanx detection capability into RAM system (SeaRAM).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE				PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**11.553**	**29.657**	**41.673**	**40.761**	**26.663**	**27.297**	**1.556**
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 fuse. 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. Funding is used for development and testing of a Block II upgrade to the RAM. This upgrade will allow RAM to regain battlespace lost to emerging, more maneuverable ASCM threats. 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE	0167 / ROLLING AIRFRAME MISSILE

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
RAM Testing		0.000	0.734	0.750
RDT&E Articles Quantity				

FY05-07 funds Block 1 FOT&E and government MOD 3 testing and analysis.

		FY 05	FY 06	FY 07
RAM Block 1 Eng/Interface Support		0.000	0.100	0.700
RDT&E Articles Quantity				

FY06-07 Supports on-going efforts in RAM engineering for emergent issues/obsolescence issues including EDS interface transition.

		FY 05	FY 06	FY 07
Improvement for Missile Deficiency		1.112	1.166	1.851
RDT&E Articles Quantity				

FY05-07 funding for improvements of emergent RAM missile/launcher deficiencies.

		FY 05	FY 06	FY 07
Block II		10.294	27.495	38.206
RDT&E Articles Quantity				

FY05-07 funding initiates development of RAM Block II upgrade.

		FY 05	FY 06	FY 07
Travel		0.147	0.162	0.166
RDT&E Articles Quantity				

Travel

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE	0167 / ROLLING AIRFRAME MISSILE

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 Presidents Budget	11.790	30.112	44.367
FY 2007 Presidents Budget	11.553	29.657	41.673
Total Adjustments	-0.237	-0.455	-2.694
Summary of Adjustments			
Other General Provisions	-0.009	-0.455	0.000
Revised rates & inflation indices	0.000	0.000	0.241
SBIR	-0.244	0.000	0.000
Programmatic Adjustments	0.016	0.000	-2.935
Subtotal	-0.237	-0.455	-2.694

Schedule:

The Block II upgrade was initiated in FY05.

Technical: Not Applicable

R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE	0167 / ROLLING AIRFRAME MISSILE

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY2004 and Prior	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN LINE 523800 (RAM)	575.710	26.784	25.657	9.987	8.978	8.601	8.766	8.896	0.000	673.379
WPN LINE 224200 (RAM)	286.851	46.956	85.799	56.874	84.462	79.684	81.848	93.260	487.500	1,303.234

E. ACQUISITION STRATEGY:

RAM Block 1 MOD 3 Development and Testing FY05; improvements of missile capability deficiency against emergent threat FY2005-2007; Block II development FY05-10.

F. MAJOR PERFORMERS:

Raytheon Systems Company - Tucson, AZ - RAM Prime Contractor for Development and Contractor Test and Evaluation. Award Dates: FY05 - 3/05; FY06 - 2/06; FY07 - 11/06
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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **FEBRUARY 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE					PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	SS/CPFF	Raytheon Co, Tucson AZ & Louisville, KY	4.571			1.112	03/05	0.540	02/06	1.211	11/06	Continuing	Continuing		
Primary Hardware Dev Spt	WX	NAWC/China Lake						0.626	11/05	0.640	11/06	Continuing	Continuing		
Block 1 MOD 3 Eng/Interface Spt	SS/CPFF	Raytheon Co, San Diego								0.400	11/06	Continuing	Continuing		
Block 1 MOD 3 Interface Spt	CPFF	JHU/APL	0.774					0.100	11/05	0.300	11/06	Continuing	Continuing		
Block II upgrade	SS/CPAF	Raytheon Co, Tucson AZ & Louisville, KY				6.765	03/05	24.083	02/06	31.556	11/06	Continuing	Continuing		
Block II upgrade	WX	CL/NRL/DD				3.229	11/04	3.012	11/05	6.250	11/06	Continuing	Continuing		
Block II upgrade	CPFF	JHU/APL				0.300	11/04	0.400	11/05	0.400	11/06	Continuing	Continuing		
Subtotal Product Development			5.345			11.406		28.761		40.757		Continuing	Continuing		
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		

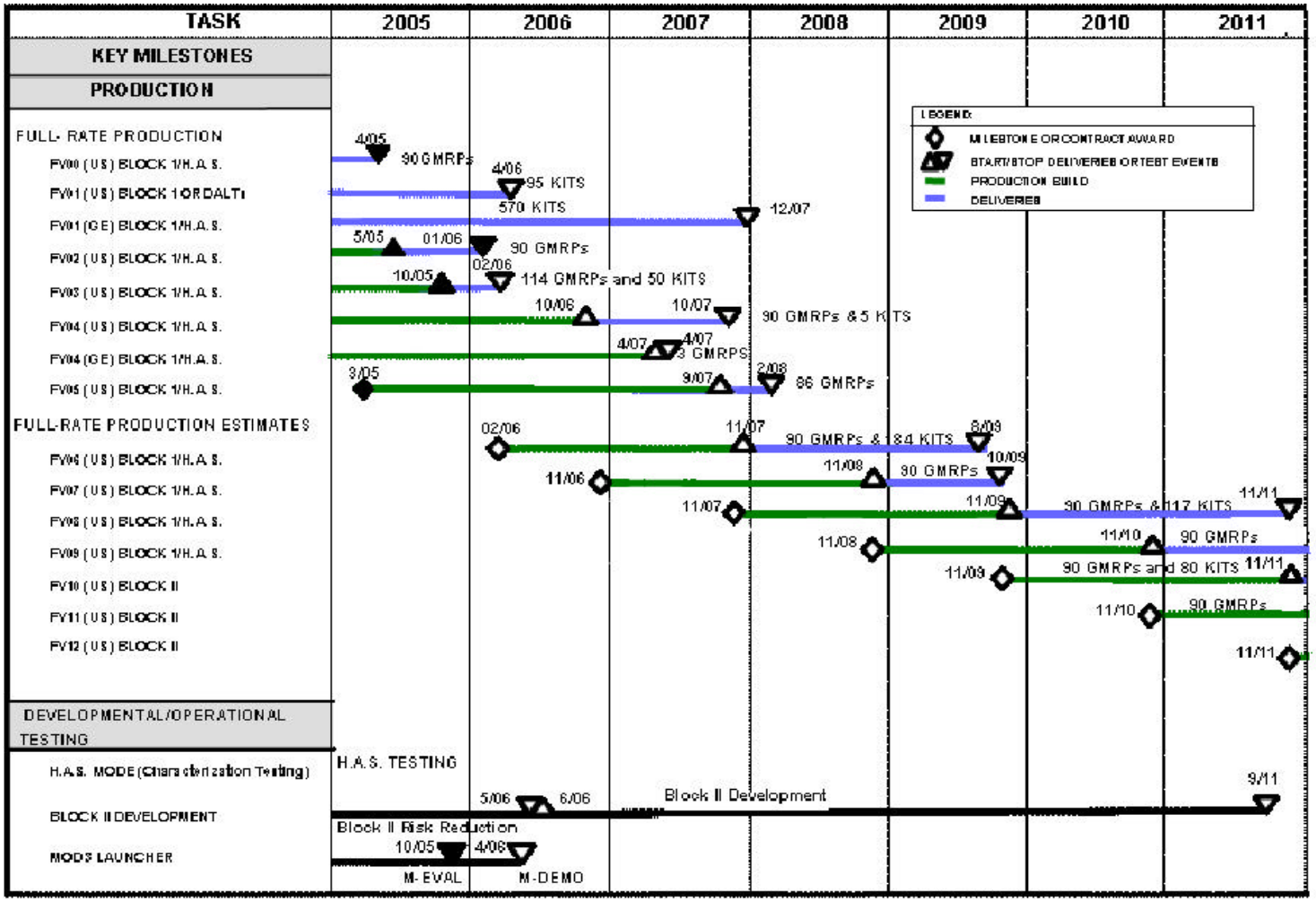
Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **FEBRUARY 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E/FOT&E/CTE	SS/CPAF	Raytheon Co, Tucson AZ & Louisville, KY	2.284									Continuing	Continuing	
FOT&E	WX	China Lake CA, PHD CA	4.674									Continuing	Continuing	
Test Support	WX	China Lake CA, PHD CA						0.734	11/05	0.750	11/06	Continuing	Continuing	
CTE Support	WX	NSWC/PHD CA										Continuing	Continuing	
Miscellaneous		Various	1.421									Continuing	Continuing	
Subtotal T&E			8.379			0.000		0.734		0.750		Continuing	Continuing	
Contractor Engineering Support														
Government Engineering Support														
Program Management Support														
Travel			0.156			0.147	10/04	0.162	10/05	0.166	10/06	Continuing	Continuing	
Transportation														
SBIR Assessment														
Subtotal Management			0.156			0.147		0.162		0.166		Continuing	Continuing	
Total Cost			13.880			11.553		29.657		41.673		Continuing	Continuing	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604756N SHIP SELF DEFENSE	0167 / ROLLING AIRFRAME MISSILE



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N BA-5**		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FY00 Full Rate Production (FRP) Deliveries		1Q-3Q						
FY02 FRP Deliveries		3Q-4Q	1Q-2Q					
FY03 FRP Deliveries			1Q-2Q					
FY04 FRP Deliveries				1Q-4Q	1Q			
FY05 FRP Contract Award		2Q						
FY05 FRP Deliveries				4Q	1Q-2Q			
FY06 FRP Contract Award			2Q					
FY06 FRP Deliveries					1Q-4Q	1Q		
FY07 FRP Contract Award				1Q				
FY07 FRP Deliveries						1Q-4Q	1Q	
FY08 FRP Contract Award					1Q			
FY08 FRP Deliveries							1Q-4Q	1Q
FY09 FRP Contract Award						1Q		
FY09 FRP Deliveries								1Q-4Q
FY10 FRP Contract Award							1Q	
FY10 FRP Deliveries								
FY11 FRP Contract Award								1Q
FY11 FRP Deliveries								
M-Eval/M-Demo		1Q-4Q	1Q-3Q					
Block II Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Block II DT/OT								1Q-4Q

R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE				PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEA RAM			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**17.320**	**9.827**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
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. FY05-06 funding completes development and testing of the ECP.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE-ENGAGE	9081 / PHALANX CIWS SEA RAM

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
SeaRAM Development/Phalanx Improvements		15.722	1.851	0.000
RDT&E Articles Quantity				

FY05-06 funding used to continue development of the SeaRAM ECP for the RAM MK31 Guided Missile Weapon System.

		FY 05	FY 06	FY 07
SeaRAM Testing		1.568	7.876	0.000
RDT&E Articles Quantity				

FY05-06 Contractor Test and Evaluation, analysis, and planning for DT/OT.

		FY 05	FY 06	FY 07
Travel		0.030	0.100	0.000
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)	9081 / PHALANX CIWS SEARAM

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 Presidents Budget	17.743	9.976	0.000
FY 2007 Presidents Budget	17.320	9.827	0.000
Total Adjustments	-0.423	-0.149	0.000
Summary of Adjustments			
Other General Provisions	-0.014	-0.149	
Programmatic adjustments	-0.009		
SBIR	-0.400		
Subtotal	-0.423	-0.149	

FY05-06 funding is for continued development and testing.

Technical: Not Applicable

R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE-ENGAGE	9081 / PHALANX CIWS SEA RAM

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY2004 and Prior	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN LINE 523800 (RAM)	575.710	26.784	25.657	9.987	8.978	8.601	8.766	8.896	0.000	673.379
WPN LINE 224200 (RAM)	286.851	46.956	85.799	56.874	84.462	79.684	81.848	93.260	487.500	1,303.234

E. ACQUISITION STRATEGY:

SeaRAM Development and Testing

F. MAJOR PERFORMERS:

Raytheon Systems Company - Tucson, AZ - SeaRAM Prime Contractor for Development. Award Date: FY05 -3/05; FY06 - 2/06
Naval Air Weapons Center, China Lake - China Lake, CA - Supporting SeaRAM 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 - 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. 127

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: **FEBRUARY 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)				PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEARAM									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY05 Cost	FY 05 Award Date	FY06 Cost	FY 06 Award Date	FY07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	SS/CPFF	Raytheon Co, Tucson AZ & Louisville, KY	3.840			14.340	3/05	0.851	2/06	0.000			19.031		
Ancillary Hardware Development															
Aircraft Integration															
SeaRAM Engineering		NSWC DD/PHD/LOU				0.382	11/04	0.500	11/05	0.000			0.882		
Ship Suitability															
Systems Engineering	FFP	EG&G				0.500	11/04	0.500	11/05	0.000			1.000		
Training Development															
Studies/Analysis	CPFF	APL				0.500	11/04			0.000			0.500		
Tooling															
GFE															
Award Fees															
Subtotal Product Development			3.840			15.722		1.851		0.000			21.413		
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:															

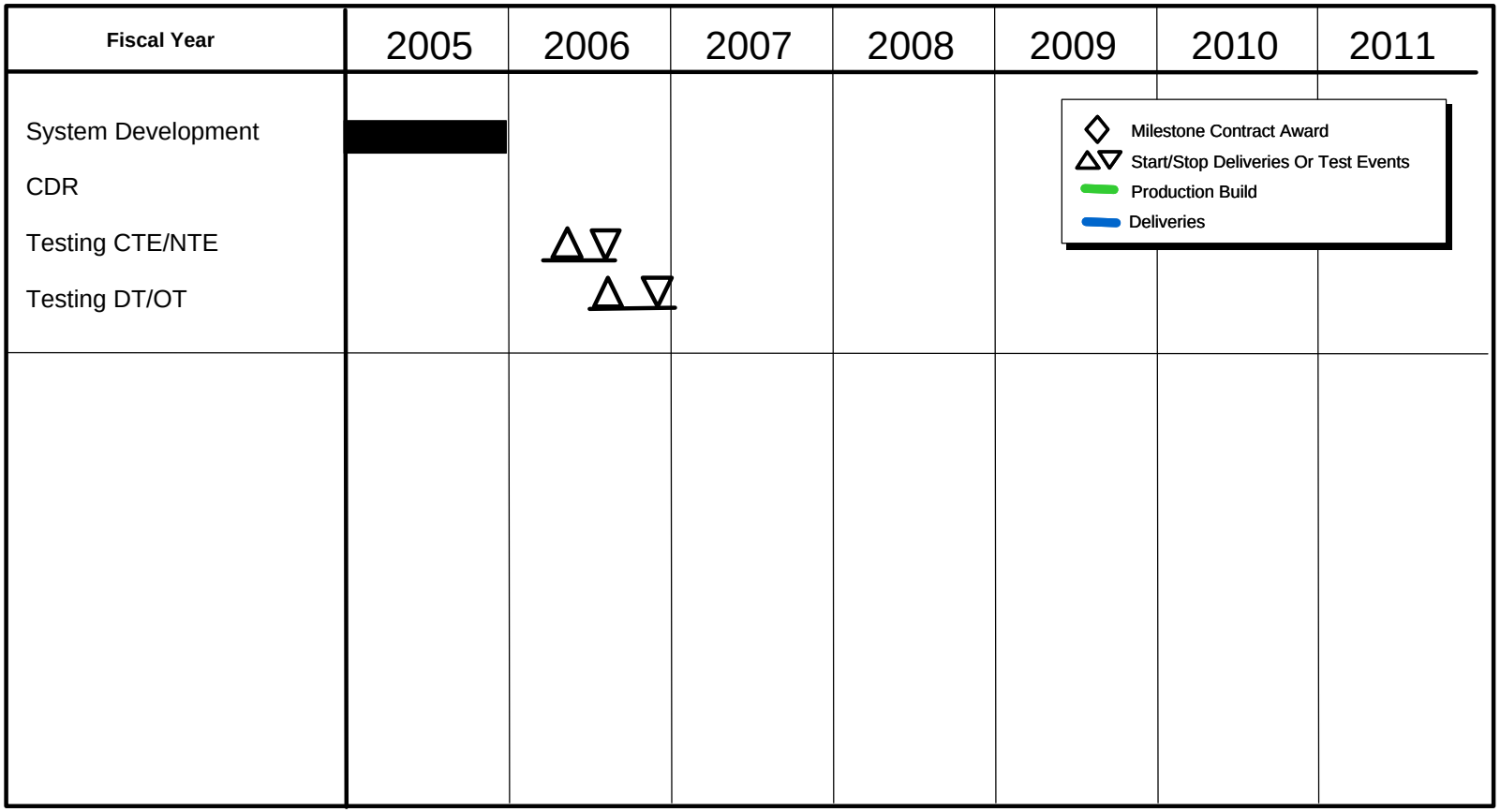
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)													DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-25**		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)				PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEARAM									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Test & Evaluation	SS/CPFF	Raytheon, Tucson AZ & Louisville, KY				0.612	3/05	1.404	2/06				2.016	
CT,DT&E, OT	WX	NSWC/PHD& China Lake				0.956	11/04	6.472	11/05				7.428	
Live Fire Test & Evaluation														
Test Assets														
Tooling														
GFE														
Award Fees														
Subtotal T&E			0.000			1.568		7.876		0.000			9.444	
Remarks:														
Contractor Engineering Support														
Government Engineering Support														
Program Management Support														
Travel						0.030	10/04	0.100	10/05				0.130	
Transportation														
SBIR Assessment														
Subtotal Management			0.000			0.030		0.100		0.000			0.130	
Remarks:														
Total Cost			3.840			17.320		9.827		0.000			30.987	
Remarks:														

R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEARAM



R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **FEBRUARY 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEARAM				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DEVELOPMENT							
Contract Award/Modification	2Q	2Q					
System Development	1Q-4Q						
System CTE/NTE		2Q-3Q					
DT/OT		3Q-4Q					

R-1 SHOPPING LIST - Item No. 127

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**				PROJECT NUMBER AND NAME **NATO SEASPARROW/0173**			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**17.934**	**5.849**	**4.717**	**4.791**	**4.866**	**4.929**	**5.024**	
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.

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.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
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/0173**

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.109	3.165	3.239
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. Provides funding for the ESSM S2S/HOH firings and firings associated with DT/OT on Aegis/DDG platforms.
This provides for the U.S. share of Cooperative efforts associated with ESSM engineering studies and other development Initiatives.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.707	1.200	0.500
RDT&E Articles Quantity			

Development: Utilizing existing technology and the Mk 29 Trainable Launcher, 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 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 FY 05. Correct engineering deficiencies identified as a result of DT/OT.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	7.337	0.000	0.000
RDT&E Articles Quantity			

FY05 Introduced 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 MK29/ESSM Launcher. RNSSMS/SSDS MK 2. FOT &E will be required to validate Combat system effectiveness.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / 5	**SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**	**NATO SEASPARROW/0173**

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	7.781	0.750	0.000
RDT&E Articles Quantity			

FY05-06 SSDS Post Integration: Building upon the current NSSMS MK 57 Mod 4 - 9 upgrade (Re-architectured 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 06.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.734	0.978
RDT&E Articles Quantity			

FY06-07 Provides funding for the Combat System Integration Technical Direction Agent (TDA) who will provide engineering support for combat system performance and risk mitigation. The TDA will leverage it's technical expertise & leadership to cover a broad range of activities such as defining near-term and future requirements for current systems and future upgrades, maintain system performance models to evaluate system improvements, threat changes and operational environment conditions, verify models and simulations to promote program success through application of rigorous and disciplined systems engineering principles and practices in a consistent manner across system elements over the program life cycle, make prudent use of authoritative technical expertise for advice and independent review, identify a range of technically acceptable alternatives to resolve engineering issues, assist in development of T&E planning, and continue to maintain NSPO essential research and engineering capabilities and corporate memory.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
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/0173**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 Presidents Budget	21.145	5.938	4.885
FY 2007 OSD BES	17.934	5.849	4.717
Total Adjustments	-3.211	-0.089	-0.168
Summary of Adjustments			
SBIR	-0.478		
Programmatic Changes	-2.717		-0.193
Revised rates & inflation indices			0.025
Other General Provisions	-0.016	-0.089	
Subtotal	**-3.211**	**-0.089**	**-0.168**

Schedule:

Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
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/0173**

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
WPN BA-2 Other Missiles, Evolved SEASPARROW (ESSM) (230700)	79.5	98.5	99.6	102.3	105.4	34.8	15.4
OPN BA-4 NATO SEASPARROW (523700, 523705)	24.9	37.9	4.6	28.7	12.3	12.7	12.7

Related RDT&E: PE 0603609N (Conventional Munitions)
PE 0604307N (AEGIS Combat System Engineering)
PE 0604755N (K2178 Quick Reaction Combat Capability (QRCC)

E. ACQUISITION STRATEGY:

ESSM is a directed sole source contract to Raytheon Missile Systems Company for LRIP, and upon successful completion of TECHEVAL/OPEVAL . Entered into Full Rate Production FY 04. The MK 29 ESSM Launcher Upgrade and RAERC?SSDS Intergration effort was a directed sole source contract to Raytheon Company (IDS).

F. MAJOR PERFORMERS:

1. Raytheon Missile Co. Tuscon ESSM Testing/ Engineering support
2. Raytheon Company (IDS) Portsmouth R.I. - MK 29 GMLS/ESSM Dev 2/04 -2/05
3. Naval Air Weapons Center China Lake, Point Mugu CA - Missile TDA supporting Development/Testing Funding under SEATASKs to field activities , 1/06
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, 1/06

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)					DATE: **February 2006**								
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT **SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**			PROJECT NUMBER AND NAME **NATO SEASPARROW/0173**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Developme	LC/CPAF	RAYTHEON	141.230	2.126	11/04							Continuing	Continuing	
	RX	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
MK 29/ESSM Launcher Upgrade	LC/CPAF	RAYTHEON SYS	7.239	0.707	01/05	0.575	01/06					Continuing	Continuing	
NATO-Primary Hdwe Dev	CPFF	RAYTHEON SYS	30.627									0.000	30.627	30.627
Software development / Test	CPFF	RAYTHEON SYS	3.331	1.650	12/04	1.289	01/06	1.438	12/06			Continuing	Continuing	
Systems Engineering/Firing Spt		VARIOUS	5.306										5.306	
SSDS Integration	CPFF	RAYTHEON SYS	4.545	7.690	12/04	0.750	01/06					Continuing	Continuing	
Subtotal Product Development			265.352	12.173		2.614		1.438				Continuing	Continuing	
Remarks:														
ESSM / NATO														
Integrated Logistics Support	WR	NSWC PHD	3.568									0.000	3.568	
Engr Support	WX	VARIOUS	3.895	0.312	10/04							0.000	3.895	
MK 29/ESSM Launcher Upgrade	WX	Dahlgren/PHD	0.375									0.000	0.375	
Engr Support	WX	VARIOUS	0.195									Continuing	Continuing	
NATO-MK 91/SSDS Integ	WX	Dahlgren/PHD	0.834									0.000	0.834	
Engr Support	WX	VARIOUS	6.044	0.320	10/04							0.000	6.364	
Engr Support	WX	NSWC PHD	0.081	0.154	10/04	0.145	01/06	0.185	10/06			Continuing	Continuing	
Subtotal Support			14.992	0.786		0.145		0.185				Continuing	Continuing	
Remarks:														

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)					DATE: **February 2006**								
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT **SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**			PROJECT NUMBER AND NAME **NATO SEASPARROW/0173**								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC CL	13.653										13.653	
OPEVAL/TECHEVAL/Test Firings	WR	VARIOUS(Corona, IHD,Dalhgren,NSWC PHD)	5.884	2.799	11/04	1.696	01/06	1.707	12/06			0.000	12.086	
Developmental Test & Evaluation	CPFF	APL	0.941	0.523	12/04	0.279	01/06	0.267	12/06			Continuing	Continuing	
Developmental Test & Evaluation	WR	DALHGREN	0.200	0.218	12/04							Continuing	Continuing	
Subtotal T&E			20.678	3.540		1.975		1.974				Continuing	Continuing	
Remarks:														
ESSM-ENGR SPT	WX	VARIOUS	4.663	0.250	VARIOUS							Continuing	Continuing	
ESSM-PM SPT	WX	VARIOUS	0.498									Continuing	Continuing	
ESSM-LABOR	PD/WX		6.713	0.860	10/04	0.865	01/06	0.870	10/06			Continuing	Continuing	
ESSM - TRAVEL	PD/WX		1.797	0.225	10/04	0.180	01/06	0.180	10/06			Continuing	Continuing	
ESSM- MISC	VARIOUS	VARIOUS	2.045	0.020	10/04							Continuing	Continuing	
NATO TRAVEL/MISC	PD/WX	VARIOUS	1.611	0.080	10/04	0.070	01/06	0.070	10/06			Continuing	Continuing	
Subtotal Management			17.327	1.435		1.115		1.120				Continuing	Continuing	
Total Cost			318.349	17.934		5.849		4.717				Continuing	Continuing	
Remarks:														

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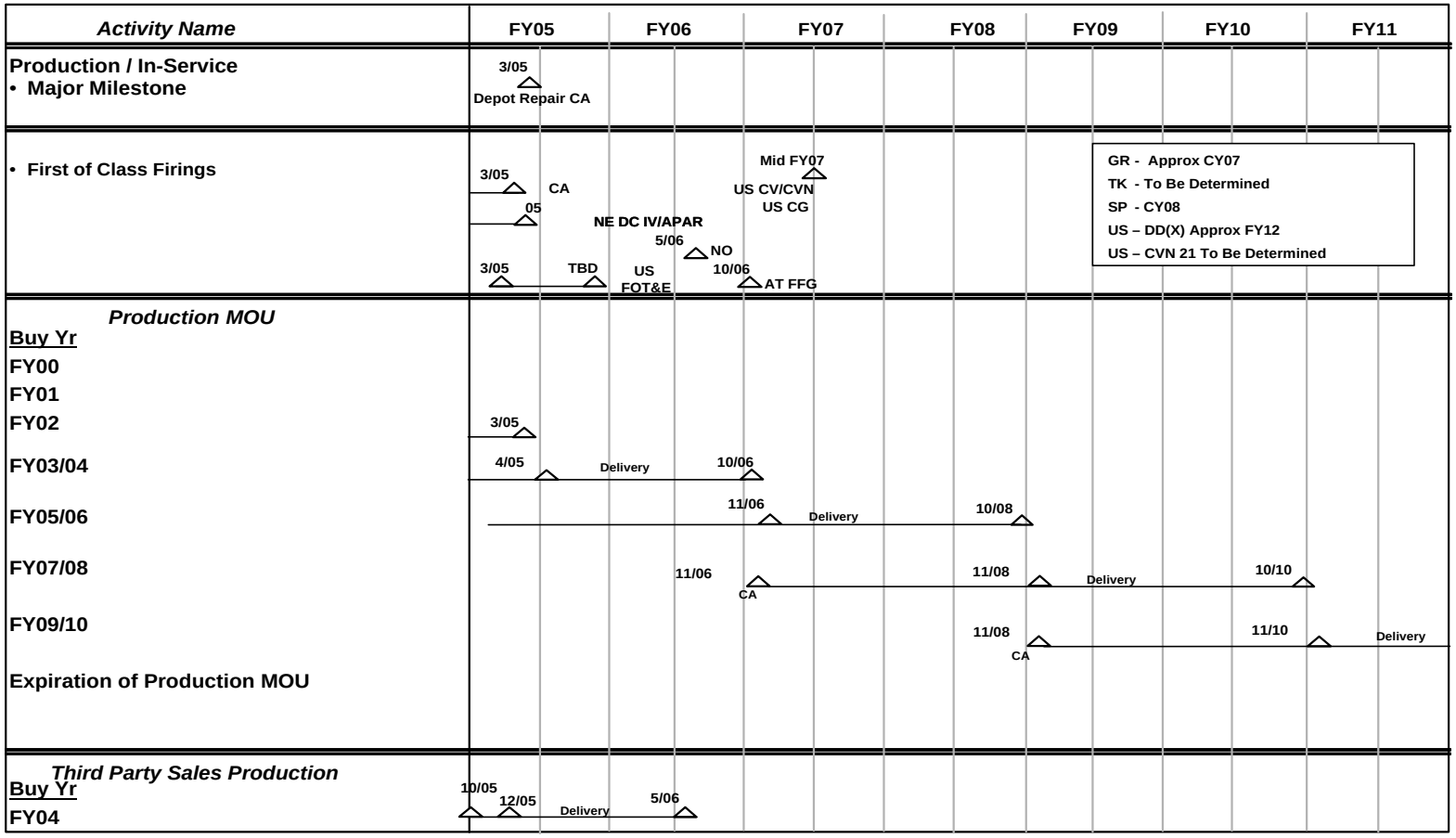
CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME **SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N**	PROJECT NUMBER AND NAME **NATO SEASPARROW/0173**



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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT **SHIP SELF DEFENSE (Engage: Hard Kill) 0604756N**				PROJECT NUMBER AND NAME **NATO SEASPARROW/0173 (ESSM)**		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Functional Configuration Audit (FCA)							
MK 29 /ESSM Launcher SDTS	1Q-2Q		1Q				
DT-IIC/OT-IIC Aegis		2Q					
ESSM S2S/HOH Firingd			1Q				
Test Firings			1Q				
MK 29 /ESSM Launcher CVN Test Event			2Q				
MK 29 /ESSM Launcher SDTS				1Q			
AEGIS CG DT/OT				2Q	2Q		
SDTS Firings						2Q	
DDX Test Support							2Q
Low-Rate Initial Production I Delivery							
Low-Rate Initail Production II Delivery	1Q						
IOC							
Full Rate Production (FRP) Decision							
Full Rate Production Start							
First Deployment							
FY05 PROCUREMENT	1Q						
FY06 PROCUREMENT		1Q					
FY 03/04 DELIVERY		3Q-4Q					
FY 07 PROCUREMENT			1Q				
FY 05 DELIVERY			1Q-4Q				
FY 08 PROCUREMENT				1Q			
FY06 DELIVERY				1Q-4Q			
FY07 DELVERY					1Q-4Q		
FR 08 DELIVERY						1Q	

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604756N SHIP SELF DEFENSE	Congressional Adds: various

CONGRESSIONAL PLUS-UPS:$4.500

	FY 06			
9853N				
PHALANX CIWS future concepts	2.000			

FY06 Congressional Add provides funding for Phalanx CIWS future concepts studies.

	FY 06			
9854N				
PHALANX CIWS self-destructing	2.500			

FY06 Congressional Add provides funding for Phalanx CIWS self-destructing ammunition development.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**37.599**	**33.550**	**11.513**	**18.602**	**20.237**	**20.651**	**19.034**
0954 Shipboard EW Improvements		**20.569**	**22.662**	**10.537**	**17.605**	**19.222**	**19.620**	**17.981**
2190/2441/Nulka Decoy		**3.825**	**0.988**	**0.976**	**0.997**	**1.015**	**1.031**	**1.053**
9244 / Surface Ship EW R&D Improvements (SBIR Phase III)		**9.836**						
9591/Shipboard Leverage EW System		**3.369**						
9999/Congressional Adds			**9.900**					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

0954 - 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. It replaces the AN/SLY-2(V) Advanced Integrated Electronic Warfare System (AIEWS) program, which 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 will be in progress, potential alternate element and component surveys performed, and ongoing Cost As an Independent Variable (CAIV) efforts will be employed throughout to aid decision-making. Threat system technologies will be examined and compared against program planning to achieve best capability within available resources. The capabilities and subsystems included in Blocks can change as technology matures for integration.

2190/2441 - 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 (ASMs) 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 to upgrade the Inertial Measurement Unit (IMU).

9244 - Congressional Add for Surface ship electronic warfare (EW) R&D Improvements (Note: only for Surface Ship EW SBIR Phase III improvements.)

9591 - Congressional Add for Shipboard Leveraged Electronic Warfare System (SLEWS)

9855N - Congressional Add of $1.5M for Radar Absorbing Tiles

2441C - Congressional Add of $2.0M for NULKA Decoy System

9856N - Congressional Add of $2.5M for Sea Raptor,

9244C - Congressional Add of $3.9M for Surface Ship EW Improvement Program (Note: Only for continuation of SBIR phase III follow-On).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)				PROJECT NUMBER AND NAME 0954/9244 Shipboard EW Improvements			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**33.774**	**22.662**	**10.537**	**17.605**	**19.222**	**19.620**	**17.981**
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. It replaces the AN/SLY-2(V) Advanced Integrated Electronic Warfare System (AIEWS) program, which 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 will be in progress, potential alternate element and component surveys performed, and ongoing Cost As an Independent Variable (CAIV) efforts will be employed throughout to aid decision-making. Threat system technologies will be examined and compared against program planning to achieve best capability within available resources. The capabilities and subsystems included in Blocks can change as technology matures for integration.

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 currently adds 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 could add other capabilities if they mature in time. Block 1B is planned to begin at-sea testing in FY05. Block 1C currently 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.

FY05 funding includes 2 Congressional Adds: $3.5M for Shipboard Leverage Electronic Warfare System (SLEWS), and $10.2M for Surface Ship EW SBIR Phase III Research and Development improvements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	0954/9244 Shipboard EW Improvements

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.337	0.927	0.370
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 will be used throughout to aid decision-making. 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. This includes funding studies and analysis of other service capabilities and future capabilities for interoperability.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.080	0.000	0.000
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 Defense (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 ESE, ICAD, and Block 1A. 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 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		12.240	10.260	5.861
RDT&E Articles Quantity				

The Systems Integrator contract is currently performing system level technical design, technical coordination, integration, and testing of SEWIP . The System Integrator is responsible for developing the overall technical roadmap for SEWIP, including the detailed technical plan for each block upgrade. The System Integrator will perform any required CAIV analysis, develop overall technical performance requirements, perform system level functional allocations, coordinate the execution of the block upgrades. The System Integrator is responsible for the overall integration of 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: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	PROJECT NUMBER AND NAME 0954/9244 Shipboard EW Improvements

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		10.353	10.019	3.725
RDT&E Articles Quantity				

Block 1B development currently includes Specific Emitter Identification (SEI) by integrating the existing Small Ship ESM (SSESM) system with SEWIP and the incorporation of partial High Gain High Sensitivity (HGHS) capability . 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. Block 1B could add other capabilities if they mature in time. 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, RDDL,HGHS, DPU/DTU, ICAD Upgrades and LAMPS Interface Upgrades.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.395	0.000	0.000
RDT&E Articles Quantity				

Block 1C currently includes the incorporation of full 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. RDDL development, ILS engineering, CONOPS and related engineering development are a part 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 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.000	1.456	0.581
RDT&E Articles Quantity				

Program office and Systems Engineering of 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 & Capabilities Documents, TEMP, AP, SAMP, CMP, ILSP, NTSP,PLCCE, APB, etc) to meet statutory and regulatory requirements.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.369	0.000	0.000
RDT&E Articles Quantity				

Receiver Replacement Studies, which includes the Shipboard Leverage Electronic Warfare System and Sea Raptor

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	0954/9244 Shipboard EW Improvements

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY06 PB controls):	38.094	23.008	10.568
Current Budget (FY07 PB controls):	33.774	22.662	10.537
Total Adjustments	-4.320	-0.346	-0.031
Summary of Adjustments			
General Provisions	-0.031	-0.346	
Programatic Changes	-3.514		-0.092
SBIR	-0.775		
Revised rates & inflation indices			0.061
Subtotal	-4.320	-0.346	-0.031

Schedule:

See attached schedule.

Technical:

See attached Schedule

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	0954/9244 Shipboard EW Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total Complete	Cost
OPN BA-2 AN/SLQ-32(V) (2312)	19.900	24.721	30.955	32.064	31.729	35.468	34.584	TBD	TBD
O&M,N AN/SLQ-32 (12CR0/1C2C)	1.317	5.761	5.455	5.192	5.525	5.696	5.833	TBD	TBD
O&M,N AN/SLQ-32 (14DX0/1D4D)	8.015	0.000	0.000	0.000	0.000	0.000	0.000	TBD	TBD

E. ACQUISITION STRATEGY:

The Surface EW Improvement Program (SEWIP) will accomplish Block upgrades based on integrating technology advances and adding functional capabilities in an incremental fashion. Each Block and sub-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
GD-AIS Fairfax, VA - System Integrator development contract
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

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)					PROJECT NUMBER AND NAME 0954/9244 Shipboard EW Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development			151.420										151.420	
ESE Development	SS / FFP	Northrop Grumman	5.001									TBD	TBD	TBD
ESE Development	SS / CPFF	Northrop Grumman	0.471									TBD	TBD	TBD
ICAD Development-SBIR Phase III	SS / CPAF	GD-AIS	10.936			0.811	03/05					TBD	TBD	TBD
System Integrator	SS / CPAF	GD-AIS	22.261			12.240	11/04	10.260	11/05	5.861	11/06	TBD	TBD	TBD
SSESM rehost/HGHS	WX	NRL	5.332			3.700	11/05					TBD	TBD	N/A
Q-70 Mods	SS / CPFF	LM-EAGAN	2.091									TBD	TBD	TBD
Subtotal Product Development			197.512			16.751		10.260		5.861		TBD	TBD	
Remarks:														
Integrated Logistics Support	WX	NSWC Crane, DD, NRL	2.243			1.322	11/04	1.500	11/05	0.894	11/06	TBD	TBD	N/A
Government Engineering Support	WX	NSWC Crane, DD, NRL	10.191			6.478	11/04	6.983	11/05	1.741	11/05	TBD	TBD	N/A
Tech Eng Svcs, Studies & Analyses	WX, MP	Crane, DD, NRL, BAE	2.884			2.910	11/04	1.329	11/05	0.595	11/06	TBD	TBD	N/A
Miscellaneous	WX	NSWC Crane, DD, NRL												
Subtotal Support			15.318			10.710		9.812		3.230		TBD	TBD	
Remarks:														

R-1 SHOPPING LIST - Item No. 128

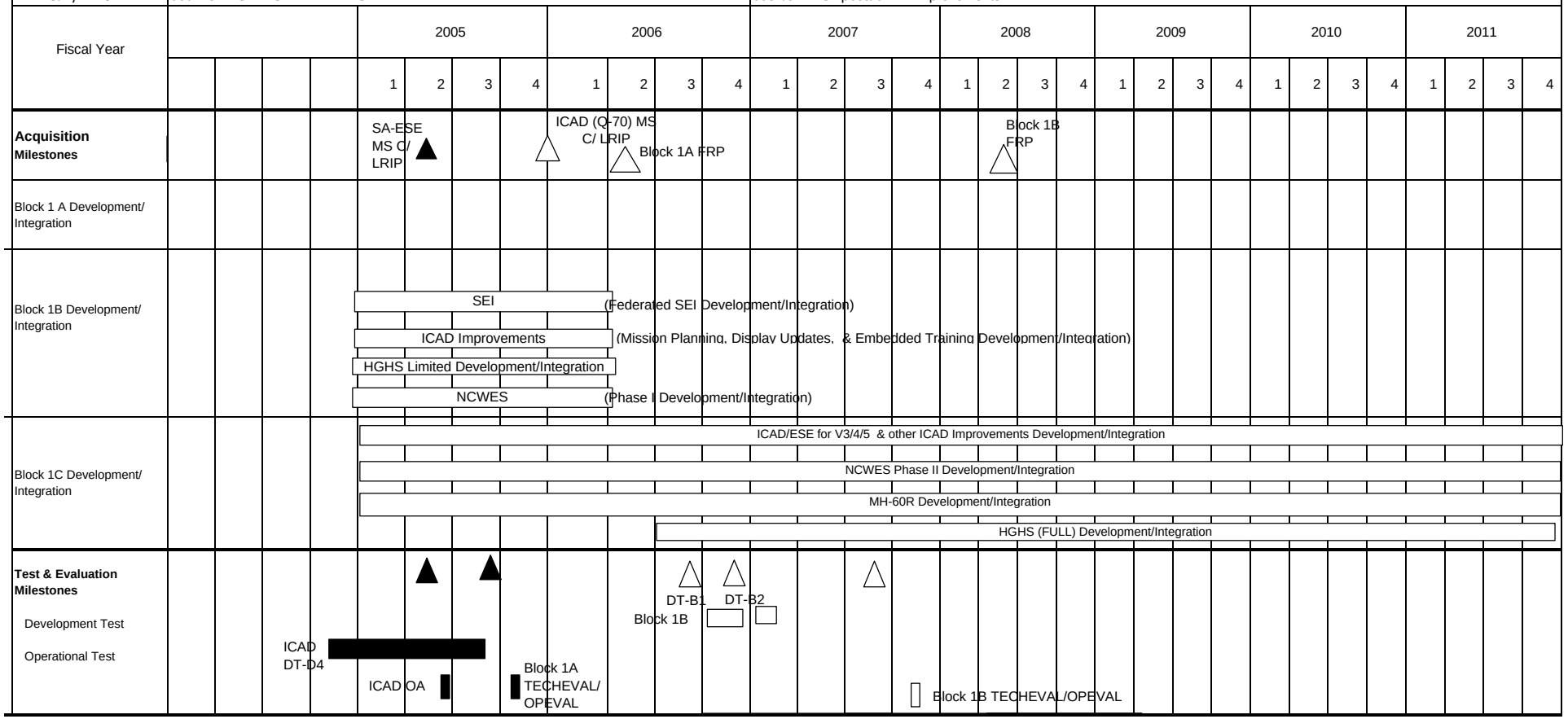
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)				PROJECT NUMBER AND NAME 0954/9244 Shipboard EW Improvements								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	WX	NSWC Crane, DD, NRL	9.457			2.143	01/05					TBD	TBD	
Block 1B Test Planning/T&E Events	WX	NSWC Crane, DD, NRL	0.931			2.003	01/05	0.500	11/05	0.200	11/05	TBD	TBD	
Block 1C Test Planning/T&E Events												TBD	TBD	
												TBD	TBD	
												TBD	TBD	
												TBD	TBD	
Subtotal T&E			19.346			4.146		0.500		0.200		TBD	TBD	
Remarks:														
Program Management Support	FFP	SEAPORT	22.855			1.094	11/04	0.890	11/05	0.595	11/06	TBD	TBD	
Program Management Support	WX	NSWC/Crane & DD, NRL	5.276			0.973	11/04	1.100	11/05	0.551	11/06	TBD	TBD	
Travel			0.205			0.100		0.100		0.100		TBD	TBD	
Subtotal Management			28.336			2.167		2.090		1.246		TBD	TBD	
Remarks:														
Total Cost			260.512			33.774		22.662		10.537		CONT	CONT	
Remarks:														

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDG: **RDT&E, N /** | PROGRAM ELEMENT NUMBER AND NAME: 0604757N SHIP SELF DEFENSE | PROJECT NUMBER AND NAME: 0954/9244 Shipboard EW Improvements



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE				PROJECT NUMBER AND NAME 0954/9244 Shipboard EW Improvements			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
RDC Approval								
Stand Alone ESE Development/Integration								
ICAD (Integrated ESE & Q-70) Development/Integration								
AN/SSX-1 RDC (Stand Alone SEI) Lab Development Transition								
SEI (Federated SEI) Development/Integration		1Q						
ICAD Improvements (Mission Planning, Display Updates, Embedded Training) Development/Integration		1Q-4Q	1Q					
HGHS Limited Development/Integration		1Q-4Q	1Q					
NCWES (Phase I) Development/Integration		1Q-4Q	1Q					
ESE Developmental Testing (DT-D2B)								
Developmental Test Readiness Review (ESE)								
ESE Developmental Testing (DT-D3)								
Developmental Test Readiness Review (ICAD)								
ESE Operational Test Readiness Review								
ESE Operational Test (OA) (OT-D1)								
Stand Alone-ESE Milestone C LRIP		2Q						
ICAD/Q-70 Milestone C LRIP		4Q	1Q					
ICAD Operational Test Readiness Review								
ICAD Operational Test (DT-D4)		1Q-3Q						
Operational Test Readiness Review (ICAD)		2Q						
ICAD Operational Testing (OA)		2Q						
Operational Test Readiness Review (Block 1A)		3Q						
Block 1A TECHEVAL/OPEVAL								
ICAD/ESE for V3/4/5 & other ICAD Improvements Development/Integration		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
NCWES (Phase II) Development/Integration		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
MH-60R Development/Integration		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
HGHS Development/Integration			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Block 1A FRP			2Q					
Developmental Test Readiness Review (Block 1B)			2Q					
Block 1B Developmental Test (DT-B1)			3Q					
Developmental Test Readiness Review (Block 1B)			4Q					
Block 1B Developmental Test (DT-B2)				1Q				
Operational Test Readiness Review (Block 1B)				3Q				
Block 1B Operational Test (OA) (OT-B1)				4Q				
Block 1B FRP					2Q			

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)				PROJECT NUMBER AND NAME 2190/2441/Nulka Decoy			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**3.825**	**0.988**	**0.976**	**0.997**	**1.015**	**1.031**	**1.053**
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 (ASMs) 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 to upgrade the Inertial Measurement Unit (IMU).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	2190/2441/Nulka Decoy

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.500	0.000	0.000
RDT&E Articles Quantity				

Continue development of anti-tampering system for payload.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.671	0.000	0.339
RDT&E Articles Quantity				

Continue Inertial Measurement Unit (IMU) evaluation. The current system design has identified limitations at some air speeds which introduce errors into flight trajectories. The incorporation of an IMU within the FCU will eliminate these limitations, make the EDC more effective against current ASM threats, more capable of defeating emerging advanced ASM threats, increase system reliability and eliminate the pending obsolescence issue (pressure air data assembly and gyroscopes).

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.949	0.000	0.000
RDT&E Articles Quantity				

Refresh Decoy Launch Processor (DLP)/Decoy Launch System (DLS) technology. The current DLP software environment is obsolete and compromises the ability to respond to threat evolution. The components need to be replaced with tools that will support the NULKA program through the program lifecycle.

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	2190/2441/Nulka Decoy

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.705	0.988	0.637
RDT&E Articles Quantity				

NULKA decoy subsystem integration and improvements to include Dual RF, EMC, Effectiveness Studies, Flyable Cartridge, Engineering Studies and Fly Out Tactics.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	2190/2441/Nulka Decoy

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY2007
FY 2006 President's Budget:	3.894	1.004	1.016
FY 2007 PRESBUD:	3.825	0.988	0.976
Total of adjustment	-0.069	-0.016	-0.040

Summary of Adjustments			
General Provisions	-0.003	-0.016	
Programatic Changes	-0.001		-0.046
SBIR	-0.065		
Revised rates & inflation indices			0.006
	-0.069	-0.016	-0.040

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE	2190/2441 NULKA DECOY

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	To Complete	Total Cost
OPN: Anti-Ship Missile Decoy System/5530 (In Millions)	54.476	42.901	54.131	55.525	57.180	58.546	59.522	205.800	821.500

E. ACQUISITION STRATEGY:

Not Applicable

F. MAJOR PERFORMERS:

NSWC Crane , IN Product Development
NSWC Dahlgren, VA Product Development
NRL Washington, DC Product Development
Lockheed Martin, Marion, MA Product Development
Baes, Australia Product Development

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: **FEBRUARY 2006**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)							PROJECT NUMBER AND NAME 2190/2441/Nulka Decoy					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RC	NSWC Crane, IN	3.000										3.000	
	RX	BAES/Sippican	4.232			1.424	01/05		03/06				5.656	
	MIPR	BAES	3.563			0.670	11/04			0.339	11/05	Continuing	Continuing	
Ship Suitability														
Systems Engineering	WX	NRL	0.558			0.522	10/04	0.492	10/04	0.576	10/05	Continuing	Continuing	
Systems Engineering	WX	NWAD China Lake	0.070			0.050	11/04	0.000	10/04	0.000	10/05	Continuing	Continuing	
MK 53 Sys Engineering Change	FFP	Sechan	0.150											
Systems Engineering	RX	NSWC Dahlgren, VA	0.044			0.400								
Systems Engineering	WX	NSWC Crane, IN				0.227								
Subtotal Product Development			11.617			3.293		0.492		0.915		Continuing	Continuing	
Remarks:														
Development Support	RX	NRL	1.214			0.100	10/04			0.000	10/05	Continuing	Continuing	
Software Development	WX	NSWC Dahlgren	1.819			0.275	10/04	0.433		0.000	10/05	Continuing	Continuing	
Training Development														
Integrated Logistics Support														
Configuration Management														
Technical Data														
GFE														
Award Fees														
Subtotal Support			3.033			0.375		0.433		0.000		Continuing	Continuing	

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: **FEBRUARY 2006**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)						PROJECT NUMBER AND NAME 2190/2441/Nulka Decoy					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	FFP	SEAPORT	0.294			0.100	11/04					Continuing	Continuing	
Travel			0.233			0.057	various	0.063		0.061		Continuing	Continuing	
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			0.527			0.157		0.063		0.061		Continuing	Continuing	
Remarks:														
Total Cost			15.177			3.825		0.988		0.976		Continuing	Continuing	
Remarks:														

EXHIBIT R4, Schedule Profile | DATE: FEBRUARY 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE	2190/2441 NULKA DECOY

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
					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																												
Production Milestones												△ DLP v. 6.3																△ LHA 6 Install Cert
Test & Evaluation Milestones											LPD 18 DT				USCG Deepwater DT						IMU Land Based Test							IMU AT-SEA Test
Development Test											△				△		△										△	
Operational Test															△ LSD 41/49 Class DT													

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**		PROGRAM ELEMENT 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			PROJECT NUMBER AND NAME 2190/2441/Nulka Decoy			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY 2011
LPD 18 DT			4Q					
DLP v 6.3			4Q					
LSD 41/49 Class DT					1Q			
USCG Deepwater DT				4Q				
IMU Land Based Test						1Q		
IMU At-SEA Test								2Q
LHA 6 Install Cert								2Q

R-1 SHOPPING LIST - Item No. 128

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604757N SHIP SELF DEFENSE	Various Congressional Adds

CONGRESSIONAL PLUS-UPS:

	FY 06			
9244C	3.900			
Surface Ship EW Improvement Program				

The Systems Integrator contract is currently performing system level technical design, technical coordination, integration, and testing of SEWIP . The System Integrator is responsible for developing the overall technical roadmap for SEWIP, including the detailed technical plan for each block upgrade. The System Integrator will perform any required CAIV analysis, develop overall technical performance requirements, perform system level functional allocations, coordinate the execution of the block upgrades. The System Integrator is responsible for the overall integration of the portions of the system and performing element testing as well as system level performance testing.

	FY 06			
9856N	2.500			
SEA RAPTOR				

Receiver Replacement Studies, which includes the Shipboard Leverage Electronic Warfare System and Sea Raptor

	FY 06			
9855N	1.500			
Advanced Radar absorbing tiles for surface ships				

Develop an advanced radar absorbing material

	FY 06			
2441C/Nulka Decoy System	2.000			
Nulka Decoy System				

Nulka research for development of additional capability against anti-ship missiles.

R-1 SHOPPING LIST - Item No. 128

Exhibit R-2, RDT&E,N Budget Item Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				R-1 Item Nomenclature: Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	$49,769	$47,294	$7,663	$7,943	$8,025	$8,103	$8,156
Medical/Dental Equipment Development/0933	6,711	7,094	7,663	7,943	8,025	8,103	8,156
Coastal Cancer Control/2795	3,379	0	0	0	0	0	0
Vector Vaccine/2836	1,209	2,500	0	0	0	0	0
Military Dental Research/2896	3,367	3,400	0	0	0	0	0
Minimally Invasive Surgical Technology Institute/9002	2,897	2,100	0	0	0	0	0
Biomedical Research Imaging/9003	2,414	2,000	0	0	0	0	0
Community Hospital Tele-Health Consortium/9005	965	0	0	0	0	0	0
Medical Procedures Reference Tool (MPRT)/9251	3,293	0	0	0	0	0	0
Discovery, Early, Detection, Evaluation, Treatment and Prevention/9397	6,782	5,100	0	0	0	0	0
Distress Streamer Signaling System/9398	2,968	1,000	0	0	0	0	0
Health Query and Analysis System/9399	3,291	0	0	0	0	0	0
Clinical Trial for Hemostatic Therapy/9592	1,446	0	0	0	0	0	0
Multivalent Dengue Vaccine Program/9593	1,941	1,500	0	0	0	0	0
Rare Blood Program/9594	965	0	0	0	0	0	0
Room Elevated Temperature Stable Hemoglobin/9595	6,792	0	0	0	0	0	0
Somatic Cell Processing Program (Diabetes Research)/9596	1,349	1,700	0	0	0	0	0
Congressional Adds 9999		20,900					

R-1 Line Item No. 130

pg 1

Exhibit R-2, RDT&E,N Budget Item Justification	Date: January 2006
Appropriation/Budget Activity RDT&E,N/BA 5	R-1 Item Nomenclature: Medical Development 0604771

A. **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 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.

B. **Program Change Summary:**	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	$50,791	$7,202	$7,585
FY 2007 DON Request	$49,769	$47,294	$7,663
Total Adjustments	-$1,022	$40,092	$78
Program Adjustments	$17		34
Rate Adjustment			44
Congressional Adds		$40,200	
Sect. 8125 Economic Assumptions		-33	
Congressional Reduction		-75	
Small Business Innovation Research Tax	-999		
Department of Energy Transfer	-40	0	

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Medical/Dental Equipment Development/0933	$6,711	$7,094	$7,663	$7,943	$8,025	$8,103	$8,156
RDT&E,N Articles Quantity							

A. **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.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$6,711	$7,094	$7,663
RDT&E,N Articles Quantity			

FY 2005 Accomplishments

Test and Evaluation of the Submarine Attrition Risk Scale - Continued data collection and test and evaluation of a psychological testing instrument to identify submarine school students who are at risk for separation from the Navy;

Efficacy of LED versus Low-Level Laser Therapy (LLLT) in the Treatment of Acute Inversion Ankle Sprains - Completed the investigation of efficacy of Light emitting diodes as a treatment of acute inversion ankle sprains in military personnel;

Operative Field Dentistry - Continued Phase Two of the analysis of components of the operative field dentistry Authorized Dental Allowance List (ADAL 662);

Atmospheric Contaminants on Disabled Submarines - Continued the investigation of potential submarine atmosphere contaminants;

Treatment of Acute Acoustic Trauma - Completed the prospective study to assess the efficacy of the nutritional supplement N-Acetylcsteine in the treatment of acute acoustic trauma (aka - Reactor Trial);

Prevention and Protection from Acute Trauma - Completed investigation of the nutritional supplement N-Acetylcystene (NAC) as an adjunct to hearing protection devices (HPD) for mitigating the risk of Noise-Induced Hearing Loss (NIHL) in soldiers exposed to military noise;

Restoring Effective Survival in Shock - Continued the Phase III clinical trial of a hemoglobin-based oxygen carrier for use in treatment of hemorrhagic shock;

Improved Administration of Anti-Motion Sickness Medications - Continued evaluation of a fast acting nasal delivery system for medications to treat motion sickness in aviators;

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Medical/Dental Equipment Development/0933	$6,711	$7,094	$7,663	$7,943	$8,025	$8,103	$8,156
RDT&E,N Articles Quantity							

FY 2005 Accomplishments (Continued)

Impact Injury Prevention (formerly Biodynamics Database Analysis - Continued analysis of high speed aviation crash simulation research conducted at the former Naval Biodynamics Laboratory from the 1950s - 1980s for application to new high-speed, high-agility aircraft and vehicle development;

Validation of the U.S. Navy Dental Classification System - Continued analysis of the Navy dental classification system based on operational experience during the Operations Enduring Freedom and Iraqi Freedom;

Tactical Medical Coordination System (TACMEDCS) - Continued development of a joint US Navy, US Marine Corps prototype refinement of the tactical medical coordination system focusing on ensuring compatibility with DOD IM/IT systems such as TRANSCOM Regulating and Command and Control Evacuation System (TRACES), Composite Healthcare System II (CHCS II), and Theater Medical Information Program - Joint (TMIP-J).

FY 2006 Plan

Test and Evaluation of the Submarine Attrition Risk Scale - Complete data collection and test and evaluation of a psychological testing instrument to identify submarine school students who are at risk for separation from the Navy;

Efficacy of LED versus LLLT in the Treatment of Acute Inversion Ankle Sprains - Complete the investigation of the efficacy of Light emitting diodes as a treatment of acute inversion ankle sprains in military personnel;

Operative Field Dentistry - Complete Phase Two of the analysis of components of the operative field dentistry ADAL (ADAL 662);

Atmospheric Contaminants on Disabled Submarines - Complete the investigation of potential submarine atmosphere contaminants;

Restoring Effective Survival in Shock - Continue the Phase III clinical trials of a hemoglobin-based oxygen carrier for use in treatment of hemorrhagic shock;

Operative Field Dentistry - Continue the final Phase of the analysis of components of the operative field dentistry ADAL (ADAL 662) emphasizing recent operation experience;

Improved Administration of Anti-Motion Sickness Medications - Complete the evaluation of a fast-acting nasal delivery system for medications to treat motion sickness in aviators;

Impact Injury Prevention (formerly Biodynamic Database Analysis - Complete the analysis of high speed aviation crash simulation research conducted at the former Naval Biodynamic Laboratory from the 1950s-1980s for applications to new high-speed, high-agility aircraft and vehicle development;

FY 2006 Plan (Continued)

Validation of the U.S. Navy Dental Classification System - Complete the analysis of the Navy dental classification system based on operational experience during the Operations Enduring Freedom and Iraqi Freedom;

TACMEDCS - Complete the joint US Navy, US Marine Corps prototype refinement of the tactical medical coordination system focusing on ensuring compatibility with DOD IM/IT Systems such as TRACES, CHCS II, and TMIP-J;

Transition Projects from the Warfighter Protection Future Naval Capability - Continue transition testing and development of a variety of non-specific prototypes that will begin to arise from the 6.3 Advanced Development Program at the Office of Naval Research through FY 2005;

Transition Projects from the Office of Naval Research Sponsored Medical R&D Core Capability Program - Continue transition testing and development of a variety of Fleet endorsed, non-specific prototypes that were developed in the 6.1 and 6.2 Core Capability program at Office of Naval Research through FY 2005.

FY 2007 Plan

Operative Field Dentistry - Complete the final Phase of the analysis of components of the operative field dentistry ADAL (ADAL 662) emphasizing recent operational experience;

Improved Administration of Anti-Motion Sickness Medications - Complete the evaluation of a fast-acting nasal delivery system for medications to treat motion sickness in advance;

Biodynamics Database Analysis - Complete the analysis of high speed aviation crash simulation research conducted at the former Naval Biodynamics Laboratory from the 1950s-1980s for application to new high-speed, high-agility aircraft and vehicle development;

Transition Projects from the Warfighter Protection Future Naval Capability - Continue transition testing and development of non-specific prototypes that will begin to arise from the 6.3 Advanced Development Program at the Office of Naval Research through FY 2005;

Transition Projects from the Office of Naval Research Sponsored Medical R&D Core Capability Program - Continue transition testing and development of Fleet endorsed, non-specific prototypes that were developed in the 6.1 and 6.2 Core Capability program at Office of Naval Research through FY 2005.

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Medical/Dental Equipment Development/0933	$6,711	$7,094	$7,663	$7,943	$8,025	$8,103	$8,156
RDT&E,N Articles Quantity							

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Coastal Cancer Control/2795	3,379	0	0	0	0	0	0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$3,379	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to develop cancer incidence and prevalence studies, risk factor identification, patterns of use and delivery of health care for cancer, epidemiologic and statistical analyses of cancer rates, geographic pattern mapping, genetic risk factor identification, and other related research.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Vectored Vaccine Research Program/2836	$1,209	$2,500	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$1,209	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to support the development of simple non-invasive technology to apply vaccines without needles against endemic infectious disease and biological threat agents.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Military Dental Research/2896	$3,367	$3,400	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$3,367	$3,400	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Supports research to examine the dental threat to our operational forces and develop techniques and products to improve dental and medical care for these forces.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Minimally Invasive Surgical Technology Instutute/9002	$2,897	$2,100	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$2,897	$2,100	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to develop minimally invasive surgical techniques, emphasizing the use of advanced optical imaging for enhanced clinical visualization and display that could be used in telemedicine and robotic surgery.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Biomedical Research Imaging - COH National Medical Center/9003	$2,414	$2,000	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$2,414	$2,000	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Supports efforts to expand the molecular imaging facilities at the City of Hope National Medical Center and the Beckman Research Institute needed to conduct cellular imaging to explore cancer and marrow research questions that are important for improvements in therapy.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Community Hospital Tele-Health Consortium/9005	$965	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$965	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to develop systems that will improve and expand access to affordable, quality health care for underserved rural and urban populations.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Medical Procedures Reference Tool (MPRT)/9251	$3,293	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$3,293	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts will lead to the development of a computer-based system that provides refresher, advanced medical training, and specialized reference materials to Navy Corpsmen (HM).

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Evaluation, Treatment and Prevention/9397	$6,782	$5,100	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$6,782	$5,100	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to determine the relationship of vitamin D status to colon, breast, and prostate cancer and to perform transitional research that may provide optimal control of these disorders and thereby, enhance warfighter readiness.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Distress Streamer Signaling System/9398	$2,968	$1,000	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$2,968	$1,000	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to determine optimal search and rescue altitude for detection of personnel submarine mishap survivors on the surface using the SEA/RESCUE streamer in varying sea states and weather conditions.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Health Query and Analysis System/9399	$3,291	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$3,291	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to develop enhanced medical surveillance capability to rapidly obtain, analyze and provide more comprehensive medical information to Commanders in the field.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Acceleration of Clinical Trial for Hemostatic Therapy/9592	$1,446	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$1,446	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to perform a clinical trial for the proprietary hemostatic therapeutic, Stasix, a freeze-dried human platelet preparation manufactured by Hemocellular Therapeutics for the treatment of hemorrhage.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Multivalent Dengue Vaccine Program/9593	$1,941	$1,500	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$1,941	$1,500	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to develop and conduct pre-clinical testing of a multivalent recombinant adenovirus vaccine to protect against infection with all four types of dengue fever virus.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Rare Blood Program/9594	$965	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$965	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funding allows for increased participation in the rare blood program. This program was developed because of a need to register more ethnic minority blood donors in order to provide better matched red cells for patients with chronic transfusion needs who tend to develop antibodies after multiple transfusions.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Room Elevated Temperature Stable Hemoglobin Based/9595	$6,792	$0	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$6,792	$0	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: Funded efforts to advance a clinical trial for the proprietary therapeutic, Hemopure, a universally compatible, hemoglobin substitute manufactured by Biopure Corporation for the treatment of hemorrhage.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Somatic Cell Processing Program (Diabetes Research)/9596	$1,349	$1,700	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** This project provide the funds for overhead, facility maintenance, and general-purpose equipment. The Navy Medical Research and Development Laboratories predominantly support Force Health Protection research and development of biomedical technologies that help prevent illness, reduce injuries, and enhance general medical capabilities. Since this research is predominantly biomedical and disease related, it is more appropriate that laboratories be aligned with the Defense Health Program. Funds are transferred from RDT&E,N to RDT&E,DHP.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$1,349	$1,700	$0
RDT&E,N Articles Quantity			

FY 2005 Accomplishments: The funds will support efforts to increase research capabilities at the Diabetes Research Institute (DRI) for the development of organ transport systems, bone marrow, mesenchymal and regulatory cell research.

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

Exhibit R-2a, RDT&E,N Project Justification						Date: January 2006	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost ($ in millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Congressional Adds/ 9999	$0	$20,900	$0	$0	$0	$0	$0
RDT&E,N Articles Quantity							

A. **Mission Description and Budget Item Justification:** Congressional adds.

B. **Accomplishments/Planned Program**

	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	$0	$20,900	$0
RDT&E,N Articles Quantity			

Bioadhesion Research to Combat/ 9735	0	2,800					
Defense Graduate Psychology/ 9736	0	3,400					
Hemoglobin-based Oxygen Carrier research/ 9737	0	4,000					
HUVACTC Proton Beam Therapy/ 9738	0	1,000					
Implantable Middle Ear Hearing/ 9739	0	1,500					
Infusible Hemostatic Therapeutic Trails/ 9740	0	1,500					
Navy Medical Interactive Data Sys/ 9741	0	4,700					
On Demand Custom Body Implants/ 9742	0	1,000					
US NAVY Cancer Vaccine Program/ 9743	0	1,000					

FY 2005 Accomplishments: Not applicable

C. **Other Program Funding Summary: Not applicable**

D. **Acquisition Strategy. Not applicable**

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5

R-1 ITEM NOMENCLATURE
0604777N NAVIGATION/ID SYSTEMS

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**28.410**	**46.926**	**47.070**	**51.284**	**59.119**	**53.097**	**51.009**
0253 Navigation and Electro-Optical Support		**6.494**	**11.768**	**8.052**	**7.634**	**7.825**	**8.030**	**8.207**
0676 Improved ID Development		**1.744**	**2.755**	**3.818**	**3.984**	**3.397**	**3.378**	**3.420**
1253 Combat ID System		**6.328**	**9.268**	**13.742**	**14.048**	**14.684**	**15.265**	**15.011**
0921 NAVSTAR GPS Equipment		**13.844**	**23.135**	**21.458**	**25.618**	**33.213**	**26.424**	**24.371**
Quantity of RDT&E Articles		**1**	**28**	**25**	**7**	**7**	**5**	**3**

(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 (0253) 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 Integrated Submarine Imaging System (ISIS) (0253) is a back fit system to integrate all imaging capabilities on existing submarine classes. The Combat Identification System (CIS) project (1253) for Mark XIIA, and Improved Identification Development (0676) for AN/UPX-29, covers the Navy lead of a MK XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. Per OSD direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. 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 (0921) is a space-based positioning, navigation and timing (PNT) system that provides authorized users with secure, worldwide, all weather, three dimensional position, velocity and precise time data. Navigation Sensor System Interface (NAVSSI) is a system that provides an integrated navigation message structure for network distribution to support combat, command and control, information and other mission critical capabilities. Navy Air and Sea Navigation Warfare (NAVWAR) are major elements of the GPS program. NAVWAR's mission is to provide continued access to GPS information in a denied environment. NAVWAR accomplishes this through the use of enhanced user equipment (UE). GPS Modernization addresses the Navy's future integration of GPS Joint Program Office (JPO) Modernized User Equipment (MUE) products being developed that will enable the use of new signals in space and provide compatibility with Joint Precision Approach & Landing Systems (JPALS). WRN-X is a modernized ship GPS equipment development program required to provide a replacement for the existing WRN-6 receiver and other shipboard receivers. Navigation Sensor System Interface (NAVSSI) is a surface based system that integrates shipboard position, navigation and timing data and distributes the processed output to user systems and networks.

R-1 SHOPPING LIST - Item No. 131

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5**	R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	27.785	52.717	51.072
FY07 President's Budget	28.410	46.926	47.070
Total Adjustments	0.625	-5.791	-4.002
Summary of Adjustments			
FORCEnet NAVWAR Global Positioning System (GPS)			-2.100
Contractor Support Reduction			-0.630
NWCF Civpers Efficiencies			-0.356
Alternate Naval Warfare Offsets			-1.700
Small Business Innovation Research (SBIR)	-0.194		
Nuclear Physical Security	0.005		
Trusted Foundry	0.054		
Inflation Adjustment			0.217
Fuel Price Adjustments			0.360
Civpers Pay Raise Rate Changes			0.043
Sec. 8125: Revised Economic Assumptions		-0.240	
Congressional Reduction: Mode 5 prototype hardware and crypto module delay		-5.000	
Congressional Action 1% Reduction		-0.551	
Department of Energy Transfer	-0.021		
Misc Navy Adjustments	0.781		0.164
Subtotal	0.625	-5.791	-4.002

(U) Schedule:

Proj 0676: Developmental Test (DT-B1) was increased in duration from 1Q FY05 to 1Q-4Q FY05 and Operational Test (OT-B1) was rescheduled from 1Q FY05 to 1Q-2Q FY06 due to late delivery of GFE and changes in Reply Encryption Requirements. Initial Operation Capability (IOC) was moved because the program lost their lead ship platform (CG 71) due to a change in the Cruiser Modernization Program. DDG 103 is now the Mode 5 OPEVAL platform, with an availability in 1Q-2Q of FY08, moving IOC to 1Q FY09. All other events identified on this schedule were changed to accommodate the schedule delays listed above.

Proj 1253: Developmental Test (DT-B1) was conducted 1Q FY05 through 1Q FY06 and Operational Test (OT-B1) is scheduled for 2Q FY06 due to late delivery of GFE and changes in Reply Encryption and Tamper Requirements. DDG 103 is now the Mode 5 OPEVAL platform, with an availability in 1Q-2Q of FY08, with IOC scheduled for 1Q FY09.

Proj 0921: WRN X development efforts begin in FY06.
Sea NAVWAR Phase 2 (Submarines) delayed by one year.

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS				PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0253 Navigation and Electro-Optical Support		**6.494**	**11.768**	**8.052**	**7.634**	**7.825**	**8.030**	**8.207**
RDT&E Articles Qty								

(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.

The Department of the Navy established the Integrated Submarine Imaging System (ISIS) to rapidly field the Type 18 Periscope Patriot Rangefinder, Type 8IR Periscope systems, and integrate existing periscope imagery systems into a single system for installation on board submarines. The ISIS baseline includes the Type 18 Periscope Patriot Rangefinder, Type 8IR Periscope, and supports high intensity operations in the littoral and provides 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 ISIS requirements are: (1) Type 18 Periscope Automated Range Finder development. (2) Submarine Common Imagery System Development. Development of capabilities common to ISIS and Photonics, include: Image stitching, high resolution imaging, automatic visual detection, tracking and classification capabilities.

This program funds the development of Patriot Radar Range Finding for Photonics for SSGN and VIRGINIA Class Submarines. Patriot for Photonics will provide SSGN and VIRGINIA Class submarines with enhanced situations awareness and collision avoidance. Currently Patriot has only been developed for SSN 688 and SSN 21 Class submarines. This effort will provide Patriot Radar Range Finding to SSGN and VIRGINIA Class submarines on the Photonics Mast.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604777N NAVIGATION / ID SYSTEMS	0253 Navigation and Electro-Optical Support

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.130	0.900	0.365
RDT&E Articles Quantity				

Upgrade/Resolve Obsolescent Photonics On-Board Team Trainer development.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.790	4.605	4.459
RDT&E Articles Quantity				

Commence development of capabilities common to ISIS and Photonics, including: Image stitching, super resolution imaging, automatic visual detection, tracking and classification capabilities using the advanced processing build.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.051	3.463	2.028
RDT&E Articles Quantity				

Develop Low Light Level TV, improved image processing, Photonics Imaging System all digital signal path and Photonics Integrated Control and Display.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604777N NAVIGATION / ID SYSTEMS	0253 Navigation and Electro-Optical Support

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.523		
RDT&E Articles Quantity				

Complete Photonics Imaging System EDM Shock Test and convert to the configuration control model.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			2.800	1.200
RDT&E Articles Quantity				

Develop Patriot Radar Range Finding for Photonics for SSGN and VIRGINIA Class Submarines.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
(U) SCN Line 201300 (Photonics Mast only)	19.208	19.558	19.665	20.039	20.440	20.849	21.266	Continuing	Continuing
OPN Line 083100 (PL018, PL022)	50.700	49.469	47.394	44.327	45.104	46.006	16.882	Continuing	Continuing
OPN Line 083105	4.436	3.878	9.632	5.938	6.775	5.574	6.170	Continuing	Continuing
(U) Related RDT&E									
(U) PE 0604558N (The VIRGINIA Class Design Development)	5.050	2.483	.788	.196	.202	.202	.202	Continuing	Continuing

D. ACQUISITION STRATEGY:

The Acquisition Strategy for AN/BVS-1 Photonics Mast Program (PMP) is dtd 24 Sept 2001. The PMP provides for the development and acquisition of a non-hull penetrating submarine electronic imaging system. The Acquisition Strategy for Integrated Submarine Imaging System (ISIS) is dtd 07 Jul 2003. The ISIS will provide mission critical, all weather, visual, and electronic search, digital image management, indication, warning, and platform architecture interface capabilities for SSN 688, SSN 21, and SSGN class submarines.

E. MAJOR PERFORMERS:

	FY 2005	FY 2006	FY 2007
Kollmorgen, Northampton, MA - Photonics Mast Workstation	11/04	11/05	11/06
NUWC, Newport, RI - Photonics	11/04	11/05	11/06
GD-AIS, Fair Lakes, Virginia - Photonics	11/04	11/05	11/06

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION / ID SYSTEMS	0253 Navigation and Electro-Optical Support

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	48.848	1.578	03/05	3.264	10/05	2.470	10/06	Continuing	Continuing	
Software Development	Various	Various	3.399	0.879	03/05	2.343	10/05	1.907	10/06	Continuing	Continuing	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various	10.167	1.791	03/05	2.830	10/05	1.609	10/06	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Miscellaneous	Various	Various	1.373	0.523	10/04	1.190	10/05	0.833	10/06	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			63.787	4.771		9.627		6.819		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. 131

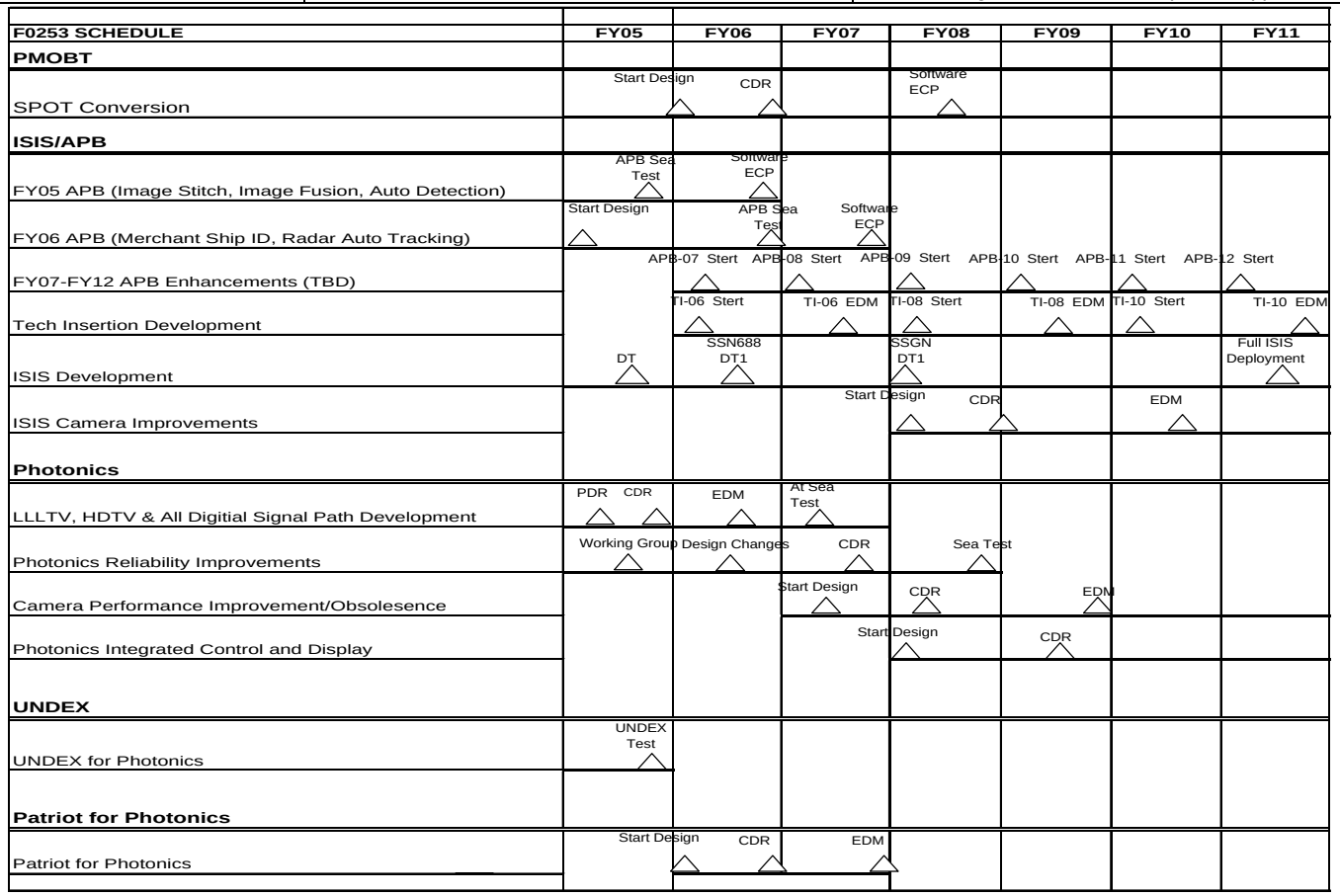
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604777N NAVIGATION / ID SYSTEMS		PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.681	1.131	03/05	1.580	10/05	0.731	10/06		3.442	
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			0.681	1.131		1.580		0.731		0.000	3.442	
Remarks:												
Contractor Engineering Support											0.000	
Program Management Support										Continuing	Continuing	
Management Support Services/ETS	CPFF	AT&T	0.767	0.483	03/05	0.511	10/05	0.457	10/06	Continuing	Continuing	
Travel			0.051	0.109		0.050		0.045			0.204	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.818	0.592		0.561		0.502		Continuing	Continuing	
Remarks:												
Total Cost			65.286	6.494		11.768		8.052		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

EXHIBIT R-4, RDT&E Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-5	0604777N NAVIGATION / ID SYSTEMS	0253 Navigation and Electro-Optical Support



R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 0253 Navigation and Electro-Optical Support			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
PMOBT							
Initiate PMOBT SPOT Conversion		1Q					
PMOBT SPOT Conversion CDR		4Q					
PMOBT SPOT Software ECP				3Q			
ISIS/APB							
Initiate FY06 APB	1Q						
ISIS DT Assist	3Q						
FY05 APB Sea Test	4Q						
Initiate FY07 APB		1Q					
Initiate TI-06 Development		1Q					
ISIS SSN688 DT		3Q					
FY06 APB Sea Test		4Q					
FY05 APB Software ECP		4Q					
Initiate FY08 APB			1Q				
Test TI-06 EDM			3Q				
FY06 APB Software ECP			4Q				
ISIS SSGN DT				1Q			
Initiate ISIS Camera Upgrades				1Q			
Initiate FY09 APB				1Q			
Initiate T-I08 Development				1Q			
ISIS Camera Upgrades CDR					1Q		
Initiate FY10 APB					1Q		
Test TI-08 EDM					3Q		
Initiate FY11 APB						1Q	
Initiate TI-10 Development						1Q	
ISIS Camera Upgrades EDM						3Q	
Initiate FY12 APB							1Q
Full ISIS Deployment							3Q
Test TI-10 EDM							4Q
Photonics							
Photonics LLLTV, HDTV, All Digital Signal Path PDR	2Q						
Photonics Reliability Working Group	3Q						
Photonics LLLTV, HDTV, All Digital Signal Path CDR	4Q						
Photonics Reliability Design Changes		2Q					
Photonics LLLTV, HDTV, All Digital Signal Path EDM		3Q					
Photonics LLLTV, HDTV, All Digital Signal Path Sea Test			2Q				
Initiate Photonics Camera Development			2Q				
Photonics Reliability CDR			3Q				
Initiate Photonics Integrated Control and Display				1Q			
Photonics Camera Development Improvement CDR				2Q			
Photonics Reliability Sea Test				3Q			
Photonics Integrated Control and Display CDR					3Q		
Photonics Camera Development EDM					4Q		
UNDEX for Photonics							
UNDEX Test for Photonics	4Q						
Patriot for Photonics							
Initiate Patriot for Photonics		1Q					
Patriot for Photonics CDR		4Q					
Patriot for Photonics EDM			4Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME 0676 IMPROVED ID DEVELOPMENT			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.744**	**2.755**	**3.818**	**3.984**	**3.397**	**3.378**	**3.420**
RDT&E Articles Qty		**1**						

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 ID Development project unit (0676) 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.

The funds provide for integration of Mode 5 into the AN/UPX-29(V) IFF system which interfaces with the AEGIS (US Navy phased array radar-based combat system) baseline weapon system and for other AN/UPX-29(V) improvements e.g. Antenna Modifications.

The RDT&E article started in FY 2005 is been used to test the integration of Mode 5 into the AN/UPX-24(V) Processor, the major component of the AN/UPX-29 System, and for use in Combat System Certification of Mode 5 in AEGIS.

FY 2008 and out RDT&E funding is for AN/UPX-29(V) improvements to include, Fast Ethernet, open architecture UPX-24 improvements and OE-120 replacement.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA -5	0604777N NAVIGATION/ID SYSTEMS	0676 IMPROVED ID DEVELOPMENT

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Mark XIIA Mode 5 Improvement for AN/UPX-29		1.431	1.207	1.315
RDT&E Articles Quantity				

Engineering and integration development of MARK XIIA Improvements to the AN/UPX-29(V). Correct deficiencies from Developmental Test B1 and Operational Test B1. (DTB1-OTB1). Develop AN/UPX-29 interface capability.

		FY 05	FY 06	FY 07
AN/UPX-29(V) Software Development			1.093	1.700
RDT&E Articles Quantity				

Development of MARK XIIA Improvement to the AN/UPX-29(V) system software for interface with AEGIS weapon system and core Integrated Logistics Support (ILS) documents; formalize hardware/software configuration; update technical data. Develop ILS documentation in support of DT-C1/OT-C1 and software for AN/UPX-29(V) interface. Correct DT-C1/OT-C1 software deficiencies and baseline software and documentation.

		FY 05	FY 06	FY 07
Mark XIIA Mode 5 Development and Operational Test		0.313	0.455	0.803
RDT&E Articles Quantity		1		

Provide support for MARK XIIA Mode 5 DT/OA and provide test asset for MARK XIIA Mode 5 DT/OT B1 and AEGIS Combat system development site. Provide support for MARK XIIA Improvements to the AN/UPX-29(V) DT-B1/OT-B1 . Provide support for AEGIS Combat System operational demonstration. Provide support for AEGIS Combat System certification.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0676 IMPROVED ID DEVELOPMENT	

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P-1 Line Item 63: Identification Systems - OPN	18.169	24.585	28.567	25.876	27.440	32.514	31.818	Continuing	Continuing

D. ACQUISITION STRATEGY:

The acquisition strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME 0676 IMPROVED ID DEVELOPMENT							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD, MD	0.883			0.450	11/05	0.300	11/06	Continuing	Continuing	
Ship Integration	WR	NAWCAD, MD	0.460	0.300	11/04	0.050	11/05	0.250	11/06	Continuing	Continuing	
Systems Engineering	WR	NAWCAD, MD	1.145	0.595	11/04	0.607	11/05	0.665	11/06	Continuing	Continuing	
Training Development	WR	NAWCAD, MD				0.100	11/05	0.100	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			2.488	0.895		1.207		1.315		Continuing	Continuing	
Remarks:												
Software Development	WR	NAWCAD, MD	1.580			0.400	11/05	0.400	11/06	Continuing	Continuing	
Integrated Logistics Support	WR	NAWCAD, MD	0.371	0.386	11/04	0.524	11/05	0.500	11/06	Continuing	Continuing	
Configuration Management	WR	NAWCAD, MD	0.050	0.050	11/04	0.069	11/05	0.300	11/06	Continuing	Continuing	
Technical Data	WR	NAWCAD, MD	0.188	0.100	11/04	0.100	11/05	0.500	11/06	Continuing	Continuing	
Subtotal Support			2.189	0.536		1.093		1.700		Continuing	Continuing	
Remarks:												

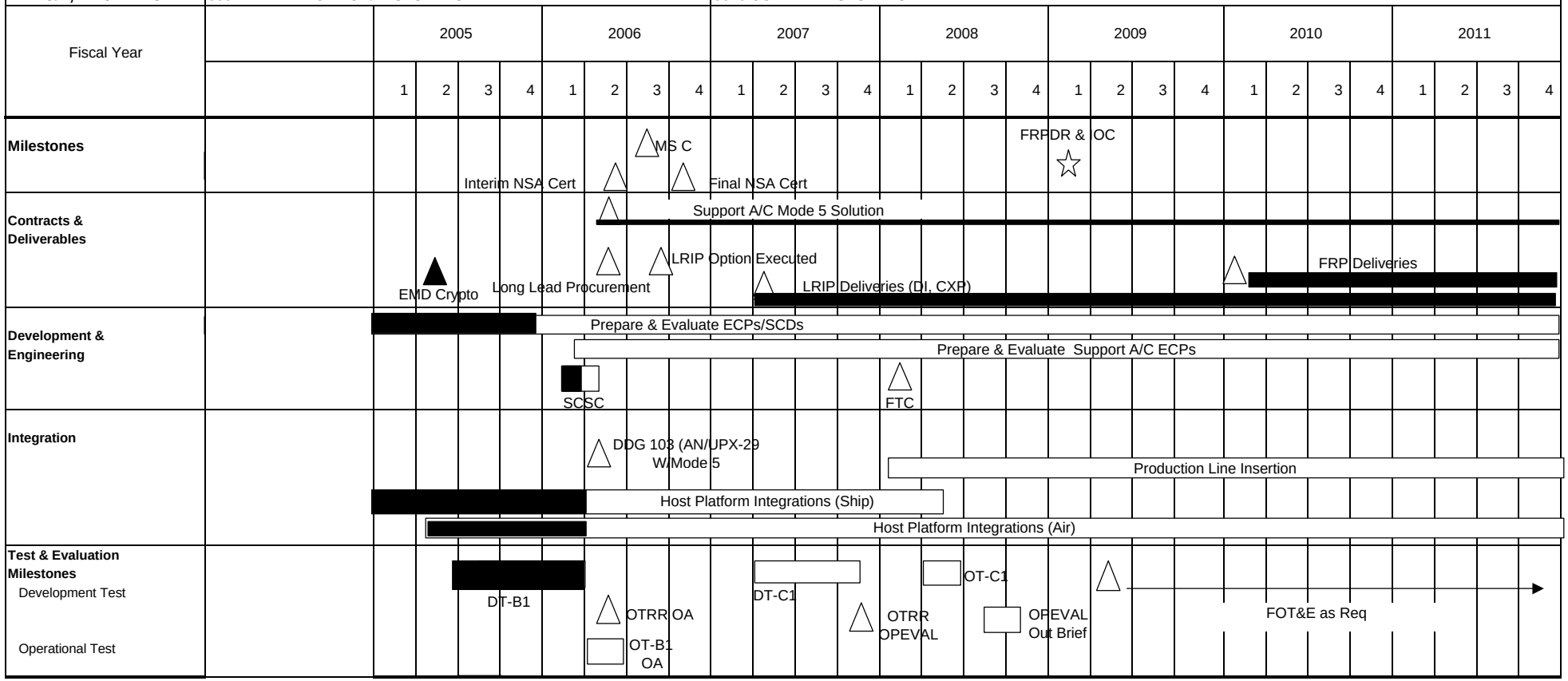
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME 0676 IMPROVED ID DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD, MD	0.050	0.100	11/04	0.100	11/05	0.200	11/06	Continuing	Continuing	
Operational Test & Evaluation	WR	NAWCAD, MD		0.213	11/04	0.355	11/05	0.300	11/06	Continuing	Continuing	
Test Assets	WR	NAWCAD, MD	0.250					0.303	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.300	0.313		0.455		0.803		Continuing	Continuing	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			4.978	1.744		2.755		3.818		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0676 COMBAT ID SYSTEMS



R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME 0676 COMBAT ID SYSTEMS				
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C (MS C)			3Q					
Interim NSA Certification			2Q					
Final NSA Certification			4Q					
Full Rate Production Decision Review (FRPDR)						1Q		
Support A/C Mode 5 H/W solution deliveries			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
EMD Crypto		2Q						
Low-Rate Initial Production Long Lead Procurement			2Q					
Low-Rate Initial Production Contract Award			3Q					
Low-Rate Initial Production Deliveries (CXP, DI)				2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
FRP Deliveries							1Q-4Q	1Q-4Q
Prepare & Evaluate ECPs/SCDs		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Prepare & Evaluate A/C ECPs			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Surface Combat Systems Center (SCSC)			1Q-2Q					
Fleet Training Center					1Q			
Production Line Insertion					1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Host Platform Integrations (Ship)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
Host Platform Integrations (Air)		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Developmental Testing (DT-B1)		2Q-4Q	1Q					
Technical Evaluation (DT-C1)				2Q-4Q				
Operational Evaluation (OT-C1)					2Q			
Operational Test Readiness Review (OTRR) OA			2Q					
Operational Test Readiness Review (OTRR) OPEVAL				4Q				
Operational Testing (OT-B1)			1Q-2Q					
OPEVAL Out Brief					3Q-4Q			
Follow-on Test and Evaluation						2Q-4Q	1Q-4Q	1Q-4Q
AN/UPX-29 Delivery			2Q					

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME 1253 COMBAT ID SYSTEMS			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**6.328**	**9.268**	**13.742**	**14.048**	**14.684**	**15.265**	**15.011**
RDT&E Articles Qty			**28**	**25**	**7**	**7**	**5**	**3**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

In 1995, the Under Secretary of Defense (Acquisition and Technology)/Vice Chairman, Joint Chiefs of Staff {USD(A7T)/VCJCS} tasked the Services to develop a high-level plan and long-range strategy for migrating to new 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 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 Communications 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.

In August 2003 the Navy MK XIIA Mode 5 program was approved for entry in Systems Development and Demonstration (SDD) phase with approval to develop prototypes.

FY 2005 introduced a refinement of replay encryption and program certification requirements in accordance with current policies. These changes resulted in a delay of FY2005 program execution with a continued need for design, engineering, cost, and integrated logistics analysis efforts.

The FY 2006/2007 RDT&E articles are production representative Low Rate Initial Procurement units comprised of Mode 5 cryptographic modules and install kits for AN/APX-118, R/T-1832, AN/UPX-37 and AN/UPX-24 with associated hardware and software changes to host boxes to include but not limited to NAWCAD lab facilities, EA-6B, MH-60, MH-60 R/S, AH-1Z, UH-1Y, and E-2D.

The FY 2008 and out RDT&E articles include Mode 5 cryptographic modules and associated hardware and software changes to AN/APX-119 and XS-950SIs. Remaining RDT&E units are production representative Low Rate Initial Procurement units to support hardware, software, and integration efforts to host systems on remaining Aircraft T/M/S, including but not limited to P-3C, EP 3E, VH-60N, VH-71, and MV-22.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA -5	0604777N NAVIGATION/ID SYSTEMS	1253 COMBAT ID SYSTEMS

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Mode 5 prototype hardware & cryptographic module	2.978	7.591	8.094
RDT&E Articles Quantity		28	25

Perform development of kits for installation into existing fleet assets includes AN/UPX-37 Interrogator, AN/APX-118 Common Digital Transponder, AN/APX-111 Interrogator/Transponder, and RT-1832/APX Transponder. Repair and correct deficiencies identified during testing in support of Milestone C decision and procure 28 Low Rate Initial Procurement (LRIP) units in FY06 to support OPEVAL. LRIP units include Mode 5 cryptographic modules install kits for AN/APX-118, AN/UPX-37, R/T-1832 and AN/UPX-24 with associated hardware and software changes to the host boxes.

	FY 05	FY 06	FY 07
Mode 5 systems engineering	1.510	0.625	1.541

Perform systems engineering and analysis in support of Mode 5 hardware/software development and platform integration efforts on AN/UPX-37 Interrogator, AN/APX-118 Common Digital Transponder, AN/APX-111 Interrogator/Transponder, RT-1832/APX Transponders, Cryptographic Module, Mode 5 Engineering Test Equipment, and Mode 5 support equipment. The Cryptographic Module includes, but is not limited to, activities such as Integrated Logistics Support, Design and Engineering Studies and Analysis, and Configuration Management performed as the Lead Service.

	FY 05	FY 06	FY 07
Conduct DT & OT of the Mode 5 upgrade	1.840	1.052	4.107

Perform Mode 5 developmental and operational test phases for AN/UPX-37 Interrogator, AN/APX-118 Common Transponder, and RT-1832/APX Transponder.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA-5**	0604777N NAVIGATION/ID SYSTEMS	1253 COMBAT ID SYSTEMS

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P1- Line Item 63: Identification Systems - OPN	18.169	24.585	28.567	25.876	27.44	32.514	31.818	Continuing	Continuing
P1- Line Item 53: Identification Systems - APN-5	1.568	7.645	11.148	11.303	6.681	24.047	30.771	Continuing	Continuing

D. ACQUISITION STRATEGY:

The acquisition strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT ID SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VAR	VAR	15.840	3.234	12/04	6.709	10/05	1.752	11/06	Continuing	Continuing	
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	VAR	VAR	3.628	1.500	11/04	0.300	12/05	5.600	11/06	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			19.468	4.734		7.009		7.352		Continuing	Continuing	
Remarks:												
Development Support												
Software Development	VAR	VAR	2.708									
Integrated Logistics Support	VAR	VAR	0.317					0.100	11/06	Continuing	Continuing	
Configuration Management												
Technical Data	VAR	VAR	0.053									
Studies & Analyses												
Reprogramming												
Award Fees												
Subtotal Support			3.078	0.000		0.000		0.100		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT ID SYSTEMS							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	VAR	4.564	0.759	11/04	1.398	11/05	2.800	11/06	Continuing	Continuing	
Operational Test & Evaluation	VAR	VAR		0.835	11/04	0.100	11/05	0.100	11/06	Continuing	Continuing	
Live Fire Test & Evaluation												
Test Assets	VAR	VAR				0.761	03/06	0.420	11/06	Continuing	Continuing	
Tooling												
GFE												
Award Fees												
Subtotal T&E			4.564	1.594		2.259		3.320		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	VAR	VAR	0.450					1.040	11/06	Continuing	Continuing	
Government Engineering Support	VAR	VAR	1.811					1.930	11/06	Continuing	Continuing	
Program Management Support	VAR	VAR	1.961									
Travel	VAR	VAR	0.165									
Transportation												
SBIR Assessment												
Subtotal Management			4.387	0.000		0.000		2.970		Continuing	Continuing	
Remarks:												
Total Cost			31.497	6.328		9.268		13.742		Continuing	Continuing	
Remarks:												

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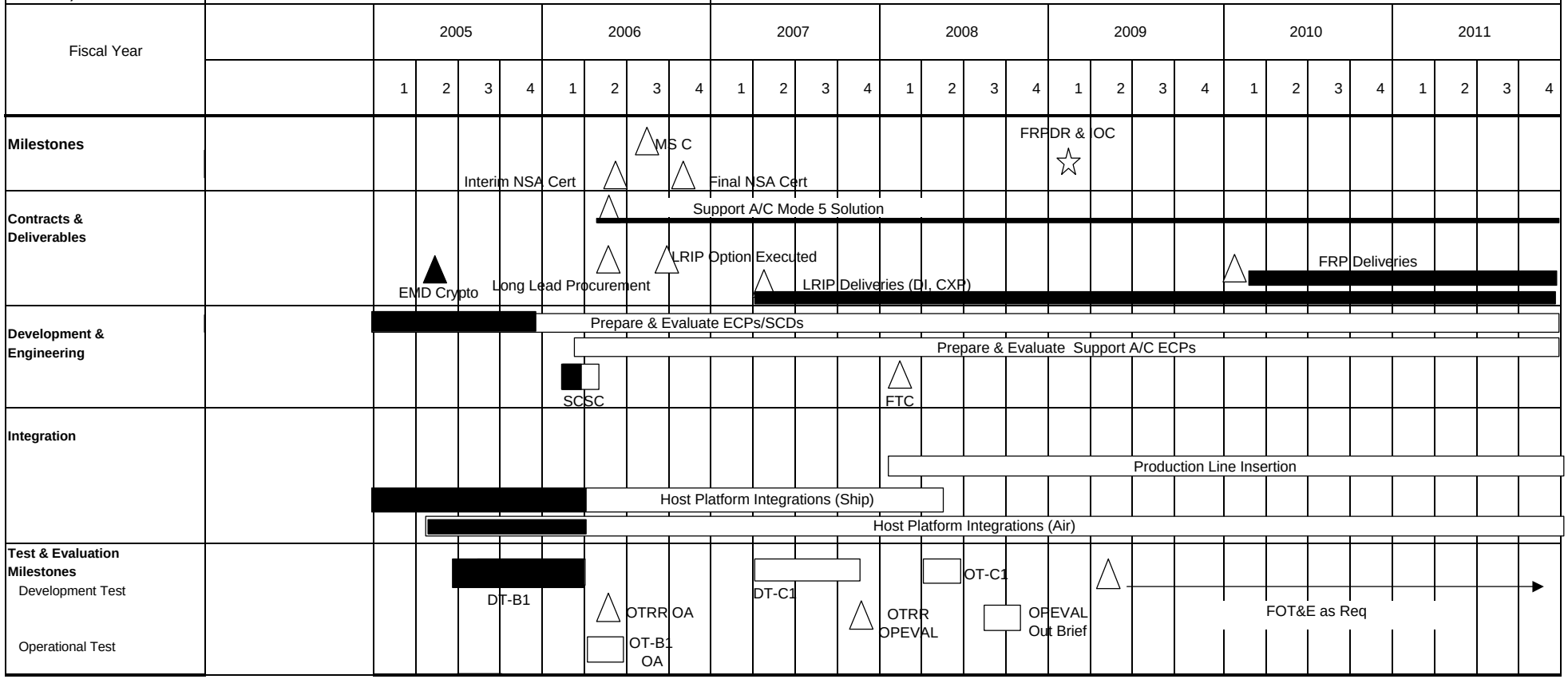
CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	1253 COMBAT ID SYSTEMS



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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT ID SYSTEMS				
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone C (MS C)			3Q					
Interim NSA Certification			2Q					
Final NSA Certification			4Q					
Full Rate Production Decision Review (FRPDR)						1Q		
Support A/C Mode 5 H/W solution deliveries			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
EMD Crypto		2Q						
Low-Rate Initial Production Long Lead Procurement			2Q					
Low-Rate Initial Production Contract Award			3Q					
Low-Rate Initial Production Deliveries (CXP, DI)				2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
FRP Deliveries							1Q-4Q	1Q-4Q
Prepare & Evaluate ECPs/SCDs		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Prepare & Evaluate A/C ECPs			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Surface Combat Systems Center (SCSC)			1Q-2Q					
Fleet Training Center					1Q			
Production Line Insertion					1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Host Platform Integrations (Ship)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
Host Platform Integrations (Air)		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Developmental Testing (DT-B1)		2Q-4Q	1Q					
Technical Evaluation (DT-C1)				2Q-4Q				
Operational Evaluation (OT-C1)					2Q			
Operational Test Readiness Review (OTRR) OA			2Q					
Operational Test Readiness Review (OTRR) OPEVAL				4Q				
Operational Testing (OT-B1)			1Q-2Q					
OPEVAL Out Brief					3Q-4Q			
Follow-on Test and Evaluation						2Q-4Q	1Q-4Q	1Q-4Q

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT	

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**13.844**	**23.135**	**21.458**	**25.618**	**33.213**	**26.424**	**24.371**
RDT&E Articles Qty								

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

The mission is to provide supported, affordable, integrated, and interoperable navigation solutions to the war fighters. 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 "basic GPS" installations by 30 September 2005. The Navigation Warfare (NAVWAR) mission was initiated in FY 99 in response to emerging GPS jamming threats and the requirement to protect the Navy's growing investment in GPS.

The GPS is a space-based positioning, navigation and timing (PNT) system that provides authorized users with secure, worldwide, all-weather, three-dimensional position, velocity and precise time data. PMW/PMA-170 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-170 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; timing and frequency, 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), Common Navigation System/Air Traffic Management (CNS/ATM) and Joint Precision Approach and Landing System (JPALS) requirements when existing systems are unsuitable; the Digital Data Set (DDS); the Control Display Navigation Unit (CDNU) and associated software for many different aircraft and modifications to the GPS Mission Planning Module for the Naval Mission Planning System (NAVMPS)/Joint Mission Planning System (JMPS).

The Surface Ship and Submarine integration efforts include two vitally important navigation integration initiatives: Navigation Sensor System Interface (NAVSSI) and the AN/WRN-6 replacement. The first program is the 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 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. NAVSSI is an evolutionary acquisition development. PMW/PMA 170 will begin developing a replacement for both the AN/WRN-6 shipboard GPS receiver on non-NAVSSI ships and the Global Positioning System Versa Module Europa Receiver Card (GVRC) shipboard GPS receiver on NAVSSI ships beginning in FY06. Both the WRN-6 and the GVRC are no longer in production and require replacement.

For submarine GPS receiver systems, PMW/PMA 170 is supporting ongoing NAVSEA initiatives for the replacement of the AN/WRN-6 systems with the GVRC card technology. The National Defense Authorization Act for Fiscal Year 1999 included GPS language directing DoD to start "The development of an enhanced Global Positioning System [as] an urgent national security priority."

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT

The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel tasked by OPNAV and ASN (RD&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 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&E leading to initial procurements of GPS anti-jam (AJ) antennas beginning in 2001 for aircraft and 2002 for ships. RDT&E continues to support platform integration requirements, Developmental Test/Operational Test (DT/OT), as well as the GPS Joint Program Office's (JPO) development of an Advanced Digital Antenna Production (ADAP) program, the Navy's development of a smaller Anti-Jam (AJ) antenna and a conformal low-observable AJ antenna for aircraft with those requirements, and a new technology AJ solution for submarines (Frequency Excision Filter (FEF) and Low Elevation Antenna Nuller (LEAN)) and the integration of AJ protection into handheld receivers. Two similar but separate ACAT III programs (Air and Sea NAVWAR) have been established and have become the basis for the Navy's Naval Air and Sea Navigation Warfare (NAVWAR) program.

The second phase (referred to as Air and Sea GPS Modernization) of the Navy's overall GPS User Equipment upgrade, will require RDT&E to support the replacement of existing legacy GPS receivers with enhanced capability receivers and antennas based upon and coordinated with the GPS JPO's MUE program. These new receivers and antennas will incorporate GPS Joint Program Office (JPO) and Navy directed and developed technology enhancements to support new signals in space, enhanced receiver security, and aircraft operations within controlled airspace and Joint Precision Approach and Landing System (JPALS) requirements. All of these efforts will be directed, tasked, and funded through PMW/PMA-170, including development of solutions for Handheld receivers and Combat Survivor Evader and Locator (CSEL) user equipment.

The primary Global Positioning System (GPS) shipboard receivers fielded on the majority of U.S. Navy ships today include the AN/WRN-6 and the GPS VME Receiver Card (GVRC). These military GPS receivers provide precise Position, Velocity, and Time (PVT) data required for many combat weapons and navigation systems, as well as providing the time synchronization critical to the network environments. The failure of the GPS receiver ultimately means the loss of GPS for the ship and those systems that depend upon it. However, as GPS devices have proliferated throughout the commercial community, it has become more readily available not only to civilians, but to adversaries as well. As a result, even the military GPS Precise Positioning System (PPS) is more vulnerable today to unintentional and intentional jamming. The new security architecture, known as Selective Availability Anti-Spoof Module (SAASM), addresses this vulnerability, and has been mandated for all military combat GPS users beginning in FY07. Additionally, the GPS satellite constellation is being modernized to incorporate new GPS signals from space for both military and civilian users (e.g., M-code and L5). While SAASM-capable GPS receivers are available commercially today, they require modification to support the various combat system requirements and interfaces required by the Navy shipboard systems, and will require modification in the future to implement the new GPS modernized signals (expected to become available in FY11). The WRN-X system will be engineered for immediate implementation of SAASM, and will be an open architecture allowing for modification to implement modernized GPS signals when they become available; thus making it backwards and forwards compatible with all GPS systems (e.g., Y code, M code, (C/A) code (YMCA)).

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		8.874	13.899	12.511
RDT&E Articles Quantity		0	0	0

(U) FY05 ACCOMPLISHMENTS: ($8.874) Air NAVWAR: Completed DT/OT testing on AV-8B and H-60 series platforms. Began integration and testing on the H-53 and H-1 series platforms. Began technology analysis and down select for the F/A-18 E/F/G. Continued monitoring/testing on conformal/Low Observable (LO) arrays. Continued development and integration testing on the ADAP. Continued participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY06 PLANS: ($13.899) Air NAVWAR: Complete A/V-8B testing. Continue integration and DT/OT testing on H-1 and H-53 platforms. Continue technology down select on the F/A-18 E/F/G. Continue monitoring/testing on conformal/LO arrays. Continue development/integration testing on the ADAP. Begin/continue integration efforts and DT on F/A-18 C/D. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY07 PLANS: ($12.511) Air NAVWAR: Continue integration and testing on the F/A-18 E/F/G. Complete DT/OT on the H-1 platforms. Begin/continue integration efforts and DT on F/A-18 C/D. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Begin integration of ADAP on selected air platforms.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.470	5.786	4.447
RDT&E Articles Quantity		0	0	0

(U) FY05 ACCOMPLISHMENTS: ($3.470) Sea NAVWAR: Completed modeling/simulation, integration, DT efforts on selected Phase 1A & and DT/OT on Phase 1B sea platforms (DDG). Received MDA M/S B approval to continue with submarine AJ development and integration efforts. Continued WDM technology evaluation. Continued development/integration testing on the ADAP. Continued participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Began participation in GPS Modernized User Equipment (MUE) developments. Completed Phase 2 submarine Analysis of Alternatives (AOA); FEF and LEAN were the recommendation that resulted. Began FEF development efforts.

(U) FY06 PLANS: ($5.786) Sea NAVWAR: Continue modeling/simulation, integration, DT efforts on selected Phase 1A and 1B sea platforms. Continue submarine AJ antenna development and integration efforts. Continue participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Continue development/integration testing on the ADAP. Continue Anti-Jam (AJ) development and integration efforts as a result of AoA conclusions. Continue FEF integration efforts. Continue participation in GPS Modernized User Equipment (MUE) development.

(U) FY07 PLANS: ($4.447) Sea NAVWAR: Continue modeling/simulation, integration, DT efforts on selected Phase 1A and 1B platforms. Continue participation in Joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Begin integration of ADAP on selected platforms.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

(U) B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.500	1.480	1.500
RDT&E Articles Quantity		0	0	0

(U) FY05 ACCOMPLISHMENTS: ($1.500) GPS Modernization: Continued to coordinate Navy efforts with the GPS JPO, PEO C4I, SPAWAR, NAVAIR and NAVSEA in preparation for new GPS modernization initiatives (i.e. M-Code, Beam steering antennas, new 24-channel receivers, Selective Availability Anti Spoof Module (SAASM), Y-Code, M-Code, C/A Code (YMCA), etc.) Evaluated platform requirements and continued efforts to support the evaluations of smaller new technology AJ antennas. Participated in the development of OPNAV's GPS roadmap. Coordinated the upgrade of the Navy's Enhanced User Equipment ORD into a Capabilities Development Document (CDD).

(U) FY06 PLANS: ($1.480) GPS Modernization: Continue the above in support of the GPS JPO, PEO C4I, SPAWAR, NAVAIR and NAVSEA. Begin the process of capturing the Navy's Air and Sea platform requirements for the integration of new GPS signals from space.

(U) FY07 PLANS: ($1.500) GPS Modernization: Continue the above in support of the GPS JPO, PEO C4I, SPAWAR, NAVAIR and NAVSEA. Initial Air and Sea platform specification developments for hardware/software upgrades to support the integration of new capabilities and signals from space.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	1.970	3.000
RDT&E Articles Quantity		0	0	0

(U) FY06 PLANS: WRN X ($1.970): Determine the appropriate acquisition strategy for the new WRN-X system or other shipboard receivers. Conduct GPS market investigations and research to scope the level of engineering effort that will be necessary to integrate available GPS engines in the WRN-X system. Working with the GPS Joint Program Office (JPO), and utilizing the newly available GPS initial specifications and Interface Control Documents, define the Navy shipboard GPS functional requirements. Work with other program offices who maintain interfaces with the WRN-6 and GVRC, to determine which legacy interfaces are no longer required, and identify any new or future interfaces that might be required for the WRN-X shipboard GPS receiver. Draft the WRN-X technical specifications or Statement of Objectives (SOO), along with a draft Request for Proposal (RFP).

(U) FY07 PLANS: WRN X ($3.000): Finalize mandatory acquisition documentation. Conduct appropriate milestone decision review. Finalize the WRN-X technical specifications or SOO. Finalize and issue the RFP. Evaluate responses through a source selection team. Award the WRN-X System Development and Demonstration contract. Begin design, functional allocation, and preparation for System Design Review (SDR).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
(U) OPN Line #2657	11.147	14.520	13.291	14.287	13.945	14.203	18.464
(U) APN - Common Avionics	0.000	17.976	21.164	21.655	22.179	23.457	24.849

(U) D. ACQUISITION STRATEGY:

NAVWAR/GPS Modernization: Participate in GPS Joint Program Office and Warner Robbins ALC FY 01-FY 07 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 an Advanced Digital Antenna Program (ADAP) Line Replaceable Unit (LRU) and identify potential Navy candidate platforms. Participate in GPS JPO procurements wherever practicable for GPS Modernization Enhancements. Develop the Navy's specifications necessary to capture and implement future GPS enhancements. See attached Milestone chart.

WRN-X: Investigate Navy contracting options for a WRN-6/GVRC Replacement (WRN-X Modernized Shipboard GPS system). Investigate commercial modernized GPS engines certified through the GPS JPO for application in the WRN-X system. Support the development of the Navy's Modernized GPS User Equipment efforts as they apply specifically to NAVSSI and non-NAVSSI shipboard applications. Work in concert with the WRN-6 sustainment efforts to ensure a coupled solution of obsolescence upgrades (occurring under WRN-6 Sustainment) and modernization tasks (for WRN-X development).

(U) E. Major Performers:

SPAWAR Systems Center, San Diego CA	NAVWAR Engineering and Product Development	Award funding Oct of each year
Naval Air Warfare Center, Pax River, MD	NAVWAR System Engineering and Test	Award funding Oct of each year

(U) F. Metrics:

Quarterly program reviews, monthly financial reviews to evaluate cost, schedule, performance, award fee inputs, Earned Value Management (EVM).

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	Various	Product Vendors	268.878	1.800	Various	3.433	Various	3.133	Various	Continuing	Continuing	
Product Development (SSC-SD)	WX	SSC-SD	65.938	0.371	10/04	0.750	10/05	0.850	10/06	Continuing	Continuing	
Product Dev (other in house)	WX	Various Field Activities	439.397								439.397	
Systems Engineering	Various	Various Govt/Contractor	4.310	1.500	Various	2.400	Various	2.923	Various	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			778.523	3.671		6.583		6.906		Continuing	Continuing	

Remarks:

Development Support	Various	Various	12.710								12.710	
Software Development	Various	SSC-SD/Platform Primes	5.900	0.700	10/04	1.000	10/05	1.000	10/06	Continuing	Continuing	
Integrated Logistics Support	Various	SSC-SD/NAWC/SIR/DCS	1.607	0.850	10/04	0.900	10/05	0.900	10/06	Continuing	Continuing	
Training Development	WX	SSC-SD/NAWC	1.450	0.275	10/04	0.600	10/05	0.600	10/06	Continuing	Continuing	
Technical Data	Various	Platform PMO's	1.000	0.300	10/04	0.600	10/05	0.600	10/06	Continuing	Continuing	
											0.000	
											0.000	
Subtotal Support			22.667	2.125		3.100		3.100		Continuing	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation (NAWC PAX)	WX	NAWC PAX	13.729	1.700	10/04	2.500	10/05	2.500	10/06	Continuing	Continuing	
Test & Evaluation (DCS)	CPAF	DCS CORP PAX	2.111	0.365	10/04	0.450	10/05	0.450	10/06	Continuing	Continuing	
Test & Evaluation (SSC-SD)	WX	SSC-SD	2.545	0.586	10/04	0.900	10/05	0.900	10/06	Continuing	Continuing	
Test & Evaluation Platform Testing	Various	VARIOUS CONTRACTORS	9.196	1.824	Various	3.755	Various	3.040	Various	Continuing	Continuing	
											0.000	
											0.000	
Subtotal T&E			27.581	4.475		7.605		6.890		Continuing	Continuing	

Remarks:

Contractor Engineering Support	Various	DCS, SAIC, ARINC	4.785	1.452	10/04	1.800	10/05	1.800	10/06	Continuing	Continuing	
Government Engineering Support	WX	SSC, NAWC, WR	4.050	0.899	10/04	2.200	10/05	1.200	10/06	Continuing	Continuing	
Program Management Support	CPAF	DCS, Price Systems	11.452	1.222	10/04	1.847	10/05	1.562	10/06	Continuing	Continuing	
											0.000	
Subtotal Management			20.287	3.573		5.847		4.562		Continuing	Continuing	

Remarks:

Total Cost			849.058	13.844		23.135		21.458		Continuing	Continuing	0.000

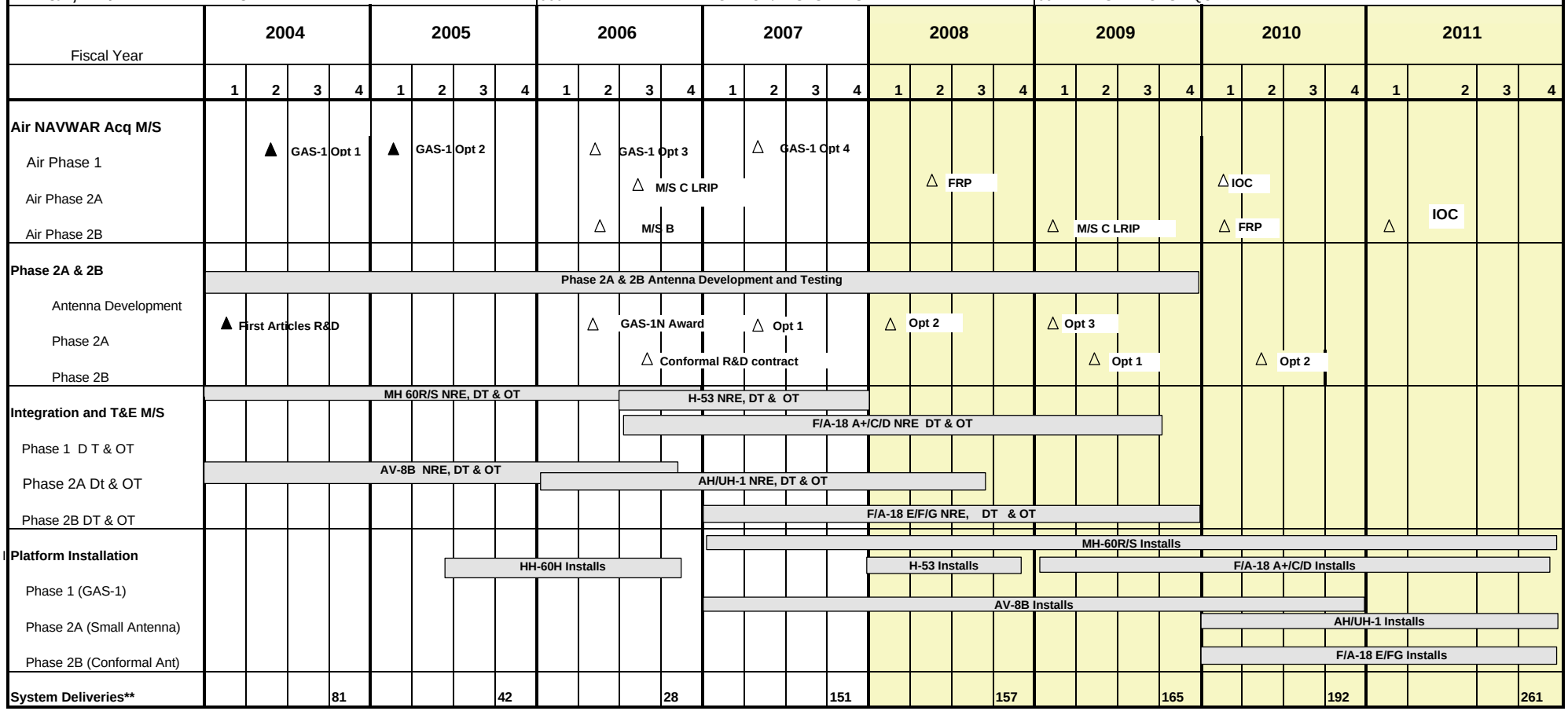
Remarks:

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile — DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT



R-1 SHOPPING LIST - Item No. 131

Begin GPS Modernization design and development to support JPALS and incorporate new capabilities from space

** Quantities are approximate year-end total number of NAVWAR system deliveries including those projected for new construction aircraft. Quantities do not include RDT&E units or Spares.

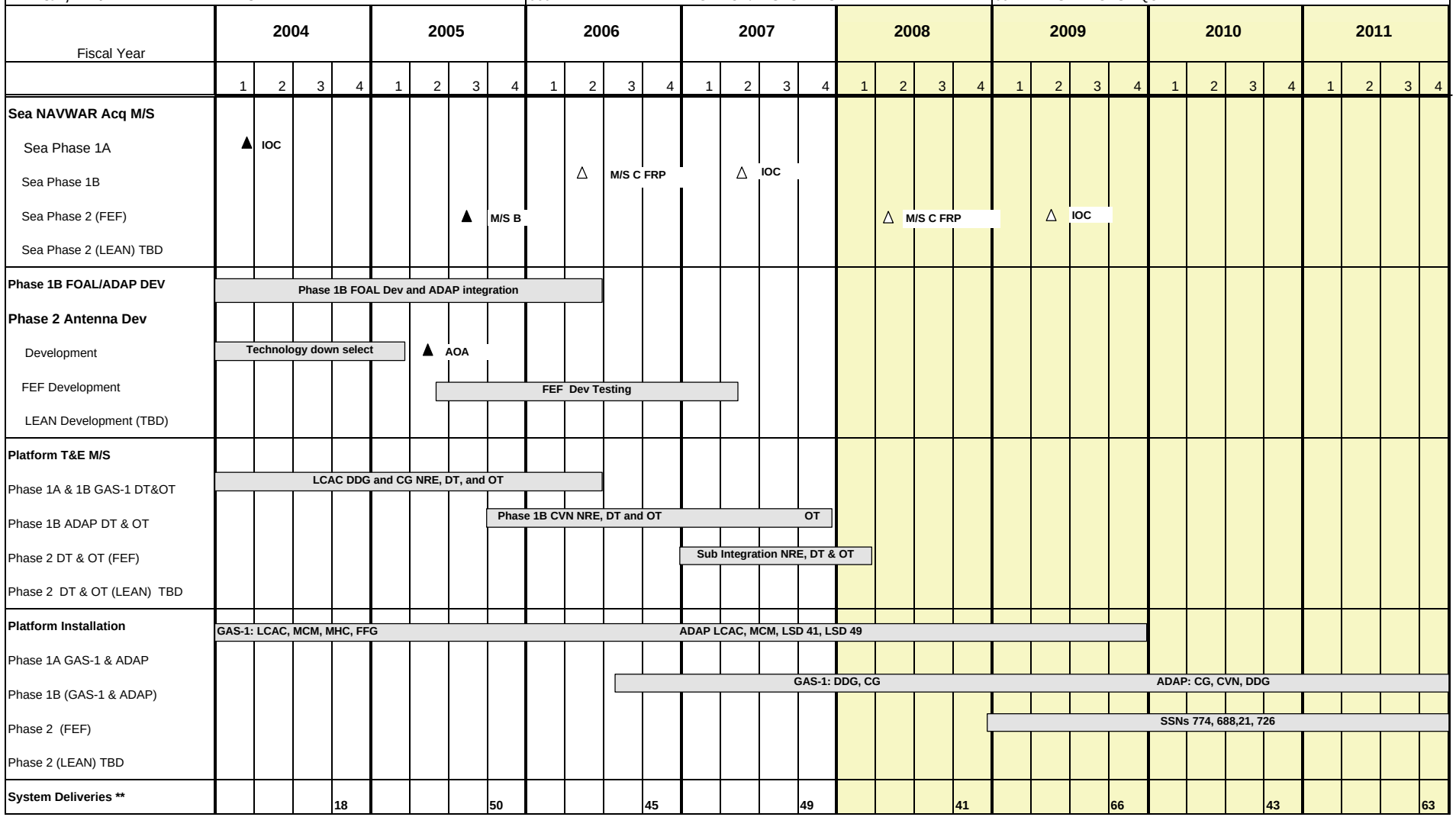
CLASSIFICATION:

EXHIBIT R-4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604777N NAVIGATION/ID SYSTEMS

PROJECT NUMBER AND NAME: 0921 NAVSTAR GPS EQUIPMENT



R-1 SHOPPING LIST - Item No. 131

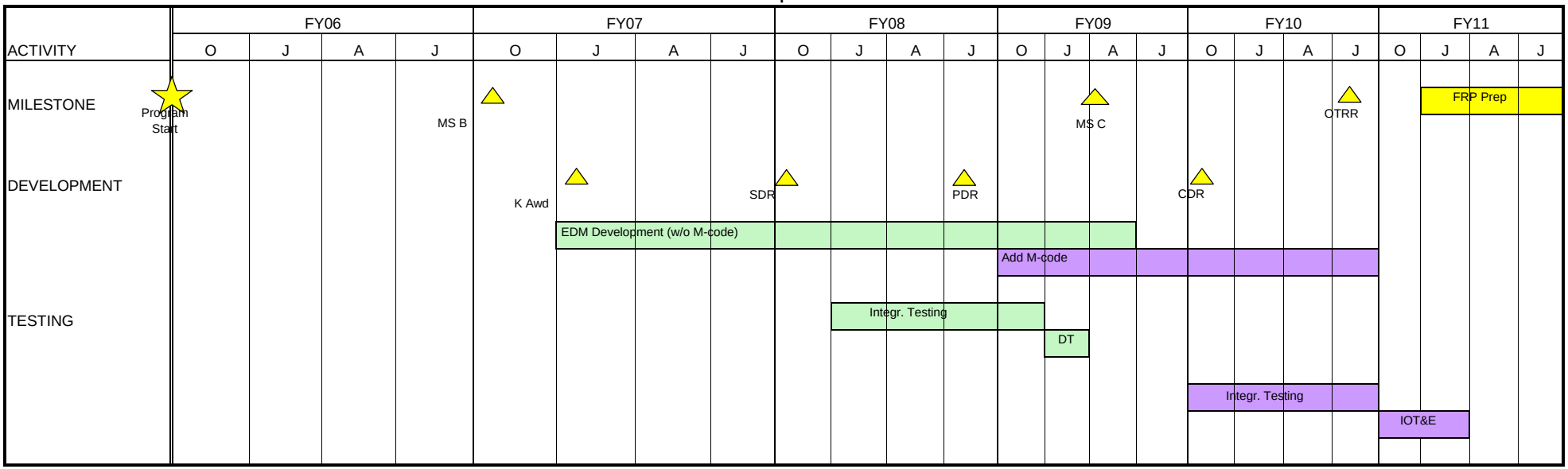
Begin GPS Modernization design and development to support JPALS and incorporate new capabilities from space

** Quantities are approximate year-end total number of NAVWAR system deliveries including those projected for new construction ships. Quantities do not include RDT&E units or Spares.

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604777N NAVIGATION/ID SYSTEMS	0921 NAVSTAR GPS EQUIPMENT

WRN-X Development Schedule



R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME 0921 NAVSTAR GPS EQUIPMENT			
NAVWAR Air Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
H-60 completes DT	3Q							
AV-8B DT/OT	1-4Q	1-4Q	1-4Q					
Phase 2A 1st platform production integration				1Q				
Phase 2A LRIP			3Q					
Phase 2A FRP					2Q			
Phase 2A IOC							1Q	
Phase 2B Milestone B			2Q					
F/A-18 E/F DT/OT				1-4Q	1-4Q	1-4Q		
Phase 2B Milestone C LRIP						1Q		
Phase 2B 1st platform production integration							1Q	
Phase 2B FRP							1Q	
Phase 2B IOC								1Q
NAVWAR Sea Profile								
Phase 1A IOC	1Q							
Phase 1B DT/OT		3Q (DDG)	2Q (CG)	2Q (CVN)				
Phase 1B M/S C FRP			2Q					
Phase 1B IOC				2Q				
Phase 2 M/S B (FEF)		3Q						
Phase 2 DT/OT				1Q-4Q	1Q			
Phase 2 FRP					2Q			
Phase 2 IOC						2Q		
Phase 2 M/S B (LEAN) TBD								
Phase 2 DT/OT TBD								
Phase 2 FRP TBD								
Phase 2 IOC TBD								
WRN X								
Milestone B				1Q				
Milestone C						3Q		

R-1 SHOPPING LIST - Item No. 131

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604784N/ Distributed Surveillance System					
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	Cost to Complete	Total Program
Total PE Cost		**17.462**	**55.842**	**58.273**	**34.234**	**35.312**	**40.534**	**21.519**	**Continuing**	**Continuing**
1300 Advanced Deployable System (ADS)		**17.462**	**53.442**	**58.273**	**34.234**	**35.312**	**40.534**	**21.519**	**Continuing**	**Continuing**
9999 Undistributed RDT&EN Congressional Adds		**0.000**	**2.400**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
RDT&E Articles Qty (SS)			**4**	**12**	**4**					**20**
RDT&E Articles Qty (ISS)				**1**						**1**
RDT&E Articles Qty (TIS)			**0**	**3**	**2**					**5**
RDT&E Articles Qty (ARS)			**1**	**1**						**2**

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

The Advanced Deployable System (ADS) is a rapidly deployable, passive acoustic undersea surveillance system that, as the first Increment of development, will be deployed as a module of the Anti-Submarine Warfare (ASW) mission package for the Littoral Combat Ship (LCS). This first effort of the Spiral development program is designated Increment Alpha. It will be deployed and monitored by the LCS in shallow littoral waters to provide the Joint Task Force Commander (JTFC) with data that permits rapid integration with other sources to generate an accurate and reliable maritime tactical picture. ADS is designed to detect, track and report modern diesel electric and nuclear submarines, as well as provide the capability to track surface ships and potentially detect mine-laying activities. The second development effort, designated Increment Bravo, will provide the capability to deploy ADS from an alternate platform. Increment B Development and testing will occur in FY09-FY11. For all increments, ADS consists of four subsystems:

- The SS consisting of four acoustic arrays, small diameter fiber optic (SDFO) cable which connects the arrays, and a pressure vessel (PV). The PV contains a battery power supply, electronics, and lasers. The lasers serve to optically telemeter the hydrophone data to the in-water Tactical Information System (TIS) via SDFO cable.
- The TIS consisting of a self-powered buoy, housing computers (to partially process and compress the SS data stream), a radio and an antenna to transmit to the data to a supporting LCS. The TIS and SS together compose a string.
- An Analysis and Reporting Subsystem (ARS) aboard the LCS, where the received information data stream is analyzed and target information is reported to the LCS command and control center for further distribution over tactical C4I nets as appropriate. Also part of the ARS is the Integrated Undersea Surveillance System (IUSS) Mission Planning tool which provides operators aboard the LCS and support personnel ashore the means to rapidly build an ADS installation plan. This effort builds on work begun in the ADS program (PE 0604784N) to automate array lay down and cable routing plans. Functional requirements for Fixed Surveillance Systems (FSS), ADS and Surveillance Towed Array Sensor (SURTASS) will be combined and prioritized with fleet input in the Mission Planner development. The software will be developed as a Global Command and Control System - Maritime (GCCS-M) segment that is at least level 6 DII-COE compliant.
- An Installation Support Subsystem (ISS) for rapid deployment of the SS and TIS by the LCS.

FY 06 Congressional Adds: Project 9999 - Funds two congressional adds: Centurion and SureTrak

(U) JUSTIFICATION FOR BUDGET ACTIVITY:
TECHNOLOGY DEVELOPMENT (TD) AND SYSTEM DEVELOPMENT DEMONSTRATION (SDD)
This program is funded under technology development because it encompasses development of new end-items. Milestone B approved November 2005.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA -5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

(U) B. Accomplishments/Planned Program

ANALYSIS AND REPORTING SYSTEM (ARS)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		6.117	9.878	10.674
RDT&E Articles Quantity			1	1

FY05 ($6.117) Developed a reduced power processing capability to run in-buoy processing software. Delivered the in-buoy processor and Workstation displays for ADS's Capability Demonstration. Conducted the ARS Preliminary Design Review (PDR) and initiated detailed design. Supported System Engineering and Integrated Test and Evaluation (IT&E). The Mission Planning Plus Up was used to build array laydown planner and command & control mobilization processor for use on LCS. Developed laydown plans in support of user requirements and environmental input requirements definition.

FY06 ($9.878) Develop the detailed design for the LCS shipboard C4I, data processing, display, in buoy processor, and installation planning necessary for the ARS of the ADS Mission Module. Conduct development of the segments of the ARS of the ADS Mission Module. Procure hardware for first ARS test article to support the consolidated LCS Mission Package Computer Environment Integration Lab. Prepare for the System Critical Design Review (CDR).

FY07 ($10.674) Conduct System Critical Design Review (CDR) and Design Verification Tests (DVT's) for the segments of the ARS of the ADS Mission Module. Integrate all ARS segments for subsystem testing and then participate in the ADS System Integration test. Procure hardware for second ARS test article

INSTALLATION SUPPORT SUBSYSTEM (ISS)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		2.621	14.883	15.695
RDT&E Articles Quantity				1

FY05 ($2.621) Completed risk reduction testing of the ISS. Conducted the ISS PDR and initiate detailed design. Network Centric Plus Up was used to build and demonstrate sensor deployment alternative methods. Conducted technology maturation testing of the array Dispenser Transport Vehicle (DTV) and Array Installation Module (AIM).

FY06 ($14.883) Complete detailed design and conduct the segment Detailed Design Review. Conduct necessary risk reduction testing. Prepare for the System CDR. Initiate segment fabrication and conduct segment integration testing.

FY07 ($15.695) Conduct System CDR. Continue segment fabrication and integration testing. Procure hardware for ISS test article.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

(U) B. Accomplishments/Planned Program

TEST AND EVALUATION (T&E)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		0.303	0.800	1.168
RDT&E Articles Quantity				

FY05 ($0.303) Conducted TASWEX-04 Exercise demonstrating array performance against a modern diesel electric submarine. Coordinated with COMOPTEVFOR in the conduct of a Development Test Assisted with an early operational assessment.

FY06 ($0.789) Conduct a series of Design Verification Tests/Developmental Tests (DVT/DT) during SDD Phase to facilitate and validate system design, minimize risk, and verify the accomplishment of remaining technical performance requirements.

FY07 ($1.168) Coordinate test planning for FY08 System Integration Test. Following a favorable Design Readiness Review, DT will focus on the demonstration of system integration with final SIT aboard a surrogate LCS to validate system end-to-end performance.

TACTICAL INTERFACE SYSTEM (TIS)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		2.074	20.018	21.274
RDT&E Articles Quantity			0	3

FY05 ($2.074) Modified the communication link's radio to lower system power requirements. Continued interface development and testing between radio, processor, power supply and buoy. Recommended potential technologies into the at-sea test program. Supported System Engineering. Started spectrum certification process. Conducted technology maturation testing of the wireless link.

FY06 ($20.029) Design, breadboard, prototype and Design Verification Test (DVT) of the entire subsystem (RF radio, buoy, power, mooring, and anchor.) Develop encryption/decryption solution to satisfy security requirement. Continue spectrum certification process. Begin fabrication of first test article for developmental test program. Prepare for System CDR.

FY07 ($21.274) Conduct System CDR. Fabrication of test articles to support SIT, TECHEVAL, and OPEVAL. Finalize spectrum certification approval. Support Test and Evaluation IPT.

CENTURION		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		3.824	0.000	0.000
RDT&E Articles Quantity				

FY05 ($3.824) Congressional Plus Up used to build and integrate new sensors into Homeland Defense port surveillance test bed in Port Hueneme area developed in FY 04 and conducted additional tests.

R-1 SHOPPING LIST - Item No. 132

EXHIBIT R-2, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

(U) B. Accomplishments/Planned Program

SENSOR SUBSYSTEM (SS)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		1.077	6.231	7.249
RDT&E Articles Quantity			4	12

FY05 ($1.077) Maintained support during the ADS at-sea testing and refurbished test articles for additional testing. Planned for the resolution of any discrepancies identified during testing. Finalized inputs to the technical data package. Supported Milestone B and prepared for production of hardware in the SDD phase.

FY06 ($6.231) Trade studies to reduce system life cycle cost based on new requirement and LCS centric concept: low-cost cable, lighter and less expensive pressure vessels, cheaper array unit cost are a few high-impact candidates. Begin manufacturing test articles to support SIT, TECHEVAL, OPEVAL. Prepare for System CDR.

FY07 ($7.249) Conduct System CDR. Continue manufacturing test articles to support SIT, TECHEVAL, OPEVAL. Support T&E Integrated Product Team (IPT).

SYSTEM ENGINEERING PROGRAM MANAGEMENT (SEPM)		FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		1.446	1.632	2.213
RDT&E Articles Quantity				

FY05 ($1.446) Continued Project Management support for the ADS project office. Monitored government and contractor technical, schedule, and cost performance. Conducted at sea capability demonstration. Continued development of documentation required for Milestone B decision. Developed contractual and technical elements in support of system development and integration contract award. Completed the System Functional Architecture, Item Performance specifications, and Equipment and Software Subsystem-level Design. Conducted cost trade off studies, analyzed and tracked technical performance measures, perform configuration and interface management, held technical reviews and audits, conducted risk management. Continued to coordinate with LCS Mission Module and Ship program offices to define the Interface Requirements Document.

FY06 ($1.632) Continue Project Management support for the ADS project office. Monitor government and contractor technical, schedule, and cost performance. Prepare for the System CDR and begin engineering development models and the associated component testing. Continue to conduct cost trade off studies, analyze and track technical performance measures, perform configuration and interface management, hold technical reviews and audits, conduct risk management. Continue to coordinate with LCS Mission Module and Ship program offices to refine the Interface Control Document. Hold Milestone B decision review with the Milestone Decision Authority (MDA) and gain approval to award SDD contract.

FY07 ($2.213) Continue Project Management support for the ADS project office. Monitor government and contractor technical, schedule, and cost performance. Witness subsystem integration testing and conduct system integration testing with the engineering development models . Continue to conduct cost trade off studies, analyze and track technical performance measures, perform configuration and interface management, hold technical reviews and audits, conduct risk management. Conduct System CDR. Initiate preparations for Milestone C decision review in FY08. Continue to coordinate with LCS Mission Module and Ship program offices to maintain the Interface Control Document.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

(U) C. PROGRAM CHANGE SUMMARY:

FY06 President's Budget Submit	17.416	54.256	57.974
FY07 President's Budget	17.462	53.442	58.273
Total Adjustments	0.046	-0.814	0.299
Summary of Adjustments			
Other General Provisions		-0.247	
Programmatic changes	0.046		0.299
Recissions		-0.567	
	0.046	-0.814	0.299

(U) Schedule:

Milestone B approved 2 Nov 05. Schedule for CDR adjusted to 4Q FY06 as a risk reduction effort, and all subsequent test events (SIT, TECHEVAL and OPEVAL) have been adjusted.to reflect Milestone B Acquisition Program Baseline.

(U) Technical:

- N/A

R-1 SHOPPING LIST - Item No. 132

EXHIBIT R-2, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME 1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)	

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
LCS OPN BLI 1600	-	-	48.100	77.200	75.000	40.700	Continuing	Continuing
ADS OPN BLI 2221	-	-	-	-		16.279	Continuing	Continuing
LCS RDT&E PE0603581N (Mission Modules)	6.770	4.950	3.770	-	-	-	-	15.490

- ADS procurement scheduled to be funded by LCS OPN Program. Procurement quantities as follows: FY08 - 1 ADS System; FY09 - 2 ADS Systems; FY10 - 2 ADS Systems; FY11 - 1 ADS System
- As part of the LCS ASW Mission Module (MM), ADS is receiving RDT&E funds from LCS MM Program. Funds provided to augment ADS Systems Engineering efforts in connection with ADS integration and installation with the LCS.
- ADS OPN for FY11 provides for the second increment of ADS development effort (clandestine deployment).

(U) E. ACQUISITION STRATEGY(AS):

Acquisition Strategy (Approved by ASN/RDA Apr04) addresses redirected program under review by Navy Leadership. Strategy takes ADS to sole source contracting strategy, and the contract was awarded SEP 04.

	FY05	FY06	FY07
PROGRAM MILESTONES		MILESTONE B	
ENGINEERING MILESTONES	PRELIMINARY DESIGN REVIEW (PDR), INTEGRATED BASELINE REVIEW (IBR)		CRITICAL DESIGN REVIEW (CDR)
T&E MILESTONES	TASWEX 04; ARRAY DEPLOYMENT FROM AN ARRAY MODULE	DEVELOPMENTAL TEST EVENTS	DEVELOPMENTAL TEST EVENTS
CONTRACT MILESTONES		SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD) OPTION FUNDED	CONTINUE SDD

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)													DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**			PROGRAM ELEMENT 0604784N/ Distributed Surveillance System			PROJECT NUMBER AND NAME 1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	52.824										52.824	52.824
Prime Mission Product Development	CPAF/IF	LMFS MANASSAS, VA	8.000			3.891	04/05	41.708	11/05	46.799	11/06	Continuing	Continuing	Continuing
Government Engineering Support	WX	Various	53.013			2.243	11/04	6.330	11/05	2.337	11/06	Continuing	Continuing	Continuing
Engineering Support Services	SS/CPFF	UNIVERSITY LABS	15.409			1.544	02/05	2.085	12/05	2.650	11/06	Continuing	Continuing	Continuing
Software Development	C/CPFF	ORINCON SAN DIEGO, CA	20.537			2.835	05/05						23.372	23.372
Prime Mission Product Development	BAA	HARRIS/ LM PNW	2.360										2.360	2.360
Other Contracts			17.712			4.633	02/05	0.151	12/05				22.496	22.496
Other Activities			19.037			0.170	11/04						19.207	19.207
Subtotal Product Development			278.226			15.316		50.274		51.786		Continuing	Continuing	Continuing
Remarks:														
Contract Engineering Support	C/CPFF	AMRON SAN DIEGO ,CA	8.040										8.040	8.040
Government Engineering Support	WX	Various	9.758			0.956	11/04	0.930	11/05	0.980	11/06	Continuing	Continuing	Continuing
Engineering Support Services	SS/CPFF	UNIVERSITY LABS	0.390			0.000	11/04	0.300	12/05			Continuing	Continuing	Continuing
PMTO Contracts			31.363			0.000	11/04						31.363	31.363
Other Activities			6.100			0.289	11/04	0.057	11/05	0.250	11/06		6.696	6.696
Subtotal Support			55.651			1.245		1.287		1.230		Continuing	Continuing	Continuing
Remarks:														

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)												DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT 0604784N/ Distributed Surveillance System				PROJECT NUMBER AND NAME 1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		OTHER CONTRACTS	7.625										7.625	7.625
Dev. and Operational Test and Eval.	WX	VARIOUS	18.196			0.115	11/04	0.670	11/05	2.000	11/06	Continuing	Continuing	Continuing
Dev. and Operational Test and Eval.		OTHER ACTIVITIES	4.778			0.008	11/04	0.130	11/05	0.170	11/06	Continuing	Continuing	Continuing
Dev. and Operational Test and Eval.	SS/CPFF	UNIVERSITY LABS	1.208			0.180	05/05	0.000	11/05	1.000	11/06	Continuing	Continuing	Continuing
Subtotal T&E			31.807			0.303		0.800		3.170		Continuing	Continuing	Continuing
Remarks:														
Program Management Support	WX	VARIOUS	1.657			0.598	11/04	1.081	11/05	2.087	11/06	Continuing	Continuing	Continuing
Subtotal Management			1.657			0.598		1.081		2.087		Continuing	Continuing	Continuing
Remarks:														
Total Cost			367.341	0.000		17.462		53.442		58.273		Continuing	Continuing	Continuing
Remarks:														

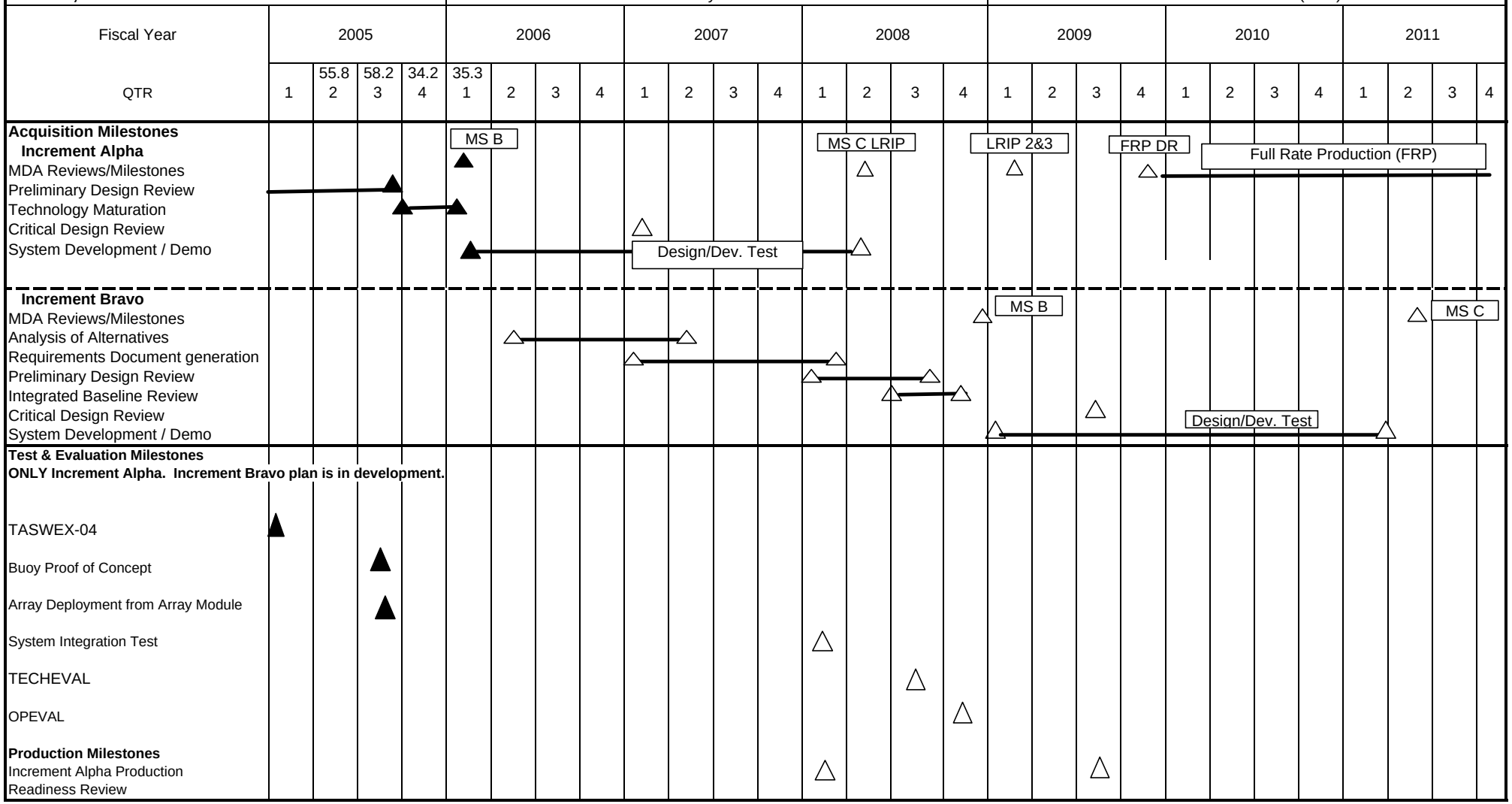
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0604784N/ Distributed Surveillance System

PROJECT NUMBER AND NAME: 1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)



R-1 SHOPPING LIST - Item No. 132

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/ BA-5**	PROGRAM ELEMENT 0604784N/ Distributed Surveillance System		PROJECT NUMBER AND NAME 1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)				
Schedule Profile (Increment Alpha; Increment Bravo plan in development)	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011
SENSOR SUBSYSTEM							
EMD system Preliminary Design Review	4Q						
EMD system Critical Design Review			1Q				
EMD system SIT system manufacture				1Q			
EMD system Operational Testing				4Q			
INSTALLATION SUBSYSTEM							
EMD system Preliminary Design Review	4Q						
EMD system Critical Design Review			1Q				
EMD system SIT system manufacture			4Q				
EMD system Operational Testing				4Q			
TACTICAL INTERFACE							
EMD system Preliminary Design Review	4Q						
EMD system Critical Design Review			1Q				
EMD system SIT system manufacture			4Q				
EMD system Operational Testing				4Q			
ANALYSIS & REPORTING SUBSYSTEM							
EMD system Preliminary Design Review	4Q						
EMD system Critical Design Review			1Q				
EMD system manufacture to support LCS Integration Lab		4Q					
EMD system SIT system manufacture			4Q				
EMD system Operational Testing				4Q			
SYSTEM TESTS							
TASWEX-04	Q1						
System Integration Test				1Q			
TECHEVAL				3Q			
OPEVAL				4Q			
CONTRACT							
LRIP Systems				2Q	1Q		
FRP						1Q	

R-1 SHOPPING LIST - Item No. 132

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA -5	0604784N/ Distributed Surveillance System	9999 Congressional Plus-Ups - Various

(U) B. Accomplishments/Planned Program

Congressional Plus Up

	FY06			
1300C				
Centurion	1.000			

Funding to complete development and testing of Homeland Defense port surveillance test bed.

	FY06			
9857N				
SureTrak	1.400			

Funds for research efforts in support of the SureTrak program.

R-1 SHOPPING LIST - Item No. 132

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**2,083.779**	**2,269.197**	**2,030.979**	**1,710.781**	**1,323.284**	**1,021.458**	**645.357**
2261 JSF		**2,083.779**	**2,265.097**	**2,030.979**	**1,710.781**	**1,323.284**	**1,021.458**	**645.357**
9999 Congressional Adds			**4.100**					

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, USMC, and allies, with maximum commonality among the variants, consistent with National Disclosure Policy, 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 7 other International countries are participants in the JSF Program.

Congressional Adds currently being included in the program planning and development.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM				PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**2,083.779**	**2,265.097**	**2,030.979**	**1,710.781**	**1,323.284**	**1,021.458**	**645.357**
RDT&E Articles Qty			**1**	**4**	**10**	**7**		

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

Quantity of 15 RDT&E articles reflect flight test articles; 7 ground test articles are also budgeted in SDD which includes total program quantities for Navy and AF.

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, USMC, and allies, with maximum commonality among the variants, consistent with National Disclosure Policy, 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 7 other International countries are participants in the JSF Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) SDD

B. Accomplishments/Planned Program (Breakout reflects USN, USAF, UK and other International funding)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3,506.788	3,774.561	3,587.400
RDT&E Articles Qty			1	4

FY05, FY06 and FY07 continue System Development and Demonstration SDD execution of the Air System, with Lockheed Martin including International Commonality Effort (ICE) which includes airframe, vehicle systems, mission systems, autonomic logistics, systems engineering and integrated test efforts.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		956.382	846.726	583.900
RDT&E Articles Qty				

FY05, FY06 and FY07 continue SDD execution of the F135 Propulsion System, with Pratt & Whitney using (ICE) which includes engine testing, autonomic logistics, integration and performing technology maturation efforts.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		212.232	332.606	0.000
RDT&E Articles Qty				

FY05 and FY06, continue the Fighter Engineering Team (General Electric/Rolls Royce) F136 development for a second, interchangeable, JSF engine for competition in production (previously begun in associated program elements 0603800N and 0603800F). Efforts include technology maturation, engine testing, autonomic logistics and integration.

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) SDD	

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	101.771	112.425
RDT&E Articles Qty				

FY 06 and FY07, continue SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		55.517	114.625	162.599
RDT&E Articles Qty				

Government Development Test and Evaluation (DT&E) commenced in FY05 in support of first flight of test aircraft. Elements of DT&E include preparation for flight testing, weapons integration testing, and Program Introduction Documents (PIDs).

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		160.214	197.949	241.294
RDT&E Articles Qty				

FY05, FY 06, and FY07 continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		30.816	31.998	45.109
RDT&E Articles Qty				

FY05, FY 06, and FY07 continue SDD technical support and program office functions, including travel.

GRAND TOTAL		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4,921.949	5,400.236	4,732.727
RDT&E Articles Qty			1	4

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) SDD

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2,145.239	2,393.013	2,287.055
Current President's Budget	2,083.779	2,265.097	2,030.979
Total Adjustments:	-61.460	-127.916	-256.076
Summary of Adjustments			
Congressional Reductions		-92.000	
Congressional Rescissions			
Congressional Undistributed Reductions	-54.402	-25.020	
Congressional Increases	0.430		
Economic Assumptions		-10.896	14.360
Miscellaneous Adjustments	-7.488		-30.036
Other Adjustments			-240.400
Subtotal	-61.460	-127.916	-256.076

Schedule: This submission reflects JSF Program Replan and is subject to refinement pending completion of the updated Block Plan and Test Plan.

Technical: Additional design work and scope is required to achieve weight reductions in the STOVL variant, necessitating increase in cost and schedule.

Other Adjustments include FY07 reprogramming of JSF Alternate Engine and VXX requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) SDD

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.

RDT&E:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0604800F	2,080.058	2,333.009	1,999.068	1,708.903	1,393.280	1,103.051	733.432	1,656.000	18,474.003
International Partner Funding	758.112	798.030	702.680	479.340	226.185	166.230	136.230	6.510	4,526.030

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; and International Partner contributions of $253.921 for a total of $4,229.896. Total cost includes prior years funding FY02 through FY04

RELATED PROCUREMENT:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0214146N			245.016	1,758.779	4,497.768	4,364.434	3,599.242
(Quantity)			(0)	(8)	(32)	(36)	(33)
0207142F		118.405	1,113.098	1,406.295	2,156.737	2,568.499	3,631.273
(Quantity)		(0)	(5)	(8)	(15)	(20)	(31)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) SDD

RELATED SPARES AND REPAIR PARTS:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
USN				117.653	185.612	245.603	251.628	TBD	TBD

RELATED MILCON:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0207142F	9.715	0.000	0.000	85.402	79.998	TBD	TBD	TBD	TBD
91211F	0.900								
24146N									

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) SDD

E. ACQUISITION STRATEGY:

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:

(1) facilitated the Services' development of fully validated, affordable operational requirements;

(2) lowered risk by investing in and demonstrating key leveraging technologies that lowered the cost of development, production and ownership; and

(3) demonstrated operational concepts.

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.

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.

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.

Following evaluation of proposals and a favorable Milestone B decision, the JSF Program entered SDD on 26 October 2001 with SDD contract awards to Lockheed Martin and Pratt & Whitney. The SDD plan reflects a block approach, based on open systems architecture, for accomplishing aircraft and weapons integration. General Electric continues propulsion development efforts.

The JSF Acquisition Strategy and updated program schedule were approved following the May 05 DAB.

DoN procurement is planned to begin in FY 2008 with advance procurement in FY 2007. USAF procurement is planned to begin in FY 2007 with advance procurement in FY 2006.

CLASSIFICATION:

Exhibit R-3 Cost Analysis					DATE: **February 2006**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER SDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hdw Develop - Air System	C/CPAF	Lockheed Martin, Ft. Worth TX	**6,691.000**	3,506.788	10/04	3,774.561	10/05	3,587.400	10/06	TBD	TBD	25,713.403
Award Fees (Non-Add -Budgeted)			(504.501)	(277.400)		(277.996)		(285.000)		TBD	TBD	
Award Fees (% Funded to Date)			49%									
Primary Hdw Develop - Air System	SS/BOA	Lockheed Martin	3.200									
Primary Hdw Develop - Air System	SS/IDIQ	Lockheed Martin	3.000									
Primary Hdw Develop - F135 Engine	SS/CPAF	Pratt & Whitney, Hartford CT	**2,422.000**	942.759	10/04	846.726	10/05	583.900	10/06	TBD	TBD	5,928.628
Award Fees (Non-Add -Budgeted)			(232.000)	(82.252)		(82.803)		(88.000)		TBD	TBD	
Award Fees (% Funded to Date)			70%									
Prim Hdw Dev - F135 Engine	SS/BOA	Pratt & Whitney	37.000	5.071	10/04	0.000	10/05			TBD	TBD	42.071
Prim Hdw Dev - F135 Engine	SS/IDIQ	Pratt & Whitney		8.553								
Subtotal SDD			**9,156.200**	**4,463.171**		**4,621.287**		**4,171.299**		TBD	TBD	
Primary Hdw Dev - F136 Eng Phase IIIb	SS/CPAF	General Electric, Cincinnati OH	444.000	108.348	10/04					TBD	TBD	468.444
Award Fees (Non-Add - Budgeted)			(35.542)	(1.396)						TBD	TBD	
Award Fees (% Funded to Date)			62%									
Primary Hdw Dev - F136 Eng	SS/BOA	General Electric	1.961	0.000	10/04	0.000	10/05	0.000	10/06	TBD	TBD	1.961
Primary Hdw Dev - F136 Eng	SS/IDIQ	General Electric	3.000	1.884	10/04					TBD	TBD	4.884
Primary Hdw Dev - F136 Eng SDD	SS/CPAF	GE/RR Fighter Engineering Team		102.000	10/04	332.606	10/05	0.000	10/06	TBD	TBD	2,466.259
Award Fees (Non-Add)												
Systems Engineering	WX	Various	0.000	0.000		101.771	11/05	112.425	11/06		214.197	
Subtotal Product Development			9,605.161	4,675.403		5,055.665		4,283.725				

FY05 and prior years funding for Systems Engineering included in Development Support Total. (R-3 2261, pg 2).

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

Exhibit R-3 Cost Analysis

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER SDD

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	WX	NAWC Lakehurst	2.783	0.818	10/04	0.990	10/05	1.203	10/06	TBD	5.794	
Development Support	WX/MIPR	NAWC Patuxent River	135.283	70.636	10/04	57.790	10/05	91.283	10/06	TBD	354.992	
Development Support	WX/MIPR	NAWC China Lake	38.542	49.407	10/04	43.996	10/05	42.603	10/06	TBD	174.548	
Development Support	MIPR	Air Systems Comm WPAFB	20.173	10.362	10/04	22.472	10/05	26.766	10/06	TBD	79.773	
Development Support	MIPR	Edwards AFB - AFFTC	37.908	2.505	10/04	3.073	10/05	4.321	10/06	TBD	47.807	
Development Support	MIPR	Electronic Systems Command	7.225	2.225	10/04	17.678	10/05	17.600	10/06	TBD	44.728	
Development Support	WX/MIPR	Various Field Sites	158.597	7.358	10/04	13.534	10/05	12.443	10/06	TBD	191.932	
Development Support	C/CPAF	Sverdrup/Anteon, Arlington VA	13.349	7.192	12/04	21.681	12/05	22.489	12/06	TBD	64.711	105.014
Development Support	SS/CPFF	Wyle Labs (AI-ES), Arlington, VA	19.120	9.711	12/04	16.735	12/05	22.587	12/06	TBD	68.153	108.234
Subtotal Support			432.980	160.214		197.949		241.294		TBD	1,032.437	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM	2261/JOINT STRIKE FIGHTER SDD

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Govt T&E											0.000	
DT	WX	NAWC Patuxent River	0.000	37.574	10/04	24.445	11/05	37.925	11/06		99.944	
DT	MIPR	Edwards AFB - AFFTC	0.000	11.934	10/04	39.768	11/05	70.329	11/06		122.031	
DT	WX	Various	0.000	0.234	10/04	6.082	11/05	9.300	11/06		15.616	
DT	WX	NAWC China Lake	0.000	4.364	10/04	5.380	11/05	2.180	11/06		11.924	
DT	MIPR	Eglin AFB	0.000	0.000	10/04	33.803	11/05	35.600	11/06		69.403	
OT	WX/MIPR	COMOPTEVFOR-Norfolk	0.000	1.412	10/04	5.146	11/05	7.265	11/06		13.823	
Subtotal T&E			0.000	55.517		114.625		162.599		0.000	332.741	

Remarks:

Program Mgmt Support	SS/CPFF	Stanley, Arlington VA	25.000	14.367	10/04	14.968	10/05	21.128	10/06		75.463	144.965
Program Mgmt Support	SS/CPFF	Aegis, Arlington VA	7.172	3.896	12/04	3.928	12/05	6.600	12/06		21.596	36.453
Travel	WX/MIPR	Various	0.000	12.553	10/04	13.102	10/05	17.382	10/06		43.036	
Subtotal Management			32.172	30.816		31.998		45.109			140.094	

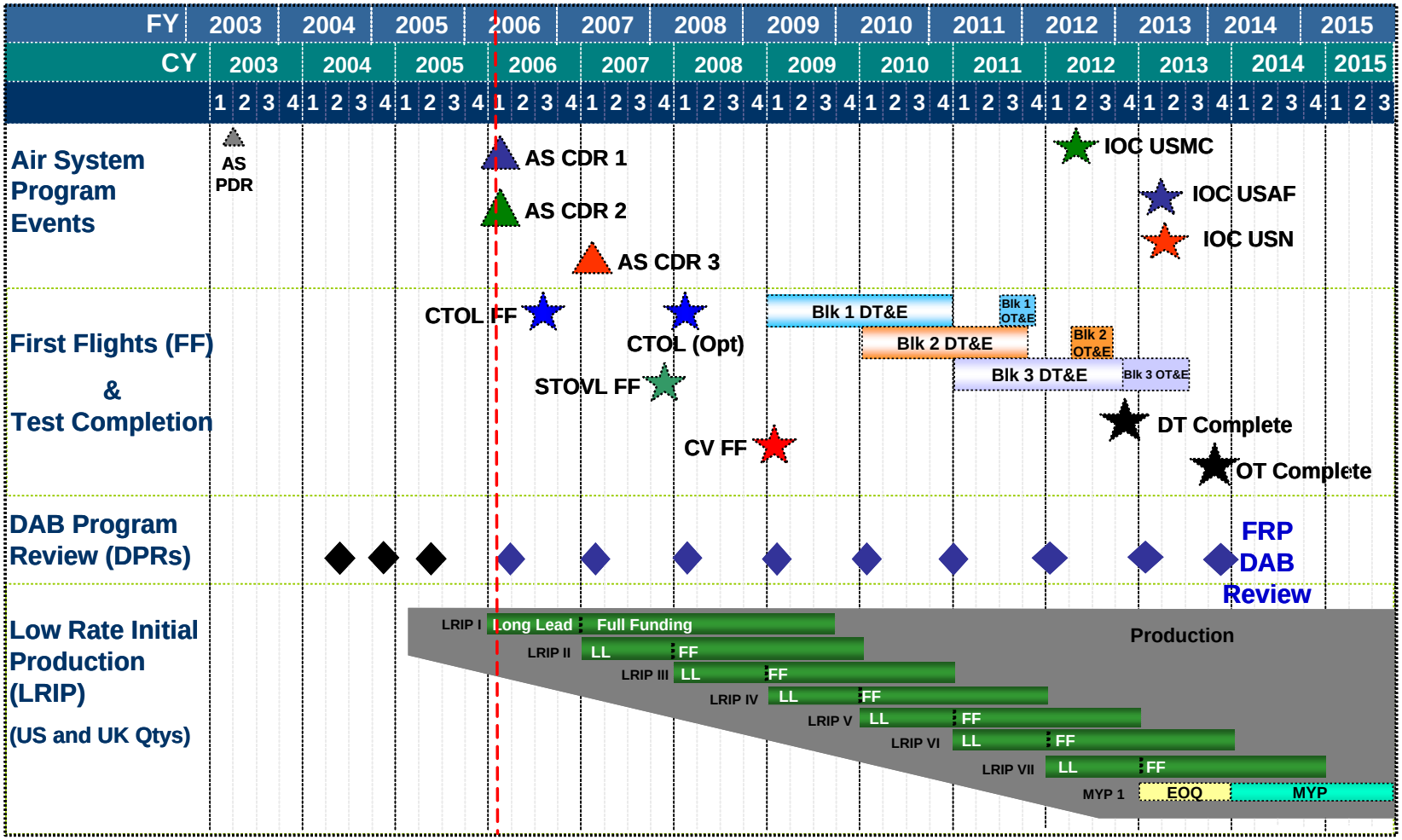
Remarks:

Total Cost			10,070.313	4,921.949		5,400.236		4,732.727			25,125.225	

Remarks: Prior Years reflect $4,466,436 USN / $4,353.918 USAF / $1,249,959 International / Total **$**10,070,313
FY 2005 reflects $2,083,779 USN / **$**2,080,058 USAF / $758.112 International / Total $4,921.949
FY 2006 reflects $2,269,197 USN / $2,333,009USAF / $798,030 International / Total $5,400,236
FY 2007 reflects $2,030,979 USN / $1,999,068 USAF / $702,680 International / Total $4,732,727

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM	2261 / JOINT STRIKE FIGHTER SDD

JSF Top Level Schedule SDD Program



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROJECT NUMBER AND NAME 2261 / JOINT STRIKE FIGHTER SDD			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DAB Program Review (DPR)	1Q, 3Q	2Q	2Q	2Q	2Q	2Q	2Q
Critical Design Reviews (CDRs)		CDR 1&2, 2Q	CDR 3, 2Q				
CTOL First Flight		4Q					
STOVL First Flight				1Q			
CV First Flight					2Q		
Block 1, DT&E					2Q-4Q	1Q-4Q	1Q
Block 1, OT&E							4Q
Block 2, DT&E						2Q-4Q	1Q-4Q
Block 3, DT& E							2Q-4Q
LRIP I (CTOL)		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
LRIP II (CTOL, STOVL)			2Q-4Q	1Q-4Q	1Q-4Q	1Q	
LRIP III (CTOL, STOVL, CV, UK)				2Q-4Q	1Q-4Q	1Q-4Q	1Q
LRIP IV (CTOL, STOVL, CV, UK)					2Q-4Q	1Q-4Q	1Q-4Q
LRIP V (CTOL, STOVL, CV, UK)						2Q-4Q	1Q-4Q
LRIP VI (CTOL, DON, UK)							2Q-4Q

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM				PROJECT NUMBER AND NAME 9999 Congressional Adds			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**0.000**	**4.100**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9999 Congressional Adds			**4.100**					
RDT&E Articles Qty			**0**	**0**	**0**	**0**		

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	9999 Congressional Adds

B. Accomplishments/Planned Program (Breakout reflects USN, USAF, UK and other International funding)

2261		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	1.350	0.000
RDT&E Articles Qty				

Innovative Technologies for JSF Core Processor - Details being formulated

2261		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	1.750	0.000
RDT&E Articles Qty				

Thrust Growth Studies - Details being formulated

2261		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	1.000	0.000
RDT&E Articles Qty				

Engine Weight Reduction - Details being formulated

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	9999 Congressional Add	

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.000	0.000	0.000
Current BES/President's Budget	0.000	4.100	0.000
Total Adjustments:	0.000	4.100	0.000
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		4.100	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	0.000	4.100	0.000

Schedule: This submission reflects JSF Program Replan and is subject to refinement pending completion of the updated Block Plan and Test Plan.

Technical: Additional design work and scope is required to achieve weight reductions in the STOVL variant, necessitating increase in cost and schedule.

R-1 SHOPPING LIST - Item No. 133

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NA\ Engineering & Manufacturing**				R-1 ITEM NOMENCLATURE 0604910N Navy IT DEV / MOD				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE0604910N Cost		**0.660**	**0.705**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
2902 Smart Card Program		0.660	0.705	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles **Not Applicable**								

(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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**				PROJECT NUMBER AND NAME 2902 Smart Card Program				
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**0.660**	**0.705**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty **Not Applicable**								

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT Dev\Mod	PROJECT NUMBER AND NAME 2902 Smart Card Program	

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.660		
RDT&E Articles Quantity				

For FY05, pilot candidate submission and evaluation is not completed, but CAC pilot funding could be used in 3 principal areas: 1) To support the Contractor Verification System (CVS)--Phase 2, which automates the DD Form 1172 process to better control and validate the issuance of CACs to contractor personnel. 2) To support DON efforts to implement the CAC and Biometrics Roadmap document (DMDC, April 2004). 3) Take next steps beyond our previous CAC access control pilots to prototype solutions to piggybacking and personnel accountability issues, in support of the contactless module expected to be added to the next-generation CAC.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			0.705	
RDT&E Articles Quantity				

FY 06 funding will be used to initiate 2-3 pilot projects to add functionality and utitlity to the CAC to enhance cost effectiveness and improve operational readiness and quality of life.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604910N Navy IT Dev\Mod	2902 Smart Card Program

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Last President's Budget:	0.677	0.715	0.725
Adjustments since the last President's Budget:	-0.017	-0.010	-0.725
Current Baseline	0.660	0.705	0.000
Summary of Adjustments			
SBIR Tax Assessment	-0.017		
Sec. 8125: Revised Economic Assumptions		-0.003	
Congressional Reduction		-0.007	
Program Adjustements			-0.725
Subtotal	-0.017	-0.010	-0.725

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT Dev\Mod	PROJECT NUMBER AND NAME 2902 Smart Card Program	

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable										

E. ACQUISITION STRATEGY:

The milestone for all years is the completion of proof of concept ininiatives for the benefit of the Department of Navy. In each of the fiscal years approximately 2-3 projects will be executed.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5 Engineering and Manufacturing Development**	PROGRAM ELEMENT (PE) NAME AND NO. **0605013M Marine Corps Information Technology**

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**8.558**	**25.363**	**13.326**	**18.122**	**17.379**	**11.316**	**8.469**
C2906 Marine Corps Information Technology Dev/Mod	**8.558**	**18.863**	**13.326**	**18.122**	**17.379**	**11.316**	**8.469**
C9999 FY06 Congressional Adds	**0.0**	**6.500**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Quantity of RDT&E Articles							

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

This program establish, sustain and continuously refine computing platforms and Information Technology (IT) services as tested, certified and reusable components of a Marine Corps information technology framework that spans the range of military operations from tactical warfighting to complex business systems.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5 Engineering and Manufacturing Development**	PROGRAM ELEMENT (PE) NAME AND NO. **0605013M Marine Corps Information Technology**

B. PROGRAM CHANGE SUMMARY

	FY2005	FY2006	FY2007
(U) FY 2006 President's Budget:	**9.197**	**19.150**	**13.954**
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases		6.500	
(U) POM 06 Core Adjustment			
(U) Reprogrammings	-0.556		
(U) SBIR/STTR Transfer	-0.098		
(U) Minor Affordability Adjustment	0.015	-0.287	-0.628
(U) FY 2007 President's Budget:	**8.558**	**25.363**	**13.326**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006			
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**				
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**8.558**	**18.863**	**13.326**	**18.122**	**17.379**	**11.316**	**8.469**
RDT&E Articles Qty							

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

Total Force Administration System (TFAS) (formerly HRDP) 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 (MCTFS) and other databases such as the Personnel Evaluation System (PES) and the Manpower Order Writing System.

Marine Corps Enterprise Information Technology Services (MCEITS) will provide an overarching portfolio of capabilities to deliver "Power to the Edge" for the Marine Corps. Born from an effort to establish a Continuity of Operations Plan (COOP) of HQMC Automated Information Systems (AIS), MCEITS will realign the existing USMC environment of applications, databases, networks, and facilities into an integrated architecture and programs to deliver new information technology capabilities based on a common infrastructure and shared services. MCEITS is a unifying framework of both the Net-Centric Enterprise Services (NCES) to be delivered, and the infrastructure and systems which must be deployed to enable delivery of those services. Initially it will encompass the Operational, Technical and Systems architectures of the garrison enviornment. However, ultimately it will extend to transform Command and Control (C2) both in garrison and in the deployed environment.

Combined with policy, procedure and standards provided by HQ-USMC C4, it will allow us to finally achieve architectural standardization, consolidated management, and seamless interoperability of, and access to, the data residing in our currently fielded applications (business and tactical), and significantly reduce complexity of esuring data interoperability of future capabilities. MCEITS will provide the Marine Corps with the Information Technology tools that will allow for decision superiority now and in the future.

Defense Messaging System (DMS) is an OSD-mandated program that replaced the Automatic Digital Network (AUTODIN) in 30 September 2003. DMS expands writer-to-reader connectivity, support, and message security services. Organizations are 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. Future changes to DMS will provide message drafters and releasers a web interface and centralize the DMS functions including FORTEZZA security services.

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 Guidebook for Recruiters, Volume I, 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.

Models (formerly HRDP) 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, and re-engineering processes where technology can be leveraged for improvements. The funding in Models will provide the technical solution for process improvement, and will strategically align manpower systems/functional process modules with the C4 architecture.

Integrated Digital Environment (IDE) The Marine Corps Systems Command (MARCORSYSCOM) IDE initiative is aimed at creating a seamless, collaborative, digital-based business environment for the acquisition , life cycle/product support community and key enabling processes. The desired end state for the IDE initiative is a continuously evolving digital work environment that takes advantage of existing applications, technologies and infrastructure. This effort focuses on providing the acquisition project office a capability set based upon an acquisition item-centric (project/product) data model that connects all pertinent data about the project, throughout its life cycle until it is demilitarized or disposed of.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
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) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**0.265**	**0.218**	**0.582**
RDT&E Articles Qty			

DMS: OTE and DTE testing of DMS new releases, maintenance releases, TDMS, Proxy solution (Automated Message Handling System (AMHS), Decision Agency (DA) and others), integration testing of DMS inclusion into the NetCentric Enterprise System (NCES).

COST ($ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**0.000**	**0.000**	**2.300**
RDT&E Articles Qty			

MODELS: Re-engineering of long-term planning tools which are integral to the decision support processes of the TFAS. 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 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**2.587**	**6.172**	**1.014**
RDT&E Articles Qty			

HRDP Portfolio/TFAS: 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 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**2.152**	**8.500**	**7.000**
RDT&E Articles Qty			

HRDP Portfolio/TFAS: Provide support for the development and integration of modules into TFAS.

COST ($ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**2.554**	**1.973**	**0.000**
RDT&E Articles Qty			

MC RECRUITING INFO SUPT SYS (MCRISS): Design and development of web enabling technologies for MCRISS- Non-Commissioned Officer in Charge (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 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**0.000**	**2.000**	**2.430**
RDT&E Articles Qty			

MCEITS: Funds will be used for spiral development of the Engineering Design Models (EDM) to include systems engineering, horizontal scaling across the MC "map" of systems, databases and networks, and vertical scaling of Net-Centric Enterprise Services (NCES).

COST ($ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	**1.000**	**0.000**	**0.000**
RDT&E Articles Qty			

IDE: The objective of the Integrated Digital Environment for Acquisition and Product Life Cycle Management is to design, test and manufacture, via a spiral development model, an integrated suite of capabilities that all MARCORSYSCOM personnel to quickly access/share information, collaborate and perform business-related functions (i.e. Acquisition and Total Life Cycle Systems Management) from the workstations, either on-site, while on official travel, or when working from home.

(U) Total $	**8.558**	**18.863**	**13.326**

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
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

	FY2005	FY2006	FY2007
(U) FY 2006 PRESIDENT'S BUDGET	**9.197**	**19.150**	**13.954**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.556		
(U) SBIR/STTR Transfer	-0.098		
(U) Minor Affordability Adjustment	0.015	-0.287	-0.628
(U) FY 2007 PRESIDENT'S BUDGET	**8.558**	**18.863**	**13.326**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
(U) PMC BLI#464100 TFAS	0.847	0.000	0.000						
(U) PMC BLI#463500 DMS	7.955	2.825	3.652						
(U) PMC BLI # 461700 MODELS	0.000	0.205	0.221						
(U) PMC BLI#461700 TFAS	0.000	0.680	0.847						
(U) PMC BLI#463000 MCEITS	0.000	0.955	1.034						

ACQUISITION STRATEGY:

TFAS - 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 provided to Marines at the appropriate level of authority to view, change and input selected information.

DMS: DMS is a Joint ACAT1AM program. It is ASD (C3I) - mandated. Each year Joint Inter-Operability Testing Center (JTIC) runs on 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.

MCRISS: 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.

MCEITS: Complete system design and evaluation; achieve Milestone C; complete installation of initial GIG ES application suites and conduct testing; achieve approval for full fielding (FY06); procure equipment for full network (FY06); complete upgrades of prototype installations to approved final design (FY07-08); establish all network nodes (FY07-08). Begin technology refreshment cycle (FY09-11). It is important to recognize that as this is a multi-layered approach, RDT&E will be required in FY06 to develop that application solutions for the GIG-ES. PMC execution is in support of the infrastructure layer, (COOP/DR/Network).

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
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) E. MAJOR PERFORMERS:

TFAS

FY05 - DFAS Kansas City, MO, Verification and validation testing of software; Oct 2004.
FY06 - DFAS Kansas City, MO, Verification and validation testing of software; Dec 2005.
FY07 - DFAS Kansas City, MO, Verification and validation testing of software; Dec 2006.

DMS

FY05 - MCOTEA. Quantico, VA, Operational Test and Evaluation and Developmental Test and Evaluation testing, 3.1, Proxy Solution testing, Jan 2006.
Fort Huachuca, Az , TDMS, DMS Joint Interoperability Certifications (JIC) exercise, Dec 04.

FY06 - MCOTEA. Quantico, VA, Operational Test and Evaluation and Developmental Test and Evaluation testing, 3.2, Proxy AMHS, DA testing, 01/06.
Fort Huachuca, Az , TDMS, DMS Joint Interoperability Certifications (JIC) exercise, 01/06 .

FY07 - MCOTEA. Quantico, VA, Operational Test and Evaluation and Developmental Test and Evaluation testing, NCES/DMS, Proxy testing, 12/06.
Fort Huachuca, Az , TDMS, DMS, Proxy solution Joint Interoperability Certifications (JIC) exercise, 01/07.

MCRISS

FY05 - Federal Systems Integration and Management Center (FEDSIM), Falls Church, VA, Design and development of web enabling technologies for MCRISS-NCOIC, Jan 2006.
FY06 - Federal Systems Integration and Management Center (FEDSIM), Falls Church, VA, Design and development of web enabling technologies for MCRISS-NCOIC, Jan 2007.

MODELS

FY07 - DFAS Kansas City, MO, Technical integration; Jan 2007.

MCEITS

FY06 - SAIC , Mclean VA

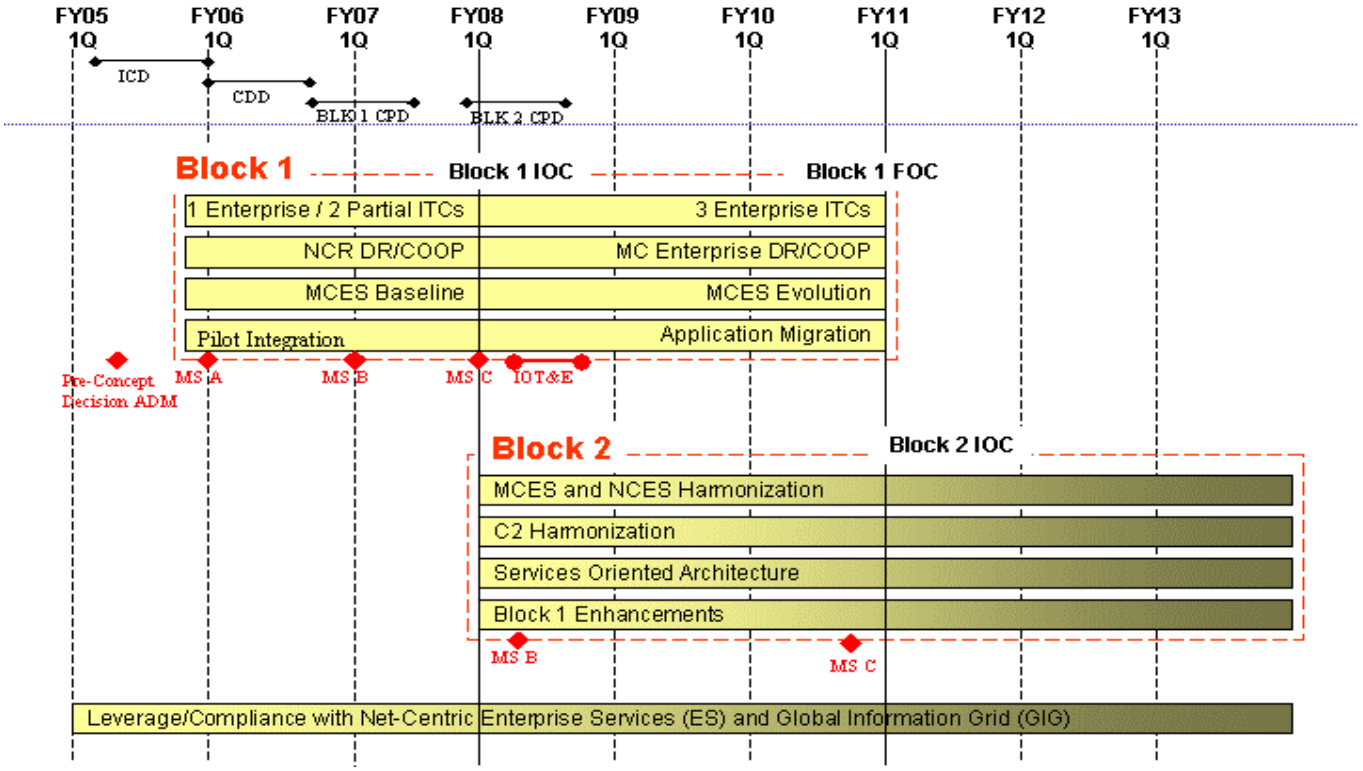
MCOTEA. Quantico, VA, Operational Test and Evaluation and Developmental Test and Evaluation testing
Fort Huachuca, Az , TDMS, DMS Joint Interoperability Certifications (JIC) exercise, 01/06 .

FY07 - Contractor TBD

Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5 System Development and Demonstration (SDD)**		PROGRAM ELEMENT **0605013M Marine Corps Information**			PROJECT NUMBER AND NAME **C2906 Marine Corps Information Technology DEV/MOD**							
Cost Categories	Method & Type	Activity & Location	PY s Cost	FY 05 Cost	FY05 Award Date	FY 06 Cost	FY06 Award Date	FY 07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MODELS	MIPR	FEDSIM	0.000	0.000		0.000		2.300	01/07		2.300	
MCEITS	RCP	MCSC, Quantico, VA	0.000			2.000	03/06	2.430	12/06		4.430	
IDE				1.000		0.000					1.000	
TFAS	MIPR					8.500	02/06	6.014	01/06		14.514	
Subtotal Product Dev			**0.000**	**1.000**		**10.500**		**10.744**		**Cont**	**Cont**	
Remarks												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY05 Award Date	FY 06 Cost	FY06 Award Date	FY 07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MCRISS	MIPR	FEDSIM	1.181	2.554	01/05	1.973	02/06			0.000	5.708	
HRDP	VAR	VARIOUS	6.745	4.739	01/05							
TFAS	VAR	VARIOUS				6.172	01/06	2.000	01/07	Cont	Cont	
Subtotal Support			**7.926**	**7.293**		**8.145**		**2.000**		**Cont**	**Cont**	
Remarks												
Cost Categories	Method & Type	Activity & Location	PY s Cost	FY 05 Cost	FY05 Award Date	FY 06 Cost	FY06 Award Date	FY 07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TFAS			0.460								0.460	
DMS	WR	MCOTEA	0.200	0.232	01/05	0.048	01/06	0.232	01/07	Cont	Cont	
DMS	MIPR	JITC	0.139	0.004	12/04	0.110	12/05	0.200	12/06	0.000	0.453	
DMS	MIPR	SPAWAR				0.060	12/05	0.150	12/06			
DMS	RCP	NORTHOP GRUMMAN		0.029	04/05							
Subtotal T&E			**0.799**	**0.265**		**0.218**		**0.582**		**Cont**	**Cont**	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY05 Award Date	FY 06 Cost	FY06 Award Date	FY 07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management			**0.000**	**0.000**		**0.000**		**0.000**		**0.000**	**0.000**	
Remarks:												
Total Cost			**8.725**	**8.558**		**18.863**		**13.326**		**Cont**	**Cont**	

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-5 System Dev and Demor	0605013M Marine Corps Information Technology	C2906 MC Enterprise Inform Tech Services (MCEITS)

Program Schedule



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
(U) RDT&E,N	0.000	2.000	2.430				
(U) PMC, 463000 MCEITS	0.000	0.955	1.034				

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-5 System Dev and Demor	**0605013M Marine Corps Information Technology**	**C2906 MC Enterprise Inform Tech Services (MCEITS)**

MCEITS	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Pre-Concept Decision	2nd Qtr							
Milestone A		1st Qtr						
Block 1 Milestone B			1st Qtr					
Block 1 Milestone C				1st Qtr				
Block 1 IOT&E				2nd-4rd Qtr				
Block 2 Milestone B				2nd Qtr				
Block 2 Milestone C						4th Qtr		

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5 Eng and Manufacturing Dev**	PROGRAM ELEMENT NUMBER AND NAME **0605013M MC Information Technology**			PROJECT NUMBER AND NAME **C9999 FY06 Congressional Adds**			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost	**0.000**	**6.500**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty							

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

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST ($ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	**0.000**	**1.800**	**0.000**
RDT&E Articles Qty			

Auto Manifest Sys - Tactical 9879N:

COST ($ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	**0.000**	**2.200**	**0.000**
RDT&E Articles Qty			

Deployable Disbursing Sys 9880N:

COST ($ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	**0.000**	**2.500**	**0.000**
RDT&E Articles Qty			

Intel Sys & Com f/UCR Aware Bldg 9881N:

(U) Total $	**0.000**	**6.500**	**0.000**

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5 Eng and Manufacturing Dev	**0605013M MC Information Technology**	**C9999 FY06 Congressional Adds**

(U) PROJECT CHANGE SUMMARY:	**FY 2005**	**FY 2006**	**FY 2007**
(U) FY 2006 President's Budget:	**0.000**	**0.000**	**0.000**
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases		6.500	
(U) POM 06 Core Adjustment			
(U) Reprogrammings			
(U) SBIR/STTR Transfer			
(U) Minor Affordability Adjustment			
(U) FY 2007 President's Budget:	**0.000**	**6.500**	**0.000**

CHANGE SUMMARY EXPLANATION:
(U) Funding: See above.
(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**To Compl**	**Total Cost**

(U) Related RDT&E:

(U) D. ACQUISITION STRATEGY:

(U) E. MAJOR PERFORMERS:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5							R-1 ITEM NOMENCLATURE 0605013N, NAVY IT DEV/MOD		
COST ($ in Millions)	SYSCOM	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost		119.085	104.731	88.323	39.760	16.222	3.798	4.502	
2901 AAUSN IT	AAUSN	15.703	2.844	1.106					
2903 NAVAIR IT	NAVAIR	2.163	2.440	2.268	0.704	0.741	0.793	0.862	
2904 NAVSEA IT	NAVSEA	7.000							
2905 BUPERS IT	BUPERS	0.829							
2907 RESFOR IT	SPAWAR	1.661	6.034	1.274	1.298	1.321	1.307	1.328	
2907 RESFOR IT	BUPERS			0.405	0.414	0.426	0.436	0.444	
3026 ERP CONVERGENCE	NAVAIR	55.949	48.613	77.490	36.132	11.844	0.000	0.000	
3038 E-BUSINESS	NAVSUP	0.007							
3167 JOINT TECHNICAL DATA INTEGRATION (JTDI)	NAVAIR			1.881	1.212	1.890	1.262	1.868	
9601 NAVY LAW ENFORCEMENT INFO EXCHANGE	AAUSN	4.059		3.899					
9999 CONGRESSIONAL ADDS		31.714	44.800						

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

2901 AAUSN IT: IOC is the Marine Crops component with responsibility for counterintelligence policy matters. Marine Corps Counterintelligence (under the cognizance of IOC) has primary responsibility in combat involving actual, potential, or suspected terrorism, sabotage, espionage, and subversive activities. Recent and continuing military operations involving Marine Corps counterintelligence personnel, including those in Iraq and Afghanistan, have necessitated a concerted effort to improve IOC's ability to fuse, analyze and disseminate counterintelligence threat information, and do so in a manner that is interoperable and fully integrated within the joint-service tactical arena. Within the Department of Defense, the Defense Counterintelligence Information Service (DCIIS) is developing a web-based architecture known as PORTICO that will enable participating tactical counterintelligence organizations to pull, fuse and disseminate threat data; perform predictive analysis and share all counterintelligence investigative information within various theaters of operation. Specific aspects addressing RDT&E requirements associated with Marine Corps participation in the PORTICO effort are attached in the R-2a.

Development of the Capital Asset Management System (CAMS) supports the Departments Financial Improvement Plan designed to realize OSD's goal of achieving a clean audit of Defense Department financial statements. This project is being worked in conjunction with the OSD (AT&L) Property and Equipment (P&E) Office and the Business Modernization Management Program (BMMP) to ensure alignment with the Business Enterprise Architecture (BEA). CAMS will enable the Department of Navy to implement and integrate Asset Management functions for Military Equipment Valuation, incorporating best commercial business practices utilizing Commercial Off-The-Shelf SAP R/3 software, and providing integrated data, and workflow processes. CAMS will be configured following ASAP's proven implementation methodology and will leverage the Asset Management configuration of the existing Navy Cabrillo ERP system. FY05 funding supports system design/development/integration testing/deployment.

The Naval Inspector General (NAVINSGEN) request funding support to cover costs associated with the Naval Inspector General Hotline Tracking System (NIGHTS). Per SECNAVINST 5430.57F, the NAVINSGEN serves as the Navy Program Manager and focal point for the DoD and Navy "Hotline" Program. The NIGHTS will meet NAVINSGEN requirement for an enterprise application that will initially focus on IG functional areas that can be standardized and streamlined with the use of a web-based centralized system and will provide the Navy a single source of standardized, real time Navy Inspector General investigative data.

2903 NAVAIR IT: 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.

2904 NAVSEA IT: 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. In addition, this RDT&E project supports WIDE AREA LEARNING which includes development of an interface between Wide Area Workflow and Navy Stystems to provide an end-to-end process for vendor pay.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA 5	R-1 ITEM NOMENCLATURE 0605013N, NAVY IT DEV/MOD

2905 BUPERS IT: Navy Personnel Research, Studies, and Technologies (NPRST): 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.
Electronic Military Personnel Record System (EMPRS) is an electronic document/image based system that serves as the repository for all Department of Navy (DoN) official military personnel record images. It supports retired, active, and reserve military personnel in the functional areas of selection board operations, casualty management, mobilization, and other military personnel management functions. EMPRS supports over 180 statutory and administrative selection boards annually providing over 12 million service record images, covering promotions, assignments, and retention. Additionally, it provides the Navy with the capability to meet the statutory requirement to maintain permanent personnel records for a period of 62 years. After 62 years, Navy permanent records are provided to National Archives and Records Administration and become public records. Current Acquisition Strategy is a two-phased approach to Technology Refresh (TR) EMPRS and achieve Milestone C designation, followed by actions to reengineer the system commencing with Business Process Reengineering (BPR). The TR system, which will achieve Milestone C, will result in the disposal of the legacy system and the beginning of sustainment on the TR system. This supports the N1 Architecture and Single Integrated Human Resource Strategy (SIHRS). EMPRS was authorized to commence TR in March 2003 with a completion time of early FY05 .

2907 RESFOR IT SPAWAR: Sea Warrior is the Human Resources component of the Chief of Naval Operation's (CNO) Sea Power 21 Transformation Roadmap, focused on maximizing human capital and improving fleet readiness by ensuring the right skills are in the right place at the right time. From an information technology perspective, Sea Warrior provides a comprehensive Web-based Career Management System (CMS) that implements the Navy's Single Integrated Human Resources Strategy (SIHRS) for stakeholders, including but not limited to Enlisted Community Managers, Manning Control Authorities (MCA), Placement Managers, Detailers, Losing/Gaining Commands and most importantly, the individual Sailor. In FYs 2003 and 2004, this initiative was supported by Congressional RDTE funding (Project 9088). This funding was provided for Enterprise reengineering, integration and Web enablement of Manpower and Personnel legacy systems.

DoN eBusiness Solutions (Previously referrenced as DASN ACQ or AAUSN-IT): This effort encompasses a number of Federal, Department of Defense (DoD) and Navy electronic solutions which, when combined, enable a DoN end-to-end procurement/financial management process (including receipt, acceptance and payment). These Acquisition Initiatives directly support the DoD mission of providing not only a paperless contracting and procurement process, but also provides an integrated over-all system architecture, which promotes efficiency in the transferring of data and information between applications. By facilitating contracting, receipts & acceptance, contractor payments, personnel and interest payment savings, etc., this effort directly supports virtually all DoN efforts including electronic Government, Integrated Acquisition Environment, Strategic Acquisition, and other OSD initiatives. Current and future RDT&E development for Wide Area Work Flow-Receipt and Acceptance (WAWF-RA), Navy Air Force Interface (NAFI), Purchase Requisition Builder (PRB) and Universal Interface (UI) focuses on interface design and implementation to allow data and information to pass to and from Department of Navy (DoN) systems to mandated Federal and DoD systems.

WAWF-RA - Increasing the use of WAWF within the Navy is partly dependent on interfaces with financial systems used by Navy commands. RDT&E fundeing will be utilized to develop WAWF interface requirements and support deployment of these interfaces.

NAFI is currently loosely interfaced with Electronic Document Access (EDA) via use of Web documents links. OSD has approved the NAFI/EDA merger plan which will transition NAFI functionality and users to EDA by the end of FY06. All NAFI data will be aggregated in EDA as part of the merger. This Transition will be funded through currently budgeted RDT&E for NAFI.

PRB and UI - Provides critical links between purchase requisition creation and flow of that information into NAFI. RDT&E funding will be used to enhance the capabilities to meet growing demand of the user community. Enhanced capabilities are directly linked to increased use and acceptance of acquisition e-business systems solutions.

2907 RESFOR IT BUPERS: Joint Air Logistics Information System (JALIS) 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. JALIS funds are realigned for FY07-11 from SPAWAR to the Chief of Naval Personnel.

3026 ERP Convergence: The Navy Enterprise Resource Planning (ERP) Program was established to achieve the overarching objectives of the Defense Reform Initiative of 1997, the OUSD (Comptroller) Business Management Modernization Program (BMMP), and the Chief Financial Officer's Act of 1990. In 1998, the Navy's Revolution in Business Affairs (RBA) Commercial Business Practices Working Group established ERP pilots in each of the four major systems commands to investigate the applicability of using a Commercial-off-the-Shelf (COTS) ERP solution for the Navy's business. Each pilot (Sigma, Supply Maintenance Aviation Re-engineering Team (SMART), Navy Enterprise Maintenance Automated Information System (NEMAIS), and Cabrillo) used the SAP platform for different functional areas including Acquisition, Financial Management, and Logistics. Converging and extending the proven pilot solutions across the Navy enterprise will integrate the existing pilot projects, upgrading the SAP ERP software suite as a single Navy platform that will encompass financial, intermediate-level maintenance, plant supply, wholesale supply, and program management and provide the mechanism for future technology insertion. The Navy ERP solution will provide a coherent and seamless Fleet focus that enables the Navy to standardize business processes using information technology that will result in accurate, timely, and efficient services to the Fleet, retirement of stove-piped data systems that are no longer sustainable, acceleration of financial transactions, and improved accountability for financial management. The Navy-wide ERP Program is one of the major components of SEA ENTERPRISE.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA 5	R-1 ITEM NOMENCLATURE 0605013N, NAVY IT DEV/MOD

3167 Joint Technical Data Integration (JTDI) Program: Funding supports the evaluation, testing and integration to develop a JTDI Commercial Off The Shelf (COTS) solution for installation on a Carrier (CV) and Amphibious Assault (L) class ships and up to 104 Navy/Marine Corp aviation activities. JTDI is a digital technical data access, delivery and local O&I level library management toolset and telemaintenance collaboration process enabler. It improves accuracy and timeliness of technical manual and other technical data delivery and minimizes the Fleet's library management burden. JTDI reduces maintenance workhours with saving Return on Investment (ROI) of 2.5:1. It facilitates the transition of the Joint Distance Support and Response (JDSR) Advanced Concept Technology Demonstration (ACTD) for telemaintenance and provides for process efficiencies to support ongoing Aviation Fleet Technical Representative reductions.

9601 Navy Law Enforcement Information Exchange: NCIS initiated two cornerstone initiatives to expand information sharing among local, state, and federal law enforcement agencies in Department of the Navy (DON) strategic locations. Recognizing that data is the key to detecting and neutralizing potential threats to the DON's strategic assets - principally the Navy's nuclear fleet and related infrastructure - NCIS launched these initiatives, known collectively as the Law Enforcement Information Exchange (LInX), in the Hampton Roads, Virginia, Puget Sound, Washington, and Hawaii areas. LInX has the potential to deliver a vast array of previously unavailable law enforcement information to NCIS, along with new tools to exploit it. These funds provide for continued development of the LInX system and capabilities and attainment of initial and full operating capability of the LInX program by the end of FY07 in a total of nine regions that include critical strategic Naval assets (in addition to Hampton Roads, Puget Sound and Hawaii: South Texas; Northeast Florida/Southeast Georgia; and tentatively, San Diego/Camp Pendleton; National Capital Region; New England (Newport, RI/Groton, CT); and Charleston, SC).

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Info Tech Dev/Mod

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
Previous Presidents Budget:	123.868	60.859	24.964
Current BES/Presidents Budget	119.085	104.731	88.323
Total Adjustments	-4.783	43.872	63.359
Summary of Adjustments			
Congressional Undistributed Reductions	-2.829	-0.651	0.000
Congressional Increases	0.000	44.800	0.000
Economic Assumptions	0.000	-0.277	0.450
Miscellaneous Adjustments	-1.954	0.000	62.909
Subtotal	-4.783	43.872	63.359

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N Information Technology Development				PROJECT NUMBER AND NAME 2901 AAUSN IT -NCIS Modernization			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**15.703**	**2.844**	**1.106**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The NCIS Modernization Initiative includes 3 projects with RDT&E requirements : Multiple Threat Alert Center (MTAC), Data Modernization & Analytical Tools, and Threat Planner.

Multiple Threat Alert Center (MTAC):

The Post-Cole Secretary of the Navy Antiterrorism/Force Protection Task Force identified the need for NCIS to enhance the Multiple Threat Alert Center (MTAC). The MTAC provides key antiterrorism/force protection products in response to Fleet tasking and is critical to Fleet protection during the current Global War on Terrorism. This project provides funding for the development of an IT system to track the movement of NCIS special agents deployed in advance of DoN in-transit units. The ability to track and communicate with these agents is necessary in order to forward threat data to these forward deployed agents and to task them to respond to emerging threats. Funding is required for equipment and contractor support ito modify COTS software.

Data Modernization & Analytical Tools:

NCIS data collection, filtering, and analysis infrastructure is unable to handle the increased flow of terrorism investigative and threat reporting of the Post 9/11-Global War on Terrorism era. NCIS must revitalize its infrastructure and its data and investigation management capabilities to effectively counter current terrorist threats. The three main components of this portfolio investment are data modernization, knowledge management, and investigation management.

Threat Planner:

The NCIS Threat Planner is a web-based push/pull intelligence product delivery system designed for use by operational commanders in the fleet. Some unified commands are experimenting with similar capabilities to deliver intelligence and security information. NCIS has also been coordinating with PACOM which is testing the Area Security Operations Command and Control (ASOCC) and Homeland Security Command and Control Systems. The concept of the NCIS Threat Planner was a result of these collaborations and the NCIS Modernization Study.

CONSOLIDATED LAW ENFORCEMENT OPERATION CENTER (CLEOC):

The Naval Criminal Investigative Service (NCIS) is the Executive Agent (EA) for the Consolidated Law Enforcement Operations Center (CLEOC), an information system that combines criminal justice and law enforcement information from multiple communities throughout the Department of the Navy. CLEOC is a critical element of NCIS's Modernization efforts and will become the single report-writing and information-management system through which NCIS accomplishes its criminal investigative mission. In addition, CLEOC will be modernized in FY2006-2007 to become a cradle-to-grave management system for all criminal justice information throughout the Department of the Navy.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Information Technology Development	2901 AAUSN IT -NCIS Modernization

B. Accomplishments/Planned Program :.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		15.703	2.844	1.106
RDT&E Articles Quantity				

FY2005

MTAC:

$ .688 Agent Overwatch Contract Support. Contractor support is required to provide support contractors for the IT and AV systems in the MTAC as well as hardware /software maintenance agreements.

$ .777 Agent Overwatch Hardware and Software. The hardware/software support for the MTAC is the maintenance, upgrade and lifecycle management of the computer workstations, network components,
and audio/video systems.

$ .268 Agent Overwatch Training.

Data Modernization & Analytical Tools:

$4.121 Contract Support - Electronic data collection and integration of all-source data from worldwide network of NCIS staff and collection sources.

$3.507 Software / Hardware

Threat Planner:

$3.625 Hardware and Software

$ .848 Contract Support for Design & Implementation

$ .610 Training

CLEOC:

$1.059 - Contractor Support- Necessary contractor resources for the Requirements Analysis, Design, Testing, Implementation, and Support of the application.

$ .200 - Travel costs for Project Manager, Project Leaders, Executive Personnel, and other team members to visit designated locations during the development, and testing of this system.

FY2006

CLEOC:

$1.700 - Contractor Support- Necessary contractor resources for the Requirements Analysis, Design, Testing, Implementation, and Support of the application.

$ .700 - Hardware & Software- Software and hardware necessary to accommodate the 17k+ users of application.

$ .444 - Travel costs for Project Manager, Project Leaders, Executive Personnel, and other team members to visit designated locations during the development, and testing of this syste

FY2007

CLEOC:

$ .850 - Contractor Support- Necessary contractor resources for the Requirements Analysis, Design, Testing, Implementation, and Support of the application.

$ .256 - Travel costs for Project Manager, Project Leaders, Executive Personnel, and other team members to visit designated locations during the development, and testing of this system.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Info Tech Dev/Mod	PROJECT NUMBER AND NAME 2901 AAUSN IT -NCIS Modernization

C. PROGRAM CHANGE SUMMARY:

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

R-1 Shopping List Item No 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0605013N Information Technology Development			PROJECT NUMBER AND NAME 2901 AAUSN IT -NCIS Modernization						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	T&M	Rigid Systems, MD		0.630	08/05						0.630	0.630
Licenses	BPA	EC America, MD		0.763	07/05						0.763	0.400
Tooling												
GFE												
Award Fees												
Subtotal Product Development				1.393		0.000		0.000		0.000	1.393	
Remarks:												
Development Support												
Software Development	T&M	Northrop Grumman MS		4.188	11/04						4.188	4.188
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses	T&M	MITRE		3.950	10/04						3.950	3.950
GFE												
Award Fees												
Subtotal Support				8.138		0.000		0.000		0.000	8.138	
Remarks:												

R-1 Shopping List Item No 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0605013N Information Technology Development			PROJECT NUMBER AND NAME 2901 AAUSN IT -NCIS Modernization							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	CPFF	InterImage		1.218	09/05	2.844	04/06	1.106	05/07		5.168	5.168
Contractor Engineering Support	T&M	IMC		1.584	07/05						1.584	1.584
Program Management Support	T&M	Bearing Point		3.370	04/05						3.370	3.370
Travel												
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	6.172		2.844		1.106			10.122	
Remarks:												
Total Cost				15.703		2.844		1.106		0.000	19.653	
Remarks:												

R-1 Shopping List Item No 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0605013N, NAVY IT DEV/MOD**	2903, NAVAIR IT

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**2.163**	**2.440**	**2.268**	**0.704**	**0.741**	**0.793**	**0.862**	
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0605013N, NAVY IT DEV/MOD**	2903, NAVAIR IT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	2.163	2.440	2.268	
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0605013N, NAVY IT DEV/MOD**	2903, NAVAIR IT

C. PROGRAM CHANGE SUMMARY:

Schedule: Not Applicable

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

E. ACQUISITION STRATEGY:

CMIS Program: The CMIS Program used Joint Logistics Systems Center (JLSC) funds to evolve CMIS to Software Release 5.0. 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 evolvoing 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.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 2903, NAVAIR IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
SUBTOTAL PRODUCT DEV.												
Remarks:												
SUPPORT												
Software Development	C-IDIQ	INTERGRAPH CORP, HUNTSVILLE,AL	6.189	1.554	11/1/2004						7.743	7.743
Software Development	C-IDIQ	TBD				1.984	3/1/2006	1.738	12/1/2006	.856	4.496	4.496
SUBTOTAL SUPPORT			6.189	1.554		1.984		1.738		.856	12.239	
Remarks:												
TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												
Remarks:												
MANAGEMENT												
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	1.785	.609	11/1/2004	.456	11/1/2005	.530	11/1/2006	2.244	6.746	
SUBTOTAL MANAGEMENT			1.785	.609		.456		.530		2.244	6.746	
Remarks:												
Total Cost			7.974	2.163		2.440		2.268		3.100	18.985	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	2903, NAVAIR IT

Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	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
CMIS PROGRAM:																																
Acquisition Milestones	MS IIIB ▲				MS IIIC ▲				MS IIID ▲				MS IIIE △				MS IIIF △				MS IIIG △				MS IIIH △							
Contract Award		▲				▲				▲				△				△				△				△							
Engineering Milestones																																
TRB/CCB/CAT		■	■			■				□				□				□				□				□							
Test & Evaluation Milestones																																
TRR/FPT/BETA				■	■		■	■			□				□				□				□				□						
Production Milestones																																
	SW Release 8.0				SW Release 9.0				SW Release 10.0				Annual SW Release				Annual SW Release				Annual SW Release				Annual SW Release							
Complete Annual SW Release	▲				▲				▲				△				△				△				△							

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 2903, NAVAIR IT			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
CMIS PROGRAM:								
Complete SW Release 8.0	1Q							
Contract Award - SW Release 9.0	2Q							
Engineering Milestones - TRB/CCB/CAT	2Q/3Q							
T&E Milestones - TRR/FPT/BETA	4Q	1Q						
Complete SW Release 9.0		1Q						
Contract Award - SW Release 10.0		1Q						
Engineering Milestones - TRB/CCB/CAT		2Q						
T&E Milestones - TRR/FPT/BETA		3Q/4Q						
Complete SW Release 10.0			1Q					
Contract Award - Annual SW Release			1Q					
Engineering Milestones - TRB/CCB/CAT			2Q					
T&E Milestones - TRR/FPT/BETA			3Q/4Q					
Complete Annual SW Release				1Q				
Contract Award - Annual SW Release				1Q				
Engineering Milestones - TRB/CCB/CAT				2Q				
T&E Milestones - TRR/FPT/BETA				3Q/4Q				
Complete Annual SW Release					1Q			
Contract Award - Annual SW Release					1Q			
Engineering Milestones - TRB/CCB/CAT					2Q			
T&E Milestones - TRR/FPT/BETA					3Q/4Q			
Complete Annual SW Release						1Q		
Contract Award - Annual SW Release						1Q		
Engineering Milestones - TRB/CCB/CAT						2Q		
T&E Milestones - TRR/FPT/BETA						3Q/4Q		
Complete Annual SW Release							1Q	
Contract Award - Annual SW Release							1Q	
Engineering Milestones - TRB/CCB/CAT							2Q	
T&E Milestones - TRR/FPT/BETA							3Q/4Q	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N NAVY INFO TECH DEV/MOD				PROJECT NUMBER AND NAME 2904 NAVSEA IT DEV/MOD PROJECT			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**7.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

2904 NAVSEA IT - 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. In addition, this RDT&E project supports WIDE AREA LEARNING which includesdevelopment of an interface between Wide Area Workflow and Navy Stystems to provide an end-to-end process for vendor pay.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N NAVY INFO TECH DEV/MOD	2904 NAVSEA IT DEV/MOD PROJECT

38384

B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	FY 08
Accomplishments/Effort/Subtotal Cost	7.000	0.000	0.000	0.000
RDT&E Articles Quantity				

Human System Performance Assessment Capability - Provides the NAVY with the capability to measure, test , and certify Sailor performance while providing concrete engineering and data driven recommendations for future designs that will enhance human and total system performance.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N NAVY INFO TECH DEV/MOD	2904 NAVSEA IT DEV/MOD PROJECT

C. PROGRAM CHANGE SUMMARY:

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

E. ACQUISITION STRATEGY:

Not applicable

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N NAVY INFO TECH DEV/MOD	2904 NAVSEA IT DEV/MOD

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0.043			0.000		0.000		0.000		Continuing	Continuing	
Ancillary Hardware Development													0.000	
Component Development													0.000	
Ship Integration													0.000	
Ship Suitability													0.000	
Systems Engineering				7.000									7.000	
Training Development													0.000	
Licenses													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Product Development			0.043	7.000		0.000		0.000		0.000		0.000	7.043	

Remarks:

"Various" is being used in the Contract Method &Type, plus Performing Activity & Location, because of numerous project initiations and implementations.

Development Support													0.000	
Software Development	Various	Various	0.157			0.000		0.000		0.000		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			0.157	0.000		0.000		0.000		0.000		0.000	0.157	

Remarks:

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N NAVY INFO TECH DEV/MOD	2904 NAVSEA IT DEV/MOD

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.516			0.000		0.000		0.000		Continuing	Continuing	
Operational Test & Evaluation			0.019			0.000		0.000		0.000		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			0.535	0.000		0.000		0.000		0.000		0.000	0.535	
Remarks:														
Contractor Engineering Support	C/FP	Various	0.641			0.000		0.000		0.000		Continuing	Continuing	
Government Engineering Support													0.000	
Program Management Support	C/FP	Various	0.498			0.000		0.000		0.000		Continuing	Continuing	
Travel													0.000	
Labor (Research Personnel)													0.000	
SBIR Assessment													0.000	
Subtotal Management			1.139	0.000		0.000		0.000		0.000		0.000	1.139	
Remarks:														
Total Cost			1.874	7.000		0.000				0.000		0.000	8.874	
Remarks:														

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N Information Technology Development				PROJECT NUMBER AND NAME 2905 Manpower, Personnel, Training, Simulation, and Human Factors			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.829**						
RDT&E Articles Qty		**1**						

A. 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.

Electronic Military Personnel Record System (EMPRS) is an electronic document/image based system that serves as the repository for all Department of Navy (DoN) official military personnel record images. It supports retired, active, and reserve military personnel in the functional areas of selection board operations, casualty management, mobilization, and other military personnel management functions. EMPRS supports over 180 statutory and administrative selection boards annually providing over 12 million service record images, covering promotions, assignments, and retention. Additionally, it provides the Navy with the capability to meet the statutory requirement to maintain permanent personnel records for a period of 62 years. After 62 years, Navy permanent records are provided to National Archives and Records Administration and become public records. Current Acquisition Strategy is a two-phased approach to Technology Refresh (TR) EMPRS and achieve Milestone C designation, followed by actions to reengineer the system commencing with Business Process Reengineering (BPR). The TR system, which will achieve Milestone C, will result in the disposal of the legacy system and the beginning of sustainment on the TR system. This supports the N1 Architecture and Single Integrated Human Resource Strategy (SIHRS). EMPRS was authorized to commence TR in March 2003 with a completion time of early FY05 .

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Information Technology Development	2905 Manpower, Personnel, Training, Simulation, and Human Factors

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.024	0.000	0.000
RDT&E Articles Quantity		1		

(U)

FY 2005

• (U) ($.024) Complete prototype development of CNP Quick Polling System for the Chief of Naval Personnel.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.805		
RDT&E Articles Quantity				

(U)

FY 2005 :
($.805M) Tech Refreshment - System Development and Demonstration.
Electronic Military Personnel Record System Program Management Office and development contract services to support acquisition and systems engineering processes (R&D, business design, development, testing, programming, and documentation).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Information Technology Development	2905 Manpower, Personnel, Training, Simulation, and Human Factors

C. PROGRAM CHANGE SUMMARY:

Schedule: Not applicable

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:

(U) Related RDT&E:

(U) PE 0604703N	Personnel, Training, Simulation and Human Factors
(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

E. ACQUISITION STRATEGY: Not applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 RESFOR IT SPAWAR/BUPERS

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**1.661**	**6.034**	**1.679**	**1.712**	**1.747**	**1.743**	**1.772**	
RDT&E Articles Qty								

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

2907 Sea Warrior is the Human Resources component of the Chief of Naval Operation's (CNO) Sea Power 21 Transformation Roadmap, focused on maximizing human capital and improving fleet readiness by ensuring the right skills are in the right place at the right time. From an information technology perspective, Sea Warrior provides a comprehensive Web-based Career Management System (CMS) that implements the Navy's Single Integrated Human Resources Strategy (SIHRS) for stakeholders, including but not limited to Enlisted Community Managers, Manning Control Authorities (MCA), Placement Managers, Detailers, Losing/Gaining Commands and most importantly, the individual sailor. In FYs 2003 and 2004, this initiative was supported by Congressional RDTE funding (Project 9088). This funding was provided for Enterprise reengineering, integration and Web enablement of Manpower and Personnel legacy systems. Specifically, this funding will be used to execute the Job Advertising and Selection System (JASS) and the Total Force Manpower Managemement Program (TFMMP) . JASS is the system that will deploy Career Management System (CMS) functionality to the the fleet. It is a subsystem of Navy Military Personnel Distribution System (NMPDS). CMS requirements originated over two years ago from a Cambridge Workshop that determined the Sea Warrior vision of distribution and the transformation of human resource processes. The CMS requirements will be deployed in 90-120 day increments in the JASS system. JASS has undergone a hardware and software framework modernization that will support extended scalability to include enhanced user loading and functionality to include the possible hosting of Human Capital Object individual (HCOi) and Human Capital Object requirement (HCOr) functionality. An afloat system of current functionality is also being provided to support the fleet with a need for disconnected operations during deployment. TFMMS - The Total Force Manpower Management System (TFMMS) supports the business processes needed for DOD/DON/CNO manpower management. The position data maintained in TFMMS drives all facets of Navy personnel readiness, manpower planning and distribution. TFMMS provides the manpower portion of readiness reporting for the Navy. TFMMS is currently being re-engineered in order to transition the Navy to a position based manpower management syteem. The re-engineered system will be called the Total Force Manpower Management Program (TFMMP). TFMMP will manage and provide the position and job data to distribution and other manning systems. It is the foundation that the Navy is building Sea Warrior upon. TFMMP is the single authoritative source for activity and manpower data and sends the demand signal to the Navy's military distribution systems to assure personnel readiness.

2907 DoN eBusiness Solutions (Previously referrenced as DASN ACQ or AAUSN-IT): To support the mandated DoD move to a paperless acquisition process efforts are required to move from paper to electron data at specific points within the procurement/financial process. To support the DoD End-to-End procurement/financial business process transformation, mission critical systems must be developed and sustained. This effort encompasses a number of other Federal, Department of Defense (DoD) and Navy electronic solutions which, when combined, will fully enable the DoN end-to-end procurement/financial management process.

Wide Area Work Flow – Receipt and Acceptance (WAWF-RA) is an invoicing application that encompasses a number of Federal, DoD and Navy electronic solutions (projects) which, when combined, enable a Department of Navy (DoN) end-to-end procurement/financial management process (including receipt, acceptance and payment). Current and future R&D funded development focuses on interface design and implementation to allow electronic data and information to pass to and from WAWF and then seamlessly distribute the electronic data to other Federal and Department of Defense (DoD) systems requiring such information.

Navy Air Force Interface (NAFI) is an application that reflects the "Expanding e-Government" aspect of the Presidents Management Agenda, and was created based on recommendations from the Quicksilver Taskforce to share electronic contract information more quickly between levels of government, and to automate internal process to reduce costs. Current and future R&D funded development focuses on transitioning NAFI functionality to Electronic Document Access (EDA). The combined EDA/NG (Next Generation) will serve as the central source of contract data and contract images. Cost savings through reduction of problem disbursements and prompt pay interest, as well as resultant labor efficiency gains, will also be achieved. The Universal Interface (UI) is a DoN initiative designed to electronically integrate former "stove piped" Requirements Generation, Contracting, Financial, logistics and other acquisition system application data to create a DoN end-to-end acquisition process. This initiative provides system-independent information exchange to allow sites with multiple requiring systems to interoperate, route and exchange procurement information across organizational boundaries. This initiative will provide an integration hub to route, translate, and transmit information amongst procurement applications.

PRB and UI - Provides critical links between purchase requisition creation and flow of that information into NAFI. RDT&E funding will be used to enhance the capabilities to meet growing demand of the user community. Enhanced capabilities are directly linked to increased use and acceptance of acquisition e-business systems solutions.

2907 RESFOR IT (BUPERS PORTION) 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. Current and future RDT&E funding supports improvements to the current JALIS application by continuing to implement approved Joint Configuration Control Board enhancements, complying with DoD security requirements and mandates, and upgrading the application to utilize vender supported development software tools.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Plans/Effort/Subtotal Cost	0.000	1.530	0.000
RDT&E Articles Quantity			

(U) **SEA WARRIOR**
(U) Migration of the Navy's active and reserve personnel systems into one integrated Commercial Off-The-Shelf (COTS) platform to support Navy data cleansing and provide common data sets for Defense Integrated Military Human Resources System (DIMHRS) and the Sea Warrior initiative. The migration will provide more accurate data to the fleet, and reduce maintenance costs. This is scheduled to be completed in FY06.
Migration of the Navy's active and reserve distribution systems, career and performance management systems, and manpower analytic systems into one integrated system to support Navy unique functionality, Sea Warrior, providing more accurate data to the fleet, and reducing maintenance costs of existing legacy systems.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.734	0.000
RDT&E Articles Quantity			

(U) **JASS**
(U) FY 06: Support the analysis, design ,development, and documentation of software systems as defined by approved Trouble Ticket (TR), Automated Data Services Request (ADSR), Data Processing Service Request (DPSR), and System Change Request (SCR). Tracking all work efforts using PM Tracker- PIR/PCR/work order/Ad Hoc/Data Anomaly/Data Calls/Action Items.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT

(U) B. Accomplishments/Planned Program Cont.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.000	0.000
RDT&E Articles Quantity			

(U) TFMMP
(U) FY 06: Finalize development of the Total Force Manpower Management Program (TFMMP). TFMMP is the replacement system for TFMMS. It will transition the Navy to a position based manpower management system which is the foundation for Sea Warrior. Support the user community in beta testing, and user acceptance testing. Analyze and fix any defects found. Process data conversion and load routines. Deploy and maintain the system.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.396	0.443	0.405
RDT&E Articles Quantity			

(U) **JALIS**
(U) FY 05:Continued to enhance the current JALIS with Joint Configuration Control Board (CCB) approved enhancements. Enhanced the current JALIS appliation to display requests and/or scheduled missions on the graphical user interface world map. Enhanced the JALIS application to operate in a secure environment by being Public Key Infrastructure (PKI) certified and Common Access Card (CAC) enabled.
(U) FY 06: Extensive software development to support upgrading to the latest Oracle database and development tools, Version 10G, because the current environment will be supported by Oracle.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 RESFOR IT

(U) B. Accomplishments/Planned Program Cont.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.265	1.327	1.274
RDT&E Articles Quantity			

U) DoN eBusiness Solutions (Previously referenced as DASN ACQ or AAUSN-IT):
(U) FY05 : WAWF versions 3.0.6 and 3.0.7 have been deployed. Progress has been made in identifying WAWF interface system specifications and design requirements. WAWF-RA accommodation of the new DoD requirements for the Unique Identification (UID) Policy is complete. Planned NAFI interfaces with WAWF, CPARS, PPIRS and the NAFI Data Mart implementation were not pursued as a result of September 30, 2004 OSD Directives which required all NAFI program enhancements be discontinued immediately pending validation by a combined EDA/NAFI Joint Requirements Board. In accordance with the OSD Directives FY05 funding for NAFI has been shifted to support the integration of NAFI and EDA.

(U) FY 06: Will implement interfaces between WAWF and the Navy Enterprise Resource Planning (ERP) system, Naval Sea Systems Command Integrated Logistics Support Management Information System (ILSMIS), Bureau of Medicine Defense Medical Logistic Standard Support (DMLSS) and Military Sealift Command (Oracle Financials). Release WAWF version 3.0.8 (implement multiple ACRNs per CLIN). Update UID (Unique Identifier) system as necessary. Release WAWF version 3.0.9 (increase user government furnished property functionality). Upgrade the UI system to WebMethods Version 6.x. Prior reference to the pursuit of NAFI related interfaces and data mart are no longer applicable as a result of the OSD Directive aforementioned. This transition will require RDT&E funding for requirements, design, data integration and testing support.

(U) FY 07: Release WAWF version 3.0.10 (measure/monitor system efficiencies implement Navy Interfaces (ERP, ILSMIS) Phase I and A/P (accounts payable) funded, implement multiple ACRNS per CLIN in one pay unfunded.) Release WAWF version 3.0.11 (multiple ACRNs per CLIN, commercial item financing payment, Navy Interfaces Phase II, Performance Based Payments, Progress Payments, Fast Pay for One Pay payments.) and 3.0.12 (construction payments, increased government property functionality). 3. Modify entire acquisition system architecture to use UI or GEX or other integration engine as the integration broker for financial and contractual applications.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 RESFOR IT

(U) C. PROGRAM CHANGE SUMMARY:

(U) Schedule:

Planned NAFI program enhancements were discontinued in accordance with September 30, 2004 OSD Directive which required validation of all program requirements by a combined EDA/NAFI Joint Requirements Board. PRB to be tranisitioned to the Marine Corps by the end of FY06. TFMMS funds for FY07-FY11 realigned from SPAWAR to MPT&E.

(U) Technical:

Not Applicable

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT

(U) E. ACQUISITION STRATEGY:

SEA WARRIOR: The mission of SPAWARINFOTECHCEN is to support Sea Warrior/N1 Migration to develop a fully integrated COTS capability that meets Sea Warrior/N1 Migration objectives. In order to attain the aforementioned objectives, the SPAWARINFOTECHCEN will develop incremental production capabilities that enhance the current capabilities and incorporate authoritative cleansed data. To achieve this, the authoritative sources of data must be identified, data must be corrected (cleansed), and then the data must be converted to the new standard and format. To ensure data integrity once the authoritative data has been cleansed, it must be maintained and controlled in its new state. Similarly, while this cleansing and conversion process progresses, the personnel community must be able to maintain continuity of operations.

The Sea Warrior/N1 Migration solution will address and rectify the issues and deficiencies currently being experienced by multiple legacy systems. Existing Manpower and Personnel (M&P) systems are not responsive enough to fully support current integrated operational requirements or to maintain cleansed data. Furthermore, the technological structure, which is extremely complex and programmer-dependent, does not provide the flexibility necessary to respond quickly to policy changes. A number of the systems are mainframe-based and batch-oriented, and would require a substantial upgrade to meet the data migration requirements of DIMHRS and to implement the enhanced capabilities to meet the requirements for distributed data and field-level processing. Therefore, to achieve these objectives the Sea Warrior/N1 Migration solution will implement an integrated version of COTS, with extensions required by law, that is compatible with the DIMHRS core structure. To help ensure data integrity and maintain a single authoritative source of personnel data throughout the project life cycle, data shall be cleansed and migrated from legacy systems to the Sea Warrior/N1 Migration solution. Once the data is consolidated, business processes must be in place to use and maintain the data. Then the associated legacy system will be retired. Current Sea Warrior/N1 Migration development efforts are comprised of a number of related projects. Execution of the program strategy will achieve the goal of a fully integrated system that provides a single authoritative source of data for DIMHRS. These disparate efforts shall be integrated into a program structure using a disciplined program and system engineering approach. Moreover, each development effort shall follow a common set of plans, procedures, and development life cycle. One objective of Sea Warrior/N1 Migration is to mitigate the high risk of cost and schedule impacts associated with migrating Navy personnel data to DIMHRS. These high-risk activities include, but are not limited to, data identification, data extraction, data cleansing, and data conversion and loading. In preparation for migrating this data to DIMHRS, the Sea Warrior/N1 Migration solution is envisioned to establish a single source of input for providing a consolidated and cleansed set of all required Navy personnel data. A second objective is for the integrated system to support the enhanced capabilities required to meet the Sea Warrior vision of improved Navy Human Capital Management capabilities that are not provided by the implementation of DIMHRS. Moreover, the Navy is reorienting its personnel readiness strategy to focus on retention and force shaping. Naval strategy currently is based around adjusting the mission capability of a ship for a particular operation. Both strategies require a seamlessly integrated management capability of manpower requirements and personnel inventory across the entire Navy.

JALIS: The contractor shall provide automated data processing services for the Joint Air Logistics Information System (JALIS) system supported by the Space and Naval Warfare Systems Center (SPAWARSYSCEN) in New Orleans, LA. PR07 Issue 14148 realigned JALIS funds for FY07-11 from SPAWAR to the Chief of Naval Personnel.

DoN eBusiness Solutions (Previously referrenced as DASN ACQ or AAUSN-IT): Planned NAFI program enhancements were discontinued in accordance with September 30, 2004 OSD Directive which required validation of all program requirements by a combined EDA/NAFI Joint Requirements Board. PRB to be tranisitioned to the Marine Corps by the end of FY06.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (Sea Warrior/JASS/TFMMP)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering											0.000	0.000
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	0.000

Remarks:

Development Support	GSA	SSC NOLA				0.820					0.820	0.000
Software Development	GSA	SSC NOLA				2.886					2.886	0.000
Training Development	GSA	SSC NOLA				0.030					0.030	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	0.000		3.736		0.000		0.000	3.736	0.000

Remarks:

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Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (Sea Warrior/JASS/TFMMP)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	GSA	SITC				0.275					0.275	0.000
Operational Test & Evaluation	GSA	SITC				0.153					0.153	0.000
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			0.000	0.000		0.428		0.000		0.000	0.428	0.000

Remarks:

Contractor Engineering Support	GSA	SITC				0.100					0.100	0.000
Government Engineering Support											0.000	0.000
Program Management Support											0.000	0.000
Travel											0.000	0.000
Subtotal Management			0.000	0.000		0.100		0.000		0.000	0.100	0.000

Remarks:

Total Cost			0.000	0.000		4.264		0.000		0.000	4.264	0.000

Remarks:

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Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (JALIS)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	GSA	SITC	0.050								0.050	
Tooling											0.000	
GFE											0.000	
Award Fees	GSA	SITC	0.141								0.141	
Subtotal Product Development			0.191								0.191	

Remarks:

Development Support	GSA	SITC		0.047	10/04	0.053		0.158	10/06		0.258	
Software Development	GSA	SITC		0.197	10/04	0.222		0.225	10/06		0.644	
Training Development	GSA	SITC		0.012	10/04	0.013		0.018	10/06		0.043	
Integrated Logistics Support											0.000	
Configuration Management	GSA	SITC		0.032	10/04	0.035		0.004	10/06		0.071	
Studies & Analysis											0.000	
GFE											0.000	
Subtotal Support				0.288		0.323		0.405			1.016	

Remarks:

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Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (JALIS)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	GSA	SITC		0.079	10/04	0.089					0.168	
Operational Test & Evaluation	GSA	SITC		0.021	10/04	0.022					0.043	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E				0.100		0.111					0.211	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel	GSA	SITC		0.008	10/04	0.009					0.017	
Subtotal Management				0.008		0.009					0.017	
Remarks:												
Total Cost				0.396		0.443		0.405				
Remarks:												

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DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (DoN eBusiness Solutions)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											8.656	
Ancillary Hardware Development											0.000	
Systems Engineering	FFP	BearingPoint/Alexandria, VA		0.170	01/05						0.170	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.170		0.000		0.000		0.000	0.170	

Remarks: DoN eBusiness Solutions - NAFI to be transitioned to EDA in FY06. PRB/UI to be transitioned to Marine Corps in FY06.

Development Support	FFP	BearingPoint/Alexandria, VA	0.913	0.020	01/05						0.933	
Software Development	FFP	Universal Consulting		0.671	12/06	0.330		0.800	10/06		1.801	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Studies & Analysis											0.000	
GFE											0.000	
Subtotal Support			0.913	0.691		0.330		0.800		0.000	2.734	

Remarks: DoN eBusiness Solutions -NAFI to be transitioned to EDA in FY06. PRB/UI to be transitioned to Marine Corps in FY06.

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Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Information Technology Dev/Mod	2907 SPAWAR IT (DoN eBusiness Solutions)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	FFP	BearingPoint/Alexandria, VA		0.210		0.803					1.013	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.210		0.803		0.000		0.000	1.013	
Remarks:												
Contractor Engineering Support	FFP	CACI						0.474			0.474	
Government Engineering Support	FFP	BearingPoint/Alexandria, VA		0.194		0.194					0.388	
Program Management Support											0.000	
Travel											0.000	
Subtotal Management			0.000	0.194		0.194		0.474		0.000	0.862	
Remarks:												
Total Cost			0.913	1.265		1.327		1.274		0.000	4.779	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**									PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod														PROJECT NUMBER AND NAME 2907 SPAWAR IT (Sea Warrior)											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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																																
Prototype Phase																																
System Development									X	X	X																					
Equipment Delivery																																
Software 1XXSW Delivery										X																						
Test & Evaluation Milestones Beta Test User Acceptance Test										X X	X																					
Production Milestones IOC											X																					
Deliveries											X																					

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME 2907 SPAWAR IT (Sea Warrior)			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development			Q 1-2					
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)			Q 1-2					
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW			Q2					
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)			Q3					
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 Initail Production II Delivery								
IOC			Q3					
Full Rate Production (FRP) Decision								
Full Rate Production Start			Q3					
First Deployment								

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**									PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod												PROJECT NUMBER AND NAME 2907 SPAWAR IT (DoN eBusiness Solutions)											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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																																
Prototype Phase (NAFI DataMart)				X	X	X																										
System Development				X	X	X	X	X	X	X																						
Equipment Delivery																																
Test & Evaluation																																
Development Test						X	X	X	X	X	X	X	X									X	X	X	X	X	X					
Operational Test						X	X	X	X	X	X	X	X									X	X	X	X	X	X					
Production Milestones																																
Software Delivery/ Implementation										X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X

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Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME 2907 SPAWAR IT (DoN eBusiness Solutions)			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase	Q 4	Q 1-2						
System Design Review (SDR)		Q 2-4						
Software Specification Review (SSR)		Q 3				Q 3		
Contract Preparation								
System Development	Q 4	Q 1-4	Q 1-2		Q 2-4	Q 1-4	Q 1	
Quality Design and Build		Q 2-4	Q 1-2			Q 2-4	Q 1-3	
Test Readiness Review (TRR)		Q 2-4	Q 1-4	Q 1		Q 2-4	Q 1-4	
Developmental Testing		Q 2-4	Q 1-4	Q 1		Q 2-4	Q 1-4	
Software Delivery			Q 2-4	Q 1-4		Q 2-4	Q 1-4	Q 1-4
Operational Testing (OT-IIA)		Q 2-4	Q 1-4	Q 1		Q 2-4	Q 1-4	
Deployment								
Eng Dev Model (EDM) Radar Delivery - Lab								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N, NAVY IT DEV/MOD			PROJECT NUMBER AND NAME 3026, ERP CONVERGENCE			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**55.949**	**48.613**	**77.490**	**36.132**	**11.844**	**0.000**	**0.019**
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Navy Enterprise Resource Planning (ERP) Program was established to achieve the overarching objectives of the Defense Reform Initiative of 1997, the OUSD (Comptroller) Business Management Modernization Program (BMMP), and the Chief Financial Officer's Act of 1990. In 1998, the Navy's Revolution in Business Affairs (RBA) Commercial Business Practices Working Group established ERP pilots in each of the four major systems commands to investigate the applicability of using a Commercial-off-the-Self (COTS) ERP solution for the Navy's business. Each pilot (Sigma, Supply Maintenance Aviation Re-engineering Team (SMART), Navy Enterprise Maintenance Automated Information System (NEMAIS), and Cabrillo) used the SAP Platform for different functional areas including Acquisition, Financial Management, and Logistics.

Converging and extending the proven pilot solutions across the Navy enterprise will integrate the functional capabilities of the proven pilot projects, upgrading the SAP ERP software suite as a single Navy platform that, within FYDP funding, will encompass financial, intermediate-level maintenance, plant supply, wholesale supply, and program management and provide the mechanism for future technology insertion that will result tin accurate, timely, and efficient services to the Fleet, retirement of stove-piped data systems that are no longer sustainable, acceleration of financial transactions, and improved accountability for financial management.

A Congressional Add of $10.0M (O&M,N) was transferred from Navy ERP's 1A6A AG / SAG to support ERP Development efforts. This transfer does not change total Program funding.

The Navy-wide ERP Program is one of the major components of SEA ENTERPRISE.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	3026, ERP CONVERGENCE

B. Accomplishments/Planned Program

Development	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	44.746	35.763	57.836
RDT&E Articles Quantity			

ERP Convergence - Plan is to continue system development of ERP program functional solutions to support finance, program management, workforce management, travel management, intermediate-level maintenance, and stock point development. Plan also funds hardware and software required in support of SAP enterprise system integration and develop technical documentation. Program Office has developed an Integrated Master Schedule (IMS) which defines both contractor and government work and resources necessary to complete functionality capabilities for Echelon I, Regional Maintenance Centers (RMCs), Headquarters Financials and Programatics, and Wholesale Supply.

Test/Quality Assurance	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	9.594	9.045	19.654
RDT&E Articles Quantity			

ERP Convergence - Establish and manage Quality Assurance (QA) plans and system quality demonstrations. Continue testing in FY07 (integration testing, OT&E) and resolve any deficiencies identified.

Information Assurance	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.609	3.805	0.000
RDT&E Articles Quantity			

ERP Convergence - Develop and complete all required Information Assurance (IA) documentation for DOD Information Technology Security Certification and Accreditation Process (DITSCAP) certification. Evaluate and validate the integration and operation of all security features of Navy ERP systems. Funding for IA transitions to O&MN in FY07.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	3026, ERP CONVERGENCE

C. PROGRAM CHANGE SUMMARY:

Schedule: Schedule changes from the FY 2006 President's Budget Submission include a shift in Milestone C from 2nd Quarter FY06 to 1st Quarter FY07 and corresponding delays in Developmental Testing (Technical Evaluation) and initial deployments. The schedule includes Pilot functionality, Material Requirements Planning, Retail and Wholesale Supply functionality, and the mechanism for future Information Technology insertion.

Technical: Not applicable.

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
8106 Command Support Equipment OPN	1.505	10.870	7.142	4.618	6.460	3.533	1.976	Continuing	Continuing

E. ACQUISITION STRATEGY:

The Navy Converged ERP Program awarded a performance-based letter contract in September 04 for the design, development, and testing of Global Template 1.0 on a sole source basis. This contract is for the design, configuration, and testing of all functionality proposed for Global Template 1.0, including documentation of the business processes, configuration of the COTS product to Navy business processes, integration testing, and certification, as well as support for an independent third party testing and formal acceptance testing. Contract definitization planned for November 2005. Core solution software contracts and development/production hardware contracts will be acquired utilizing appropriate Government contract vehicles available at the time needed (GSA, DoD Enterprise licenses, vendor direct contracts, etc.).

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CLASSIFICATION:

Exhibit R-3 Cost Analysis									DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	BA 5	PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 3026, ERP CONVERGENCE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Development Hardware Prototype	Various	Various	2.032	.161	7/1/2005	.242	10/1/2005	1.261	10/1/2006	17.784	21.478	
Hardware Support	Various	Various						12.605	12/1/2006	9.847	22.452	
SUBTOTAL PRODUCT DEVELOPMENT			2.032	.161		.242		13.866		27.631	43.931	
Remarks: RDTE,N increase in the outyears reflects future Releases.												
SUPPORT												
Software Development	Various	Various		.892	5/1/2005						0.892	.892
Software Development	SS/CPAF	Bearing Point, Annapolis, MD	25.077								25.077	25.077
System Engineering & Design	SS/CPAF	Bearing Point, Annapolis, MD		46.585	9/27/2005	35.660	1/6/2006	43.747	11/1/2006	108.315	234.308	234.308
System Engineering & Design Travel												
SUBTOTAL SUPPORT			25.077	47.477		35.660		43.747		108.315	260.277	
Remarks: RDTE,N increase in the outyears reflects future Releases.												
TEST & EVALUATION												
Dev Test & Eval	Various	Various		3.153	2/1/2005	3.7329	2/1/2006	19.877	12/1/2006	31.510	58.272	
Oper Test & Eval	Various	Various		.499	2/1/2005	1.138	2/1/2006			2.876	4.513	
Quality Assurance	Various	Various	1.828	3.050	2/1/2005	4.076	2/1/2006			5.369	14.323	
SUBTOTAL TEST & EVALUATION			1.828	6.702		8.947		19.877		39.755	77.108	
Remarks: RDTE,N increase in the outyears reflects future Releases.												
MANAGEMENT												
IA Certification & Accreditation	Various	Various		1.609	7/1/2005	3.764	2/1/2006				5.373	
Information Assurance	Various	Various	.432								.432	.432
SUBTOTAL MANAGEMENT			.432	1.609		3.764					5.805	
Remarks:												
Total Cost			29.369	55.949		48.613		77.490		175.701	387.121	
Remarks:												

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

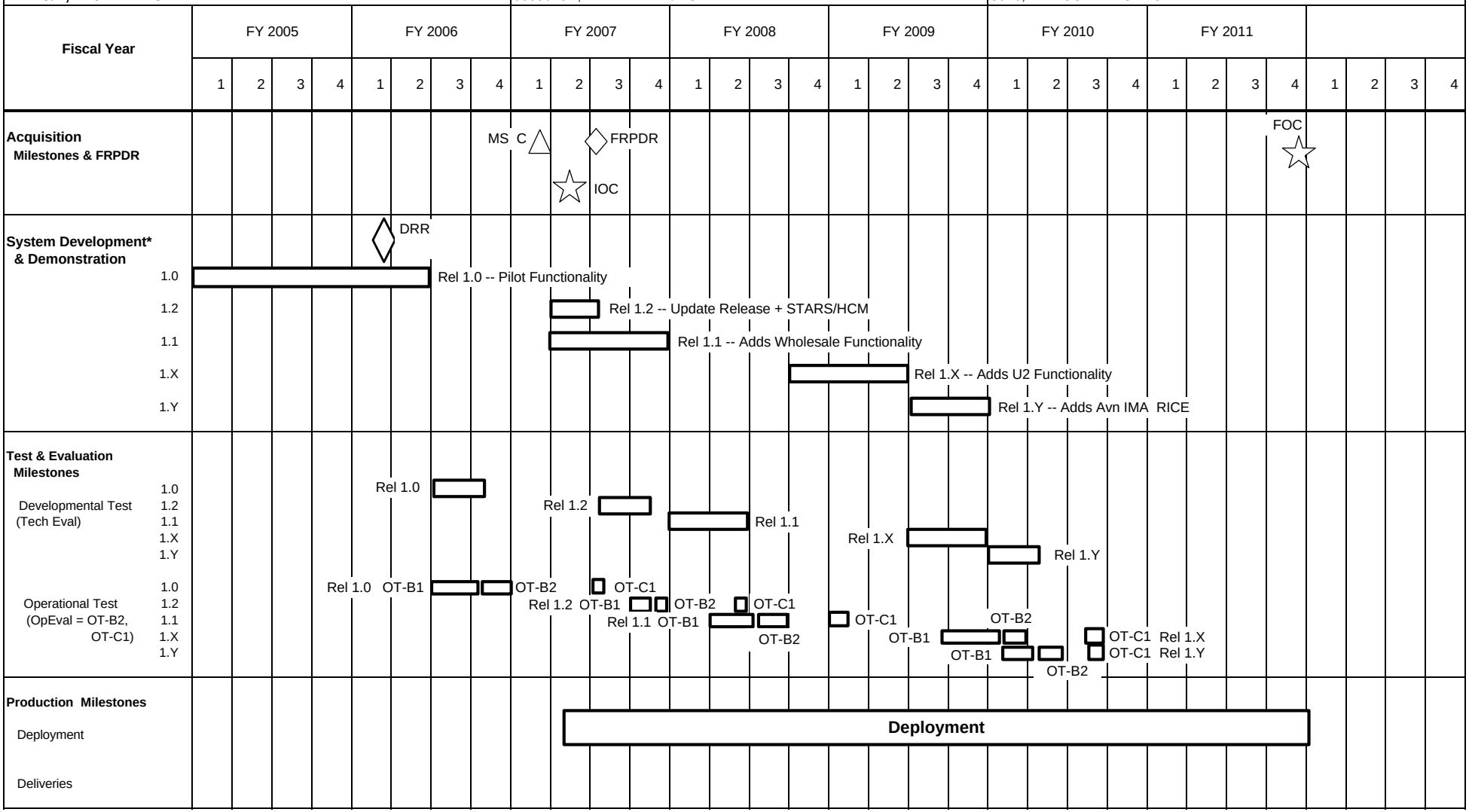
EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0605013N, NAVY IT DEV/MOD

PROJECT NUMBER AND NAME: 3026, ERP CONVERGENCE



* Concept and technology development effort conducted by four Pilot Projects (SIGMA, SMART, NEMAIS, CABRILLO) prior to ERP Convergence effort funded.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 3026, ERP CONVERGENCE			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
System Development & Demonstration (SDD) - Rel 1.0	1Q-4Q	1Q-2Q						
Design Readiness Review (DRR)		1Q						
Developmental Test (DT) - Release 1.0		3Q-4Q						
Operational Test (OT-B1) - Release 1.0		3Q-4Q						
Operational Test (OT-B2) - Release 1.0		4Q						
Milestone C (MS C)			1Q					
System Development & Demonstration (SDD) - Rel 1.2			2Q-3Q					
System Development & Demonstration (SDD) - Rel 1.1			2Q-4Q					
Deployment			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Initial Operating Capability (IOC)			2Q					
Operational Test (OT-C1) - Release 1.0			3Q					
Developmental Test (DT) - Release 1.2			3Q-4Q					
Full Rate Production Decision Review (FRPDR)			3Q					
Operational Test (OT-B1) - Release 1.2			4Q					
Operational Test (OT-B2) - Release 1.2			4Q					
Developmental Test (DT) - Release 1.1				1Q-2Q				
Operational Test (OT-B1) - Release 1.1				2Q-3Q				
Operational Test (OT-C1) - Release 1.2				2Q				
Operational Test (OT-B2) - Release 1.1				3Q				
System Development & Demonstration (SDD) - Rel 1.X				4Q	1Q-2Q			
Operational Test (OT-C1) - Release 1.1					1Q			
System Development & Demonstration (SDD) - Rel 1.Y					3Q-4Q			
Developmental Test (DT) - Release 1.X					3Q-4Q			
Operational Test (OT-B1) - Release 1.X					3Q-4Q	1Q		
Developmental Test (DT) - Release 1.Y						1Q-2Q		
Operational Test (OT-B2) - Release 1.X						1Q		
Operational Test (OT-B1) - Release 1.Y						1Q-2Q		
Operational Test (OT-B2) - Release 1.Y						2Q		
Operational Test (OT-C1) - Release 1.X						3Q		
Operational Test (OT-C1) - Release 1.Y						3Q		
Full Operating Capability (FOC)							4Q	

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605013N, NAVY IT DEV/MOD**				PROJECT NUMBER AND NAME 3167, Joint Technical Data Integration (JTDI)			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost			**1.881**	**1.212**	**1.890**	**1.262**	**1.868**	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Joint Technical Data Integration (JTDI) Program: Funding supports the evaluation, testing and integration to develop a JTDI Commercial Off The Shelf (COTS) solution for installation on a Carrier (CV) and Amphibious Assault (L) class ships and up to 104 Navy/Marine Corp aviation activities. JTDI is a digital technical data access, delivery and local O&I level library management toolset and telemaintenance collaboration process enabler. It improves accuracy and timeliness of technical manual and other technical data delivery and minimizes the Fleet's library management burden. JTDI reduces maintenance workhours with saving Return on Investment (ROI) of 2.5:1. It facilitates the transition of the Joint Distance Support and Response (JDSR) Advanced Concept Technology Demonstration (ACTD) for telemaintenance and provides for process efficiencies to support ongoing Aviation Fleet Technical Representative reductions.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0605013N, NAVY IT DEV/MOD**	3167, Joint Technical Data Integration (JTDI)

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.644	
RDT&E Articles Quantity				

Conduct test and readiness reviews and functional performance tests on JTDI system. Conduct technical evaluations and configuration reviews of JATDI system.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.237	
RDT&E Articles Quantity				

Conduct development efforts associated with a major release of fully deployed COTS intensive JTDI system. Conduct COTS requirements definition, evaluation, integration and testing of annual baseline releases. Conduct technology insertion of the JTDI system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	**0605013N, NAVY IT DEV/MOD**	3167, Joint Technical Data Integration (JTDI)

C. PROGRAM CHANGE SUMMARY:

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN, L.I. No. 98, Other Aviation Support Equipment			4.254	4.023	3.624	3.769	1.183	Cont	Cont

E. ACQUISITION STRATEGY:

JTDI Program: The Management Approach includes the Program Management Office residing in the Naval Air Systems Command (NAVAIR) with Milestone Decision Authority (MDA) delegated to the NAVAIR Command Information Officer (CIO). The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded Indefinite Delivery - Indefinite Quantity (IDIQ) contracts.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 3167, Joint Technical Data Integration (JTDI)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
SUBTOTAL PRODUCT DEV.												
Remarks:												
SUPPORT												
Software Development	C-IDIQ	TBD						1.237	12/1/2006	6.162	7.399	7.399
SUBTOTAL SUPPORT								1.237		6.162	7.399	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD						.644	11/1/2006	1.288	1.932	
SUBTOTAL TEST & EVALUATION								.644		1.288	1.932	
Remarks:												
MANAGEMENT												
SUBTOTAL MANAGEMENT												
Remarks:												
Total Cost								1.881		7.450	9.331	
Remarks:												

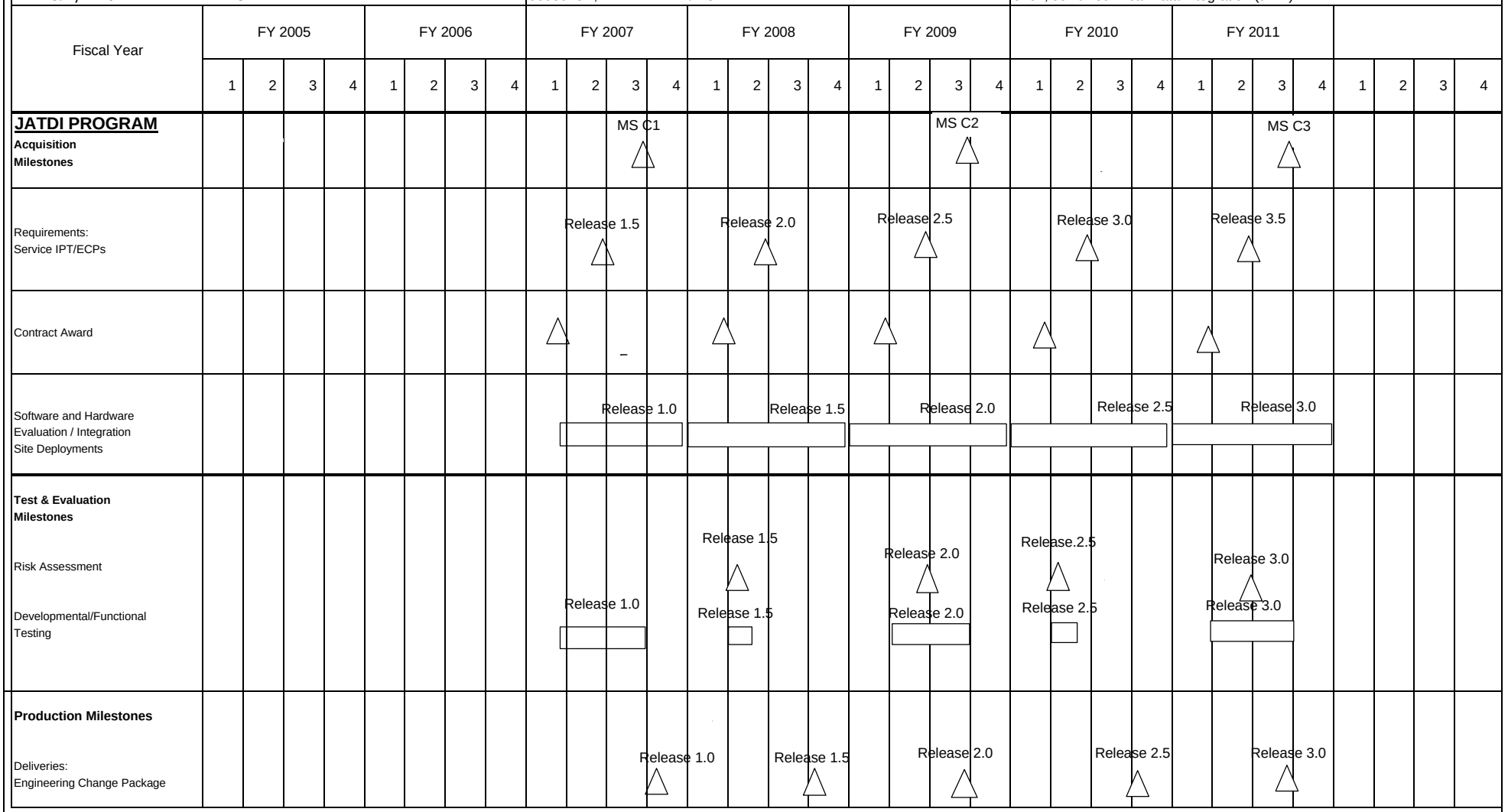
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0605013N, NAVY IT DEV/MOD

PROJECT NUMBER AND NAME: 3167, Joint Technical Data Integration (JTDI)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0605013N, NAVY IT DEV/MOD				PROJECT NUMBER AND NAME 3167, Joint Technical Data Integration (JTDI)			
Schedule Profile: JATDI PROGRAM	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone C1 Release 1.0			3Q					
Service IPT/ECPs Release 1.5			2Q					
Contract Award			1Q					
Software Hardware Int Release 1.5 Deployments Release 1.0			1Q-4Q					
Functional Testing Release 1.0			1Q-3Q					
Engineering Change Package Release 1.0			3Q					
Service IPT/ECPs Release 2.0				2Q				
Contract Award				1Q				
Software Hardware Int Release 2.0 Deployments Release 1.5				1Q-4Q				
Risk Assessment Release 1.5				2Q				
Functional Testing Release 1.5				2Q				
Engineering Change Package Release 1.5				2Q				
Milestone C2 Release 2.0					3Q			
Service IPT/ECPs Release 2.5					2Q			
Contract Award					1Q			
Software Hardware Int Release 2.5 Deployments Release 2.0					1Q-4Q			
Risk Assessment Release 2.0					2Q			
Functional Testing Release 2.0					2Q-3Q			
Engineering Change Package Release 2.0					3Q			
Service IPT/ECPs Release 3.0						2Q		
Contract Award						1Q		
Software Hardware Int Release 3.0 Deployments Release 2.5						1Q-4Q		
Risk Assessment Release 2.5						2Q		
Functional Testing Release 2.5						2Q		
Engineering Change Package Release 2.5						4Q		
Milestone C3 Release 3.0							3Q	
Service IPT/ECPs Release 3.5							2Q	
Contract Award							1Q	
Software Hardware Int Release 3.0 Deployments Release 2.5							1Q-4Q	
Risk Assessment Release 3.0							2Q	
Functional Testing Release 3.0							2Q-3Q	
Engineering Change Package Release 3.0							3Q	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 5**	PROGRAM ELEMENT NUMBER AND NAME 0605013N Information Technology Development				PROJECT NUMBER AND NAME 9601 AAUSN IT - LAW ENFORCEMENT INFO SHARING			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**4.059**	**0.000**	**3.899**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Law Enforcement Information Exchange: NCIS initiated two cornerstone initiatives to expand information sharing among local, state, and federal law enforcement agencies in Department of the Navy (DON) strategic locations. Recognizing that data is the key to detecting and neutralizing potential threats to the DON's strategic assets - principally the Navy's nuclear fleet and related infrastructure - NCIS launched these initiatives, known collectively as the Law Enforcement Information Exchange (LInX), in the Hampton Roads, Virginia, Puget Sound, Washington, and Hawaii areas. LInX has the potential to deliver a vast array of previously unavailable law enforcement information to NCIS, along with new tools to exploit it. These funds provide for continued development of the LInX system and capabilities and attainment of initial and full operating capability of the LInX program by the end of FY07 in a total of nine regions that include critical strategic Naval assets (in addition to Hampton Roads, Puget Sound and Hawaii: South Texas; Northeast Florida/Southeast Georgia; and tentatively, San Diego/Camp Pendleton; National Capital Region; New England (Newport, RI/Groton, CT); and Charleston, SC).

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Information Technology Development	9601 AAUSN IT - LAW ENFORCEMENT INFO SHARING

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.059	0.000	3.899
RDT&E Articles Quantity				

Navy Law Enforcement Information Exchange (LInX)

Law Enforcement Information Exchange: NCIS initiated two cornerstone initiatives to expand information sharing between loca, state, and federal law enforcement agencies in Department of the Navy (DON) strategic locations. Recognizing that data is the key to detecting and neutralizing potential threats to the DON's strategic assets-principally the Navy's nuclear fleet and related infrastructure-NCIS launched these initiatives, known collectively as the Law Enforcement Information Exchange (LInX), in the Hampton Roads, Virginia and Puget Sound, Washington and Hawaii areas. LInX has the potential to deliver a vast array of previously unavailable law enforcement information to NCIS, along with new tools to exploit it.

FY2005

$4,059K Contractor labor, equipment, and government travel/expenses for project management, systems engineering and software development staff for development of LInX.

FY2007

$3,899K Contractor labor, equipment, and government travel/expenses for project management, systems engineering and software development staff for development of LInX.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N Navy Info Tech Dev/Mod	9601 AAUSN IT - LAW ENFORCEMENT INFO SHARING

C. PROGRAM CHANGE SUMMARY:

Schedule: Not applicable

Technical: Not applicable

D. OTHER PROGRAM FUNDING SUMMARY: Not applicable

E. ACQUISITION STRATEGY: Not applicable

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0605013N Information Technology Development			PROJECT NUMBER AND NAME 9601 AAUSN IT - LAW ENFORCEMENT INFO SHARING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	T&M	Northrop Grumman		3.097	07/05			2.044	09/07		5.141	5.141
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.097		0.000		2.044		0.000	5.141	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	T&M	MITRE (IV&V)		0.162	07/05			0.200	04/07		0.362	0.362
GFE				0.400	05/05						0.400	0.400
Award Fees											0.000	
Subtotal Support			0.000	0.562		0.000		0.200		0.000	0.762	
Remarks:												

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0605013N Information Technology Development			PROJECT NUMBER AND NAME 9601 AAUSN IT - LAW ENFORCEMENT INFO SHARING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	T&M	BearingPoint		0.400	08/05			1.655	08/07		2.055	2.055
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.400		0.000		1.655		0.000	2.055	
Remarks:												
Total Cost			0.000	4.059		0.000		3.899		0.000	7.958	

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9089 Space and Naval Warfare Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	6.559	2.600	
RDT&E Articles Quantity			

Secure Interactive Distributed Learning (SIDL): To keep pace with fast moving changes in the Navy's technology, education and training must be available at more than the traditional classroom setting. This effort enhances current distance learning technology by developing a more realistic setting for education and training. Most distance learning is a one-way stream confined by bandwidth and cost. This R&D effort will bring to the Navy a secure, cost-effective technology for the more realistic "give and take" experiences in the classroom. Refinement of a standardized process and automated tool for distance learning courseware evaluation. Partnered with universities for research projects to access effectiveness of distance learning in critical areas such as language training, critical thinking and post training performance assessment. Conducting a study for proposed solutions for training management and tracking of the information assurance workforce. The focus of the Workforce Learning Community project is to construct a Career Development System for the government civilian workforce. The Career Development System will provide individualized pathways for government employees to attain upward mobility in selected career paths. Deliverables for the project are an Organization Assessment, Career Development System, and Job Task Analysis, including pathways to attain common KSTs and job-specific KSTs. Congressional adds were received in prior years.

9253 Space and Naval Warfare Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.147		
RDT&E Articles Quantity			

Web Centric Network Warfare (WECAN): 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.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9259 Naval Sea Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.779	2.600	
RDT&E Articles Quantity			

Conditioned Based Maintenance and Mission Readiness Assessment System: This is not a new start. These funds have been provided to accelerate the Navy Distance Support (DS) Program's implementation of the DoD CBM Plus directive (ASN (RD&A) Memorandum "Condition Based Maintenance Plus Policy" on 27 January 2003) and the concurrent achievement of Sea Power 21 logistics and maintenance metrics in support of Fleet readiness and rapid constitution for Naval missions. This includes funding for the annual assessment of logistics and maintenance Information Technology (IT), the annual preparation and revision of the DS CBM+ Technology Roadmap, as well as, modifications and enhancements to ship and shore logistic and maintenance information systems and infrastructures. This funding supports modification to existing software, hardware changes, contractual program management and Navy organic technical support to modify/enhance the NAVSEA HQ and Naval Surface Warfare Center systems and infrastructure. This will require the development, analysis and testing of IT prototypes at contractor facilities, Land Based Test Facilities at NSWCCD Philadelphia and NSWC Crane, and aboard Navy ships. Also supported is software development and upgrades for IT systems and infrastructure, to include COTS software packages/systems; developmental testing and initial operational test, evaluation and certification required prior to system acceptance/approval. The Mission Readiness Assessment System these funds have been provided to accelerate the Navy Distance Support Inititiative's development and implementation of technology and tools to transform processes in both the Navy's Human Capital and Supportability Functional Areas (ref: CFFC 02192Z NOV 04) and specifically in the Logistics, Maintenance, and Personnel Pillars. Future efforts will focus on Distance Support tools for transforming the Maintenace Pillar Tech Assist and Equipment Health Monitoring processes, as well as, the Logistics Pillar Total Asset Visibility processes both ashore and afloat through design, development and Fleet Experimentation. FY07 efforts will expand the Distance Support Mission Readiness Assessment tools to address the Assignments and Mission Packaging processes under the Personnel Pillar.Conditioned Based Maintenance (CBM) Congressional Add funding provides research and development efforts for pursuing CBM enabling technologies IAW processes emerging from commercial markets and develop those resources and procedures to transition these CBM enabling technology products into the maintenance and logistic processes and Fleet tools that are under the cognizance of the Navy Distance Support Program. Mission Readiness Assessment System represents a joint ONR and NAVSEA sponsor technology transition project to bring agent based decision support technology from ONR's Logistics Science and Technology (S&T) Programs into the Fleet through direct integration in the Navy's Distance Support Version 2 (DS Ver2) accelerated capabilities deployment initiative.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9404 Space and Naval Warfare Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.030		
RDT&E Articles Quantity			

Defense System Testing And Productivity Initiative: This RDT&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.
005-NISTP has developed a suite of tools that have become important to the Navy for the FORCEnet Implementation Toolset (FIT), the Office of the Secretary of Defense for the Unified Command Structure (UCS) and the Missile Defense Agency for the Section 804 plan. The suite of tools consists of:
(1) A Collaborative Knowledge Web (CK) now being demonstrated to the Department of Defense (DoD) Chief Information Officer (CIO), Mr. Linton Wells, for use as the first prototype for the Unified Command Structure.
(2) A Warfare Architecture Requirements (WAR) that has become part of the FIT.
(3) A web-based End-To-End Scenario tool that supports: modeling and simulation, dependency analysis, scenario patterns analysis, integration of human systems (HSI) into FORCEnet, construction of Thin Threads for the evaluation of FORCEnet, automatic generation Test Cases, Sequence Diagrams and Flow Charts, and deception scenarios.
(4) A Computational Intelligence (CI) engine that provides a common architecture for a set of related CI tools: neural networks, genetic algorithms, case based reasoning, compact data set, Information Fuzzy Networks (IFN) for data mining and graph theory based tools.
(5) A Section 804 plan, clearinghouse and an automated self-assessment web-based tool with verifiable artifacts now deployed with the Missile Defense Agency.

9405 Naval Air Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.028	2.200	
RDT&E Articles Quantity			

FIBER OPTICS COMPONENTS FOR MILITARY APPLICATIONS: Continue to research and develop electro optic components and the technology needed for high speed optical communications including support of wavelength division multiplexing (WDM), analog, and digital formats. Specific tasks include development of general purpose optical WDM local area network (LAN) networking architectures for aerospace avionics application and the components to support them. Continue to enhance the reliability of the basic cable plant, which is the foundation of the fiber optic network.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9406 Naval Air Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.126	1.000	
RDT&E Articles Quantity			

Maintenance Data Warehouse/NAVAIR DECKPLATE: The development of the Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) program is the next generation data warehouse for aircraft maintenance, flight and usage data. It provides a web-based interface to a single source of information currently being stored in multiple NALDA systems. Through the use of analysis, query and reporting tools the user has the capabilities to effectively obtain readiness data in a near real-time environment, as well as historical data for trend analysis and records reconstruction· DECKPLATE supports the mission of the warfighter who requires a single source of near real-time aviation data in which to base critical readiness decisions. This requires collecting data from authoritative sources into a data warehouse. Because the warfighter only needs to access one database, the time consuming task of collecting various pieces of data form various sources will be reduced and ultimately eliminated. This improves data quality, because it reduces the possibility of two systems providing identical data elements, but slightly different data. Data availability is improved through continuous near real-time feeds from the data sources, giving the warfighter the most current information to base decisions. In addition, this also accomplishes a reduction in legacy systems mandated by OPNAV.

9407 Naval Sea Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.513		
RDT&E Articles Quantity			

On-line Web-based learning Development Prog - Congressional Add to provide information technology development and evaluation of a State-of-the Art On-Line Web-Based Learning Development Program to serve the needs of the Defense workforce.

9408 Naval Sea Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.377	1.800	
RDT&E Articles Quantity			

Virtual Perimeter Monitoring System: Congressional Add provided for development of an integrated sensor tracking and monitoring capability that enables real-time protection of critical infrastructure through the use of various sensor technologies.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9599 Naval Air Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.642	2.600	
RDT&E Articles Quantity			

FIBER OPTICS COMPONENTS:
(U) Continue to research and develop electro optic components and the technology needed for high speed optical communications including support of wavelength division multiplexing (WDM), analog, and digital formats. Specific tasks include development of general purpose optical WDM local area network (LAN) networking architectures for aerospace avionics application and the components to support them. Continue to enhance the reliability of the basic cable plant, which is the foundation of the fiber optic network.

9602 Naval Sea Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.513		
RDT&E Articles Quantity			

Navy Readiness Response Center: Congressional Add funding provided to improve fleet support processes by reducing fleet workload and improving the shore support infrastructure. Specifically, these funds used to assess Navy troubled systems and develop processes for assisting the fleet in expedient resolution of these systems.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9777 Unknown	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.700	
RDT&E Articles Quantity			

Automatic Scheduling Tool for Joint Air Logistics

9778 Naval Air Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		10.000	
RDT&E Articles Quantity			

Converged Enterprise Resource Program - Funding is transferred from ERP Convergence FY06 O&M,N to support develoment efforts.

9779 UNSECNAV	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		5.100	
RDT&E Articles Quantity			

Digitization, integration,and analyst access of Naval Criminal Investigative Service (NCIS) records:
Funding for NCIS to modernize its capability for managing its electronic records and converting existing paper and microfilm-based records to electronic format.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9780 Unknown	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.700	
RDT&E Articles Quantity			

Integration of Logistics Information for Knowledge

9781 Unknown	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.700	
RDT&E Articles Quantity			

Internet Chat Relay Upgrade

9782 Bureau of Medicine and Surgery	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.000	
RDT&E Articles Quantity			

Next Generation Networking Electronic Medical Records

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605013N, NAVY IT DEV/MOD	9999, CONGRESSIONAL ADDS

B. Accomplishments/Planned Program

9783 Space and Naval Warfare Systems Command	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		10.800	
RDT&E Articles Quantity			

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 probvides effective enterprise-wide integrated information management/information technology (IM/IT) solutions related to system integration, development, testing and evaluation.
Funding to design a robust, secure, cost-effective technology for distance learning.

R-1 SHOPPING LIST - Item No. 136

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2006**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**				R-1 ITEM NOMENCLATURE 0605172N Multinational Information Sharing (MNIS)			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**$0.0**	**$21.5**	**$20.9**	**$21.7**	**$16.5**	**$17.3**	**$18.1**
3147 Multinational Information Sharing (MNIS)	**$0.0**	**$21.5**	**$20.9**	**$21.7**	**$16.5**	**$17.3**	**$18.1**
Quantity of RDT&E Articles							

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) The MNIS program supports the obligations made by the United States to its Allies at the Multi-National Interoperability Council (MIC) and maintains the capabilities provided by GRIFFIN, CENTRIXS, and CFBLNet. In 2004, the Secretary of Defense directed the establishment of the Multinational Information Sharing (MNIS) program. This direction includes the continuation of existing legacy systems supporting the MNIS concepts and includes the development of a transition plan to consolidate the legacy activities to meet the challenges of the dynamic requirements for appropriate information sharing. Prior to FY 2005, funding for these legacy actions was provided from Office of the Secretary of Defense (OSD) direct and from supplemental resources in FY 2004. Pending determination of the executive agent for MNIS activities, FY 2005 program funds were held by the Air Force. With the designation of the Navy as Executive Agent, the funds for DoD-wide consolidation of MNIS activities became the responsibility of the Navy. The Joint Program Office (JPO) resides in Defense Information Systems Agency (DISA).

(U) The MNIS structure provides oversight, planning and programming of MNIS solutions including the continuation of three key developmental and deployed programs: the Combined Enterprise Regional Information Exchange Systems (CENTRIXS), the Globally Reaching Interactive Fully Functional Information Network (GRIFFIN), and the Coalition Federated Battle Laboratories (CFBLNet). CENTRIXS provides Information Sharing and secured, reliable means of communications with participating coalition nations. Funding will provide for sustainment of services and information sharing. GRIFFIN provides regional nodes providing net-centric coalition services to SIPRNET users. Procures hardware/software, installation services for guarding technologies, enhancements for Information Assurance/Computer Network Defense Systems, and Services for expanded capabilities and increasing Communities of Interest. GRIFFIN will continue to improve architectural design of the multinational GRIFFIN infrastructure and services to support evolving operational architectures; pilot implementation and testing between national networks and supporting information sharing in a multi-tiered domain environment. CFBL Net provides enhanced measurement, auditing, analysis, and development and test capabilities to support interoperability, multinational and cross-domain initiatives.

MNIS will consolidate, sustain and meet operational requirements of these deployed systems and provide support for development of the standard MNIS and multinational community of interest (COI) services and applications. These enhancements will allow for the expansion of capabilities to support existing and new user communities, additional multi-domain capabilities and upgraded security.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0605172N Multinational Information Sharing (MNIS)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY 06 PB Submit:	0.000	33.557	30.760
FY07 PB Submit:	0.000	21.496	20.856
Total Adjustments	0.000	-12.061	-9.904
Summary of Adjustments			
Sec 8125 Revised Economic Assumptions		-0.153	
Congressional Action 1% Reduciton		-0.351	
Congressional Action Reduction in new start		-11.557	
Technical Adjustment to MNIS Transfer to O&MN			-15.900
Multinational Information Sharig			5.900
Economic Adjustments			0.096
Subtotal	0.000	-12.061	-9.904

(U) Schedule:

(U) Technical:

(U) D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
O&MN			15.900	15.146	14.488	13.864	13.271

(U) E. ACQUISITION STRATEGY:

In 2004, the Secretary of Defense directed the establishment of the Multinational Information Sharing (MNIS) program. This direction includes the continuation of existing legacy systems supporting the MNIS concepts and includes the development of a transition plan to consolidate the legacy activities to meet the challenges of the dynamic requirements for appropriate information sharing.
The DoN was designated the Executive Agent for the program beginning in FY2006, and FY2006 and out funding was transferred to the DoN. Prior to FY 2005, funding for these legacy actions was provided from Office of the Secretary of Defense (OSD) direct and from supplemental resources in FY 2004. In 2005, pending EA designation, funding was held by the Air Force. In FY2006, funding was transferred to the DoN.
In FY2006-7, the program will begin development of acquisition documentation for the initial phase of the MNIS integration.

(U) F. Major Performers:

TBD

(U) G. Metrics

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: **February 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0605172N MNIS					PROJECT NUMBER AND NAME 3147 Multinational Information Sharing (MNIS)		
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost			**$21.496**	**$20.856**	**$21.680**	**$16.487**	**$17.347**	**$18.106**
3147 Multinational Information Sharing (MNIS)			**$21.496**	**$20.856**	**$21.680**	**$16.487**	**$17.347**	**$18.106**
Quantity of RDT&E Articles								

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

(U) The MNIS program supports the obligations made by the United States to its Allies at the Multi-National Interoperability Council (MIC) and maintains the capabilities provided by GRIFFIN, CENTRIXS, and CFBLNet. In 2004, the Secretary of Defense directed the establishment of the Multinational Information Sharing (MNIS) program. This direction includes the continuation of existing legacy systems supporting the MNIS concepts and includes the development of a transition plan to consolidate the legacy activities to meet the challenges of the dynamic requirements for appropriate information sharing. Prior to FY 2005, funding for these legacy actions were provided from Office of the Secretary of Defense (OSD) direct and supplemental resources in FY 2004. Pending determination of the executive agent for MNIS activities, FY 2005 program funds were held by the Air Force. With the designation of the Navy as Executive Agent, the funds for DoD-wide consolidation of MNIS activities became the responsibility of the Navy. The Program Office (JPO) resides in Defense Information Systems Agency (DISA).

(U) The MNIS structure provides oversight, planning and programming of MNIS solutions including the continuation of three key developmental and deployed programs: the Combined Enterprise Regional Information Exchange Systems (CENTRIXS), the Globally Reaching Interactive Fully Functional Information Network (GRIFFIN), and the Coalition Federated Battle Laboratories (CFBLNet). CENTRIXS provides Information Sharing and secured, reliable means of communications with participating coalition nations. Funding will provide for sustainment of services and information sharing. GRIFFIN provides regional nodes providing net-centric coalition services to SIPRNET users. Procures hardware/software, installation services for guarding technologies, enhancements for Information Assurance/Computer Network Defense Systems, and Services for expanded capabilities and increasing Communities of Interest. GRIFFIN will continue to improve architectural design of the multinational GRIFFIN infrastructure and services to support evolving operational architectures; pilot implementation and testing between national networks and supporting information sharing in a multi-tiered domain environment. CFBL Net provides enhanced measurement, auditing, analysis, and development and test capabilities to support interoperability, multinational and cross-domain initiatives.

MNIS will consolidate, sustain and meet operational requirements of these deployed systems and provide support for development of the standard MNIS and multinational community of interest (COI) services and applications. These enhancements will allow for the expansion of capabilities to support existing and new user communities, additional multi-domain capabilities and upgraded security.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0605172N MNIS	3147 Multinational Information Sharing (MNIS)

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
MNIS	0.000	21.496	20.856
RDT&E Articles Quantity			

The DoN was designated the Executive agent for Multinational Information System in 2004, and FY2006 and out funding was transferred to the DoN.

MNIS - FY 2006: Provide engineering and technical support activities for the JPO and Executive agency appropriate for a pre-ACAT program. Begin development of acquisition documentation for the initial phase of the MNIS integration.
FY 2007: Continue to provide engineering and technical support for the JPO and EA and complete the development of acquisition documentation for the initial phase of MNIS.

GRIFFIN - FY 2006 and FY 2007: Provide continued support for the development, operation, and ongoing efforts to integrate, develop and support necessary enhancements to meet operational requirements. Research, design, development, prototyping and testing of collaborative capabilities is required for email, web, file-sharing, Chat, Common Operating Picture (COP), and Information Assurance (IA). Sustain Griffin and required network operations. Expansion of additional user communities, information domains, circuit costs, SIPRNet-wide coalition directory services, cross domain chat, Web and Computer operations.

CENTRIXS - FY 2006 and FY 2007: Continue providing Information Sharing and secured, reliable means of communications with participating coalition nations. Provide for sustainment of services and information sharing and provide support to expanded CENTRIX capabilities in deployed theaters.

CFBL Net - FY 2006 and FY 2007: Provide the infrastructure of choice for International Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Research, Development, Trial and Assessments to explore, promote and confirm Coalition/Combined capabilities for participants to support CFBLNet Initiatives with respect to interoperability, multinational and cross-domain solutions such as Multinational Experiments (MNE), Coalition Warrior Interoperability Demonstration (CWID), Coalition Aerial Surveillance and Reconnaissance (CEASAR), and Multinational Interoperability Council (MIC) peer interoperability testing targeted for Griffin Implementation.

R-1 SHOPPING LIST - Item No. 137

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)					DATE: **September 2**						**February 2006**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, BA-7**		PROGRAM ELEMENT 0605172N Multinational Information Sharing (MN			PROJECT NUMBER AND NAME 3147 Multinational Information Sharing (MNIS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MNIS Products						1.760		1.100				
Hardware						1.200		0.700				
Systems Engineering	C/VAR	Various	0.000	0.000		4.096	VAR	5.956	VAR	Continuing	Continuing	
Subtotal Product Development			0.000	0.000		7.056		7.756		Continuing	Continuing	
Remarks:												
Development Support						4.500		2.000				
Software Development						0.800		0.400				
Integrated Logistics Support						0.640		0.640				
Configuration Management						0.440		0.440				
Technical Data						0.300		0.450				
Studies and Analyses						1.400		2.000				
GFE						0.800		0.800				
Award Fees												
Subtotal Support			0.000	0.000		8.880		6.730		Continuing	Continuing	
Remarks:												
Developmental Test & Ev	VAR	Various	0.000	0.000		0.350		1.000			1.350	
Subtotal T&E			0.000	0.000		0.350		1.000		Continuing	Continuing	
Remarks:												
Program Management S	VAR	Various	0.000	0.000	Various	3.800	Various	4.200	Various	Continuing	Continuing	Continuing
Contractor Engineering Support						1.410		1.170				
Government Engineering Support												
Subtotal Management			0.000	0.000		5.210		5.370		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		21.496		20.856		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 137

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0605212N, CH-53X RDTE		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	99.314*	267.860	362.672	463.634	621.656	605.621	554.456	
H3059 CH-53X USMC HEAVY LIFT REPLACEMENT	99.314*	267.860	362.672	463.634	621.656	605.621	554.456	

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

The CH-53 is the only marinized heavy-lift helicopter in the world, and the CH-53E is the Marine Corps only heavy-lift helicopter. An improved CH-53E is needed to support the Marine Air-Ground Task Force heavy-lift requirements in the 21st century joint environment. The CH-53E mission is the conduct of expeditionary heavy-lift assault transport of armored vehicles, equipment and personnel to support distributed operations deep inland from a sea-based center of operations. The CH-53E "Super Stallion" was introduced into operations in 1980 as an upgrade version of the CH-53D. The CH-53E has developed performance degradation, fatigue life, interoperability, maintenance supportability, and other operational concerns. The CH-53X, an upgraded variant of the CH-53E, will provide improvements in range and payload performance, cargo handling and turn-around times, reliability and maintainability, interoperability, and survivability. The CH-53X program is required to provide full system capability, including shipboard compatibilities, at Initial Operational Capability (IOC), in Fiscal Year (FY) 2015. The CH-53X will replace the CH-53E, with Full Operational Capability (FOC) achieved by FY 2021.

FY05 RDT&E efforts focused on trade studies for the CH-53X. FY06-FY07 RDT&E efforts focus on CH-53X System Development and Demonstration (SDD) activities that accomplish a successful FY07 Preliminary Design Review and promote a successful FY09 Critical Design Review.

* FY 2005 Project Costs in the amount of $99.033 are from Program Element 0604212N.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605212N, CH-53X RDTE**	PROJECT NUMBER AND NAME H3059, CH-53X USMC HEAVY LIFT REPLACEMENT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
H3059 CH-53X USMC HEAVY LIFT REPLACEMENT	99.314*	267.860	362.672	463.634	621.656	605.621	554.456	
RDT&E Articles Qty					1	2	2	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The CH-53 is the only marinized heavy-lift helicopter in the world, and the CH-53E is the Marine Corps only heavy-lift helicopter. An improved CH-53E is needed to support the Marine Air-Ground Task Force heavy-lift requirements in the 21st century joint environment. The CH-53E mission is the conduct of expeditionary heavy-lift assault transport of armored vehicles, equipment and personnel to support distributed operations deep inland from a sea-based center of operations. The CH-53E "Super Stallion" was introduced into operations in 1980 as an upgrade version of the CH-53D. The CH-53E has developed performance
degradation, fatigue life, interoperability, maintenance supportability, and other operational concerns. The CH-53X, an upgraded variant of the CH-53E, will provide improvements in range and payload performance, cargo handling and turn-around times, reliability and maintainability, interoperability, and survivability. The CH-53X program is required to provide full system capability, including shipboard compatibilities, at Initial Operational Capability (IOC), in Fiscal Year (FY) 2015. The CH-53X will replace the CH-53E, with Full Operational Capability (FOC) achieved by FY 2021.

FY05 RDT&E efforts focused on trade studies for the CH-53X. FY06-FY07 RDT&E efforts focus on CH-53X System Development and Demonstration (SDD) activities that accomplish a successful FY07 Preliminary Design Review and promote a successful FY09 Critical Design Review.

* FY 2005 Project Costs in the amount of $99.033 are from Program Element 0604212N.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605212N, CH-53X RDTE**	PROJECT NUMBER AND NAME H3059, CH-53X USMC HEAVY LIFT REPLACEMENT

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
SYSTEMS ENGINEERING & PROJECT MANAGEMENT	15.843	28.083	30.685	
RDT&E Articles Qty				

In-house, field activities, and contractors support of Integrated Product Teams (IPTs) to allow for preparation of acquisition strategy, examination of equipment and avionics for the CH-53X, and development of acquisition documentation. Efforts include, but are not limited to, government development support, engineering support, program management support, systems engineering support, and travel for the CH-53X program.

	FY 2005	FY 2006	FY 2007	
INTEGRATED LOGISTICS SUPPORT	3.604	10.944	9.647	
RDT&E Articles Qty				

In-house, field activities, and contractors support of Integrated Logistics Support, including but not limited to planning, preparation, and management of data, support equipment, Government Furnished Equipment (GFE), and training elements of CH-53X development.

	FY 2005	FY 2006	FY 2007	
AIR VEHICLE DEVELOPMENT	79.868	228.833	322.340	
RDT&E Articles Qty				

Trade studies, risk reduction, design, development, and integration System Development and Demonstration (SDD) activities for the CH-53X air vehicle and its associated subsystems and components, and CH-53X ancillary systems.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 5**	**0605212N, CH-53X RDTE**	H3059, CH-53X USMC HEAVY LIFT REPLACEMENT

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Buget:	102.326	271.941	300.069
Current BES / President's Budget:	99.314	267.860	362.672
Total Adjustments	-3.012	-4.081	62.603
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-2.325	-2.843	
Congressional Increases			
Economic Assumtions		-1.238	1.703
Miscellaneous Adjustments	-0.687		60.900
Subtotal	-3.012	-4.081	62.603

Schedule: Schedule has matured as CH-53X Engineering Trade Studies have been completed and requirements have been defined. MS B was approved 1QFY06, MS C has moved to FY13 from FY12, with corresponding adjustments to key events between MS B and MS C.

Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605212N, CH-53X RDTE**	PROJECT NUMBER AND NAME H3059, CH-53X USMC HEAVY LIFT REPLACEMENT	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

E. ACQUISITION STRATEGY:

On 22 December 2005, the Defense Acquisition Executive reviewed the Heavy Lift Replacement (HLR) program for a Milestone (MS) B decision to enter to System Development and Demonstration (SDD). The HLR program is an Acquisition Category (ACAT) ID program, based on total estimated costs for Research, Development, Test and Evaluation (RDT&E), and Aircraft Procurement, Navy (APN). The HLR program will use a single-step acquisition approach to meet an Initial Operational Capability (IOC) of FY 2015.

Total aircraft quantities for the HLR program are 161 HLR helicopters. This includes one Ground Test Vehicle (GTV) and four Engineering Development Models (EDMs) for SDD.

Exhibit R-3 Cost Analysis (page 1) | DATE: February 2006

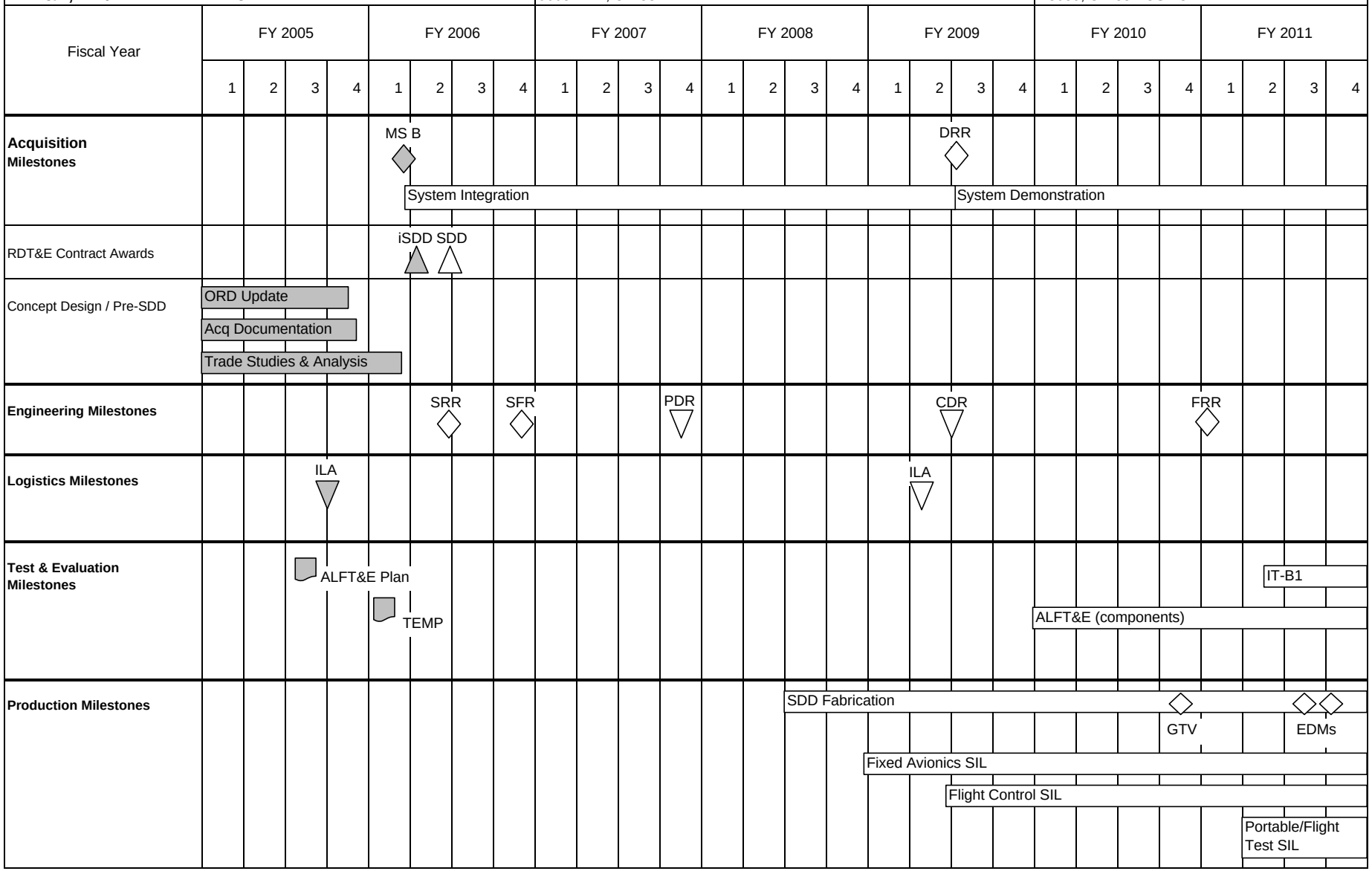
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA 5 | PROGRAM ELEMENT: 0605212N, CH-53X RDTE | PROJECT NUMBER AND NAME: H3059, CH-53X USMC HEAVY LIFT REPLACEMENT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	C-FFP	SIKORSKY AIRCRAFT CORPORATION, STR		79.868	12/04	228.833	1/06	322.340	TBD	2,731.694	3,362.735	TBD
Systems Engineering	C-FFP	SIKORSKY AIRCRAFT CORPORATION, STR	2.085								2.085	2.085
SUBTOTAL PRODUCT DEVELOPMEN			2.085	79.868		228.833		322.340		2,731.694	3,364.820	
Remarks:												
SUPPORT												
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD	.665	1.293	11/04	7.634	1/06	8.534	11/06	263.900	282.026	
Studies & Analyses	VARIOUS	VARIOUS	3.572	2.310	12/04	2.500	1/06				8.382	
SUBTOTAL SUPPORT			4.237	3.604		10.134		8.534		263.900	290.408	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	VARIOUS	VARIOUS								265.800	265.800	
Live Fire Test & Eval	VARIOUS	NAWCWD, CHINA LAKE CA				.810	1/06	1.113	11/06	13.323	15.246	
SUBTOTAL TEST & EVALUATION						.810		1.113		279.123	281.046	
Remarks:												
MANAGEMENT												
Contractor Eng Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD	.530	1.826	11/04	1.750	11/04	2.100	11/04		6.206	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	1.833	11.111	11/04	19.200	11/05	21.318	11/06	203.549	257.011	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD	.805	2.780	11/04	6.778	11/05	6.870	11/06	45.880	63.113	
Travel	WX	NAWCAD, PATUXENT RIVER MD	.030	.125	11/04	.355	11/05	.397	11/06	5.589	6.496	
SUBTOTAL MANAGEMENT			3.198	15.843		28.083		30.685		255.018	332.826	
Remarks:												
Total Cost			9.520	99.314		267.860		362.672		3,529.735	4,269.101	
Remarks:												

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605212N, CH-53X RDTE	H3059, CH-53X USMC HLR



CLASSIFICATION: UNCLASSFIED

Exhibit R-4a, Schedule Detail				DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-5**	PROGRAM ELEMENT 0605212N, CH-53X RDTE			PROJECT NUMBER AND NAME H3059, CH-53X USMC HLR			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ORD Update	1Q-4Q						
Acquisition Documentation	1Q-4Q						
Trade Studies & Analysis	1Q-4Q	1Q					
System Requirements Review		2Q					
Alternative Live Fire T&E (ALFT&E) Plan	3Q						
Test & Evaluation Master Plan (TEMP)		1Q					
Independent Logistics Assessment (ILA)	4Q				2Q		
Milestone (MS) B		1Q					
System Development and Demonstration (SDD) phase		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Initial System Development & Demonstration (iSDD) Contract Award (KA)		2Q					
System Development & Demonstration (SDD) KA		2Q					
System Functional Review (SFR)		4Q					
Preliminary Design Review (PDR)			4Q				
Critical Design Review (CDR)					2Q		
Design Readiness Review (DRR)					3Q		
Flight Readiness Review (FRR)							1Q
Integrated Test & Evaluation (IT-B1)							2Q-4Q
SDD Fabrication				3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Ground Test Vehicle (GTV)						4Q	
Engineering Development Model (EDM)							3Q-4Q
Fixed Avionics System Integration Laboratory (SIL)					1Q-4Q	1Q-4Q	1Q-4Q
Flight Control SIL					3Q-4Q	1Q-4Q	1Q-4Q
Portable/Flight Test Avionics SIL							2Q-4Q

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5						R-1 ITEM NOMENCLATURE 0605500N, MULTI-MISSION MARITIME AIRCRAFT		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	470.893	949.561	1,131.655	836.699	1,085.407	1,082.761	723.846	
2696 MULTI-MISSION MARITIME AIRCRAFT	470.893	949.561	1,131.655	836.699	1,085.407	1,082.761	723.846	

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Multi-mission Maritime Aircraft (MMA) program provides the replacement system (s) for the aging P-3 aircraft. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance" and the requirements for the program are defined in the MMA Operational Requirements Document (ORD)/ Capability Development Document (CDD), validated and approved by JROC on 08 December 2003. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 March 2000. Concept exploration activities began in June 2000 under Program Element 0702207N / Project Unit W2737. Approval to enter Component Advanced Development (CAD) was attained from the Overarching Integrated Product Team on 18 January 2002 and the Milestone Decision Authority (USD(AT&L)) approved the program Acquisition Strategy on 8 February 2002. Approval to enter System Demonstration and Development (SDD) was attained at the Defense Acquisition Board (DAB) on 28 May 2004. At the DAB approval was granted to award the SDD contract. The contract was awarded to Boeing on 14 June 2004.

The primary objectives of SDD are to: perform the system detailed design, develop and produce Systems Integration Labs, develop and build ground and flight test articles and prepare for Milestone C. Seven flight test aircraft will be built during SDD. These test aircraft will be grouped into two stages based on which phase of the test program the aircraft will support. SDD Stage I flight test aircraft (FY06/Qty-3) will support initial combined Developmental/Operational Testing (DT/OT). SDD Stage II flight test aircraft (FY08/Qty-4) will support the completion of combined DT/OT and Initial Operational Test and Evaluation (IOT&E) after being updated to the production configuration. The SDD contract includes the development and initial builds of training devices to support IOT&E. MMA plans to enter Production and Deployment (PD) in the 3rd quarter of FY10 after completing the Milestone C DAB.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605500N, MULTI-MISSION MARITIME AIRCRAFT**	PROJECT NUMBER AND NAME 2696, MULTI-MISSION MARITIME AIRCRAFT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2696 MULTI-MISSION MARITIME AIRCRAFT	470.893	949.561	1,131.655	836.699	1,085.407	1,082.761	723.846	
RDT&E Articles Qty		3		4				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Multi-mission Maritime Aircraft (MMA) program provides the replacement system(s) for the aging P-3 aircraft. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance" and the requirements for the program are defined in the MMA Operational Requirements Document (ORD)/ Capability Development Document (CDD), validated and approved by JROC on 08 December 2003. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 March 2000. Concept exploration activities began in June 2000 under Program Element 0702207N / Project Unit W2737. Approval to enter Component Advanced Development (CAD) was attained from the Overarching Integrated Product Team on 18 January 2002 and the Milestone Decision Authority (USD(AT&L)) approved the program Acquisition Strategy on 8 February 2002. Approval to enter System Demonstration and Development (SDD) was attained at the Defense Acquisition Board (DAB) on 28 May 2004. At the DAB approval was granted to award the SDD contract. The contract was awarded to Boeing on 14 June 2004.

The primary objectives of SDD are to: perform the system detailed design, develop and produce Systems Integration Labs, develop and build ground and flight test articles and prepare for Milestone C. Seven flight test aircraft will be built during SDD. These test aircraft will be grouped into two stages based on which phase of the test program the aircraft will support. SDD Stage I flight test aircraft (FY06/Qty-3) will support initial combined Developmental/Operational Testing (DT/OT). SDD Stage II flight test aircraft (FY08/Qty-4) will support the completion of combined DT/OT and Initial Operational Test and Evaluation (IOT&E) after being updated to the production configuration. The SDD contract includes the development and initial builds of training devices to support IOT&E. MMA plans to enter Production and Deployment (PD) in the 3rd quarter of FY10 after completing the Milestone C DAB.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0605500N, MULTI-MISSION MARITIME AIRCRAFT**	PROJECT NUMBER AND NAME 2696, MULTI-MISSION MARITIME AIRCRAFT

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	16.745	24.315	32.997	
RDT&E Articles Qty				

Test, GFE, Engineering and Technical Development for the CAD and SDD contracts. Effort includes: analysis of contracted deliverables; evaluation of an unmanned aerial vehicle (UAV) in the maritime role (technical and cost analysis), refine UAV system integration requirements, and evaluate UAV concept of operations; direct technical and logistic support of system development and delivery; assessment of contractors readiness to proceed in design/development; evaluate contract cost, schedule, and performance; test preparations, provide necessary government furnished equipment and test articles, and conduct testing; risk assessment/mitigation; program control; performance status; and plan and prepare for future Milestone/Decision Reviews and develop associated documentation. Modeling & Simulation tools will be developed to assess proposed risk mitigations and to support Developmental Test and Evaluation. Work effort initiated will continue until the end of the SDD contract planned in FY13.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	454.148	925.246	1,098.658	
RDT&E Articles Qty		3		

Initiate System Development and Demonstration (SDD) phase. Work effort started in FY04 at the completion of the CAD contracts. Scope of effort includes: Design, develop, build, and test MMA aircraft, avionics, mission systems, Systems Integration Lab(s), wind tunnel test models, ground and flight test articles (SDD Stage I, FY06, Qty3; SDD Stage II, FY08, Qty4), other test articles, integration of UAV Tactical Control System (TCS), modifications to the Tactical Support Center (TSC), and development and initial builds of training devices to support IOT&E. Conduct the Integrated Baseline Review (IBR) and prepare for and conduct technical reviews such as the System Functional Review (SFR), Preliminary Design Review (PDR), and Critical Design Review (CDR). Work effort initiated in FY04 and will continue until the end of the SDD contract planned in FY13.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605500N, MULTI-MISSION MARITIME AIRCRAFT**	PROJECT NUMBER AND NAME 2696, MULTI-MISSION MARITIME AIRCRAFT	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	490.249	964.067	1,138.465
Current President's Budget:	470.893	949.561	1,131.655
Total Adjustments	-19.356	-14.506	-6.810
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-12.684	-10.116	
Congressional Increases			
Economic Assumptions		-4.390	5.916
Miscellaneous Adjustments	-6.672		-12.726
Subtotal	-19.356	-14.506	-6.810

Schedule: Not applicable.

Technical: Not applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0605500N, MULTI-MISSION MARITIME AIRCRAFT**	PROJECT NUMBER AND NAME 2696, MULTI-MISSION MARITIME AIRCRAFT	

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN PE 0204251N BLI 019300 MMA					111.007	1,792.609	2,062.681	19,877.824	23,844.121
APN BLI 060510 Initial Spares - MMA						41.720	47.424	971.056	1,060.200
MILCON PE 0805376 - Project P-146 & P-147		5.800	14.090					120.010	139.900

E. ACQUISITION STRATEGY: The Multi-Mission Maritime Aircraft (MMA) Milestone 0 was approved 22 March 2000 and the resulting Acquisition Decision Memorandum directed MMA to begin the CE phase consisting of an AoA and industry concept studies. These activities began 3Q/01 and were funded under Program Element 0702207N / Project Unit W2737. Approval to enter Component Advanced Development (CAD) 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 CAD was 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 occurred at MS B decision review on 28 May 2004. The contract was awarded to Boeing on 14 June 2004. The SDD phase is being used to design, develop and test the MMA system. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance" and the requirements for the program are defined in the MMA Operational Requirements Document (ORD)/ Capability Development Document (CDD), validated and approved by JROC on 08 December 2003. MMA IOC objective is FY 2013.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0605500N, MULTI-MISSION MARITIME AIRCRAFT				PROJECT NUMBER AND NAME 2696, MULTI-MISSION MARITIME AIRCRAFT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fee for Primary HW	C-CPAF	THE BOEING COMPANY, SEATTLE, WA		5.238	1/30/2005	44.519	1/1/2006	58.214	10/1/2006	294.576	402.547	402.547
Info. Assurance	WX	NAWCAD, PATUXENT RIVER MD				.200	1/1/2006	.350	11/1/2006	1.411	1.961	
Primary HW Dev - Boeing	C-CPAF	THE BOEING COMPANY, SEATTLE, WA	43.727	446.510	1/30/2005	864.759	1/1/2006	1,021.900	10/1/2006	3,580.095	5,956.991	5,956.991
Primary HW Dev - SPAWAR	WX/RX	SPAWARSYSCOM, SAN DIEGO CA		2.400	2/1/2005	2.900	2/1/2006	5.616	2/1/2007	22.156	33.072	
Systems Eng - TBD	WX	NAWCAD, PATUXENT RIVER MD				12.868	1/30/2006	12.578	11/1/2006	71.032	96.478	
All other PY Product Development Cost	VARIOUS	VARIOUS	70.538								70.538	70.538
SUBTOTAL PRODUCT DEVELOPMENT			114.265	454.148		925.246		1,098.658		3,969.270	6,561.587	

Remarks:

SUPPORT												
Int. Log Gov	WX	NAWCAD, PATUXENT RIVER MD	1.800	.600	11/1/2004	.692	1/30/2006	5.600	11/1/2006	31.379	40.071	
SAE (NON-FFRDC)	C-FFP	SPAWARSYSCOM, SAN DIEGO CA		2.224	1/30/2005	1.787	1/30/2006	.572	1/30/2007	3.204	7.787	
Tech Dev Gov	WX	NAWCAD & WD / SPAWAR	26.973	10.450	12/30/2004			8.565	11/1/2006	47.995	93.983	
All other PY Support Cost	VARIOUS	VARIOUS	4.868								4.868	
SUBTOTAL SUPPORT			33.641	13.274		2.479		14.737		82.578	146.709	

Remarks:

TEST & EVALUATION												
Dev Test & Eval - TBD	WX	VARIOUS				5.487	1/1/2006	4.567	11/1/2006	84.716	94.770	
GFE & GFI	VARIOUS	VARIOUS				2.000	3/3/2006			134.298	136.298	136.298
LFT&E - Gov	WX	VARIOUS				5.681	11/30/2005	2.767	11/1/2006	11.710	20.158	
Oper Test & Eval - TBD	WX	VARIOUS				.200	2/3/2006			15.960	16.160	
Test Assets - TBD	VARIOUS	VARIOUS				4.902	3/3/2006				4.902	
SUBTOTAL TEST & EVALUATION						18.270		7.334		246.684	272.288	

Remarks:

MANAGEMENT												
Eng & Tech Serv (NON-FFRDC)	C-T&M	R B C INCORPORATED, ALEXANDRIA, VA	5.881	1.380	1/30/2005	1.352	1/30/2006	1.390	1/30/2007	11.328	21.331	21.331
Mgnt Suppt Serv (NON-FFRDC)	C-T&M	R B C INCORPORATED, ALEXANDRIA, VA		.920	12/30/2004	.902	12/30/2005	.926	12/30/2006	4.862	7.610	7.610
Program Mgmt Support	WX	NAWCAD, PATUXENT RIVER MD	6.122	.991	1/30/2005	1.051	1/30/2006	8.315	11/1/2006	50.125	66.604	
Travel - EOB	TO	NAWCAD, PATUXENT RIVER MD	.480	.180	11/30/2004	.261	11/30/2005	.295	11/30/2006	2.065	3.281	
All other PY Management Cost	VARIOUS	VARIOUS	8.330								8.330	
SUBTOTAL MANAGEMENT			20.813	3.471		3.566		10.926		68.380	107.156	

Remarks:

Total Cost			168.719	470.893		949.561		1,131.655		4,366.912	7,087.740	

Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: 0605500N MULTI-MISSION MARITIME AIRCRAFT

PROJECT NUMBER AND NAME: 2696 MULTI-MISSION MARITIME AIRCRAFT

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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			MS B													DRR							IPR				MS C						
Acquisition Phases	CAD																															
MMA System										PDR					CDR																	
Contract Awards RDT&E, N			SDD (Includes Stage I)														SDD Stage II aircraft																
Production																					AP for LRIP #1				LRIP #1 & AP LRIP #2				LRIP #2 & AP LRIP #3			
Test & Evaluation Milestones Ground Testing										Ground Testing																						
Flight Test Program																								DT/OT Flight Testing								
Production																											LRIP					
Deliveries SDD Test Aircraft																								SDD Stage I aircraft 1	1	1		SDD Stage II aircraft 2	1	1	

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0605500N MULTI-MISSION MARITIME AIRCRAFT				PROJECT NUMBER AND NAME 2696 MULTI-MISSION MARITIME AIRCRAFT			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Component Advanced Development	1Q-3Q							
Milestone B DAB (MS B)	3Q							
System Development and Demonstration Contract Award	3Q							
System Development and Demonstration Phase	3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Ground Testing			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Preliminary Design Review (PDR)			2Q					
Critical Design Review (CDR)				3Q				
Design Readiness Review (DRR)				4Q				
SDD Stage II Test Aircraft Contract award					2Q			
Interim Program Review (IPR)						3Q		
Advance Procurement (AP) for LRIP#1 Contract award						3Q		
Developmental Testing/Operational Testing (Flight Test)						4~~Q~~	1Q-4Q	1Q-4Q
Milestone C							3Q	
LRIP Lot #1 and AP LRIP#2 Contract award							3Q	
Low Rate Initial Production							3Q-4Q	1Q-4Q
LRIP Lot #2 and AP LRIP#3 Contract award								2Q

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification | DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 5

R-1 ITEM NOMENCLATURE
PE 0304785N Tactical Cryptologic Systems

COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost				**23.526**	**18.379**	**17.676**	**15.688**	**16.059**
2134/SHIPBOARD IW EXPLOIT				**20.522**	**15.378**	**15.675**	**15.688**	**16.059**
3165/AUTOMATIC IDENTIFICATION SYSTEM (AIS)				**3.004**	**3.001**	**2.001**		
Quantity of RDT&E Articles								

Shipboard IW migrates from PE 0604721N (Battle Group Passive Horizon Extension System) beginning FY07.

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Shipboard Information Warfare (IW) 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 Communications Data Link System (CDLS) the Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed IMINIT (Imagery Intelligence). These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

Automatic Identification System (AIS) is an International Maritime VHF Communication system that allows any ship to exchange information (machine to machine) on Navigation (Position, Course, Speed, etc), Ship Info (Ship Name, Call Sign, Length/Beam), Cargo Info (Draft, Type, Destination, Route, ETA), and Messaging (Safety, Text). This technology will improve capability in three diverse areas: (a) Situational Awareness/Common Operational Picture (COP) (b) Navigation/Safety of Ship and (c) Other intelligence gathering/correlation. RDT&E will fund the integration of Commercial off-the-shelf (COTS) AIS equipment into the existing Global Command and Control - Maritime (GCCS-M)/COP, Navigation Sensor System Interface (NAVSSI) navigation and bridge capabilities surface search / weapons systems and intelligence / cryptologic capabilities in support of AIS Phase 2 procurement efforts.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA5**	R-1 ITEM NOMENCLATURE PE 0304785N Tactical Cryptologic Systems

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY2006 President's Budget	0	0	0
FY2007 President's Budget	0	0	23.526
Total Adjustments	0.000	0.000	23.526
Summary of Adjustments			
Realigns Shipboard IW Exploit R&D project to correct PE			22.186
FORCEnet AIS			3.000
Contract Support Reduction			-1.746
NWCF Civpers Efficiencies			-0.048
Inflation Adjustment			0.099
Fuel Price Adjustments			0.002
Civpers Pay Raise Rate Change			0.033
Subtotal	0.000	0.000	23.526

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134/SHIPBOARD IW EXPLOIT	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**0.000**	**0.000**	**20.522**	**15.378**	**15.675**	**15.688**	**16.059**	
RDT&E Articles Qty								

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

The Shipboard Information Warfare line includes the following programs: Ships Signal Exploitation Equipment (SSEE), the Program of Record that executes the Maritime Cryptologic Systems for the 21st Century (MCS 21) and Communications Data Link System (CDLS) the Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed IMINIT (Imagery Intelligence). These systems provide the Battle Group with real time Indications and Warnings (I & W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.050	
RDT&E Articles Quantity				

Communications Data Link- System (CDLS)

FY07 - Continue Design and Development of CDLS Interfaces with Automated Data Network System (ADNS). Continue design and develop CDLS Spiral 1 Advanced Networking Technology Insertion Kit. Develop engineering Change Proposal (ECP) for CDLS Spiral 1 Advanced Networking Technology Insertion Kit for CDLS Interfaces with ADNS. Continue Vendor Interoperability and Integration Testing with emerging Navy sensor systems such as BAMS, MMA, GHMD, F/A-18 SHARP, P-3C AIP, and EP-3E Multi-int systems.

Note: Name change from CDL-N Block 1 to CDLS.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	14.940	
RDT&E Articles Quantity				

Ship Signal Exploitation Equipment

FY07 - Continue to expand Signals of Interest (SOI) processing capability to priority signal sets. Fully test improved software. Modify Cryptologic On-Line Trainer (COLT) server to upgrade current software releases. Continue development and integration of Cryptologic Unified Build (CUB) software. Continue SSEE Inc F development to support Engineering Development Models (EDMs), system design, integration, testing and remoting of manned and unmanned platforms.

Note: CUB and COLT will be migrated into SSEE Program beginning FY 06.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134/SHIPBOARD IW EXPLOIT

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.512	
RDT&E Articles Quantity				

Specific Emitter Identification (SEI)

FY07 - Continue reprogramming of existing fielded SEI systems with new algorithms and software. Continue improvements to network based SEI data distribution and utilization. Continue SEI software enhancements to maximize automation of SEI collection & reporting. Continue integration of geolocation, SEI, and other data. Continue incorporation of SEI into Electronic intelligence (ELINT) and the overall Navy EW architecture with the goal of SEI being absorbed into ELINT. Continue software enhancements in Global Command and Control System - Maritime (GCCS-M), GALE Lite, and other fielded systems to support new SEI capabilities and data types. Continue to pursue enhanced SEI algorithms and techniques, SEI-based deinterleaving, and other SEI applications. Includes support for Maritime Domaine Awareness.

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.020	
RDT&E Articles Quantity				

Antenna & RF Distribution

FY07 - Continue development of antenna & RF tools to enhance future capabilities via new technologies, EDM development, testing and certification.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134/SHIPBOARD IW EXPLOIT

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPN Line 2360	68.454	58.991	70.782	67.333	91.484	104.013	87.937

(U) D. ACQUISITION STRATEGY:

Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to SPAWAR Systems Center (SSC) - Charleston, SSC-San Diego and miscellaneous contractors, with management oversight by SPAWAR.

(U) E. MAJOR PERFORMERS:

N/A

(U) F. METRICS:

Earned Value Management (EVM) is used for metrics reporting and risk management.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0304785N Tactical Cryptologic Systems	2134/SHIPBOARD IW EXPLOIT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various						9.845	12/06	Continuing	Continuing	Continuing
Ancillary Hardware Development											0.000	0.000
Systems Engineering	Various	Various						2.700		Continuing	Continuing	Continuing
Training Development	Various	Various						0.100		Continuing	Continuing	Continuing
Licenses											0.000	
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development								12.645		Continuing	Continuing	Continuing

Remarks:

Development Support											0.000	0.000
Software Development	Various	Various						4.428		Continuing	Continuing	Continuing
Training Development											0.000	0.000
Integrated Logistics Support	Various	Various						0.145		Continuing	Continuing	Continuing
Configuration Management	Various	Various						0.125		Continuing	Continuing	Continuing
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support								4.698		Continuing	Continuing	Continuing

Remarks:

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: February 2006

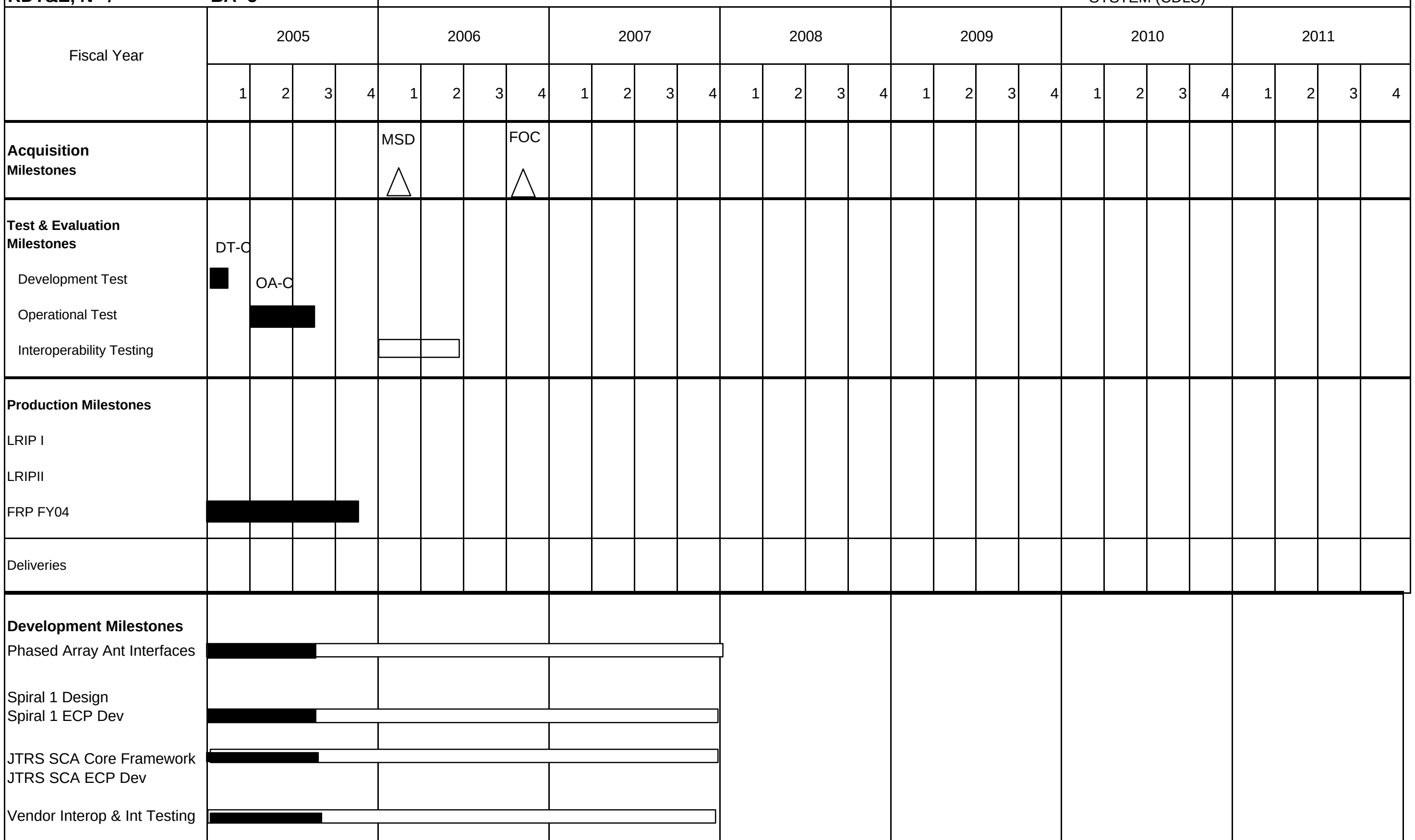
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	PE 0304785N Tactical Cryptologic Systems	2134/SHIPBOARD IW EXPLOIT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various						0.680	12/06	Continuing	Continuing	Continuing
Operational Test & Evaluation	Various	Various						0.250		Continuing	Continuing	Continuing
Live Fire Test & Evaluation											0.000	0.000
Test Assets	Various	Various						0.150		Continuing	Continuing	Continuing
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E								1.080		Continuing	Continuing	Continuing
Remarks:												
Contractor Engineering Support											0.000	0.000
Government Engineering Support											0.000	0.000
Program Management Support	Various	Various						1.947		Continuing	Continuing	Continuing
Travel	Various	Various						0.152		Continuing	Continuing	Continuing
Subtotal Management								2.099		0.000	2.099	0.000
Remarks:												
Total Cost			0.000	0.000	0.000	0.000	0.000	20.522	0.000	Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/COMMUNICATIONS DATA LINK-SYSTEM (CDLS)



R-1 SHOPPING LIST - Item No. 140

KLSERDUG,: PLJUDWHV IURP 3(1 %DWWOH* URXS 3DVVLYH+RUL]RQ([WHQVLRQ6\VWHP EHJLQQLQJ)<
Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT PE 0304785N Tactical Cryptologic Systems				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/COMMUNICATIONS DATA LINK-SYSTEM (CDLS)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Material Support Date		Q1						
Full Operational Capability		Q4						
Developmental Testing (DT)	Q1							
Operational Analysis	Q2-Q3							
Interoperability Testing		Q1-Q2						
Phased Array Antenna Interfaces	Q1-Q4	Q1-Q4						
Spiral 1 Design	Q1-Q4		Q1-Q4					
Spiral 1 ECP Dev			Q4					
JTRS SCA Core Framework	Q1-Q4							
Vendor Interoperability and Integration Testing	Q1-Q4	Q1-Q4	Q1-Q4					

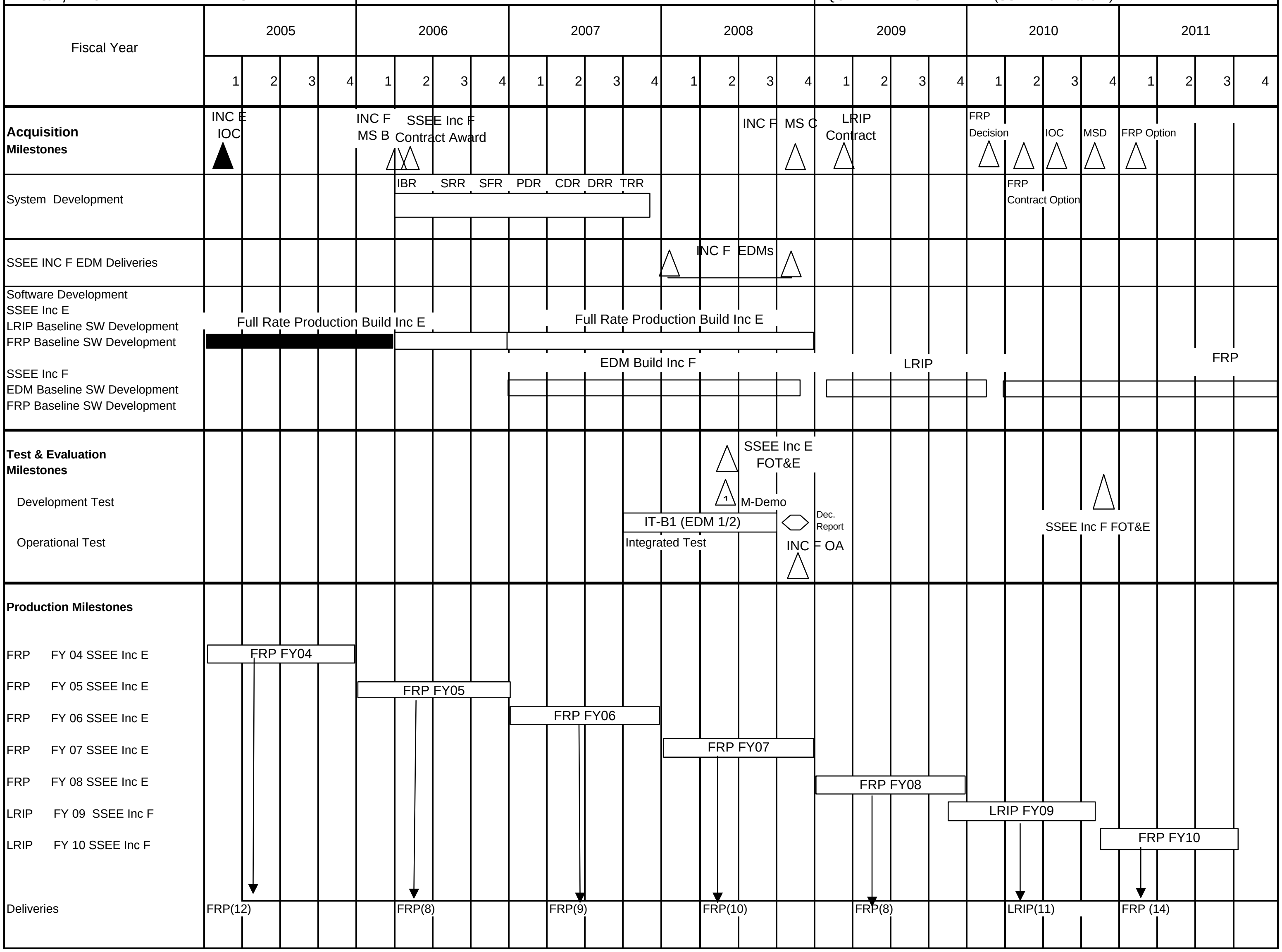
R-1 SHOPPING LIST - Item No. 140

KLSERDUG,: P LJUDWMV IURP 3(1 %DWWH URXS 3DVVLYH+RUL]RQ([WQVLRQ6\VWP EHJLQQLQJ)<*

Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile **SHIPS SIGNAL EXPLOITATION EQUIPMENT INCREMENT E (SSEE Incr E)**		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL EXPLOITATION EQUIPMENT INCREMENT E (SSEE Incr E and F)



KLSERDUG,: PLJUDWHVIURP 3(1 %DWDH* URXS 3DVVLYH+RUL]RQ(\WHQVLRQ6\VWHP EHJLQQLQJ)<

Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0304785N Tactical Cryptologic Systems				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL EXPLOITATION EQUIPMENT INCR E (SSEE Incr E)			
Schedule Profile	FY2005	FY2006	FY2007	FY 2008	FY 2009	FY 2010	FY 2011	
Increment E								
Follow-On Test & Evaluation (FOTE)				Q2				
IOC	Q1							
Full Rate Production	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4				
Pre-Planned Improvements (P3I)	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4				
Increment F								
Milestone II (MS B)		Q2						
Contract Award		Q2						
IBR/SBR/SFR/PDR/CDR/DRR/TRR		Q2-Q4	Q1-Q4					
Developmental Testing				Q2-Q4				
Operational Testing					Q4			
EDM SSEE Delivery - Ship				Q1-Q4				
Milestone III (MS C)LRIP/FRP Decision				Q4				
Production Start						Q1		
Material Support Date						Q4		
IOC						Q3		
LRIP					Q1			
Full Rate Production (FRP)						Q2		
Follow-On Test & Evaluation (FOT&E)							Q1	

R-1 SHOPPING LIST - Item No. 140

SSEE is a spiral development program.

FY09 will introduce a future Increment with new antenna design and P3I.

**** Shipboard IW migrates from PE 0604721N (Battle Group Passive Horizon Extension System) beginning FY07. Schedule data for PE 0304785N included in this exhibit for presentation purposes only.***

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																													DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**					PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems																PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/ANTENNA RF DISTRIBUTION (ARFD)											
Fiscal Year	2005				2006				2007				2008				2009				2010				2011				
	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	Award Contract ▲																												
Prototype Phase	■	■	■	■	■	■	■	▭	▭	▭	▭	▭																	
System Development				SDR ▲				SDR △				SDR △																	
EDM Delivery Four EDMs				EDM ▲				EDM △				EDM △																	
Test & Evaluation Milestones FAT Developmental Test			FAT ▲				FAT △	DT △			FAT △																		
Production Milestones Deliver Design Package to SSEE																													
Deliveries																													

R-1 SHOPPING LIST - Item No. 140

**** Shipboard IW migrates from PE 0604721N (Battle Group Passive Horizon Extension System) beginning FY07.***

Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

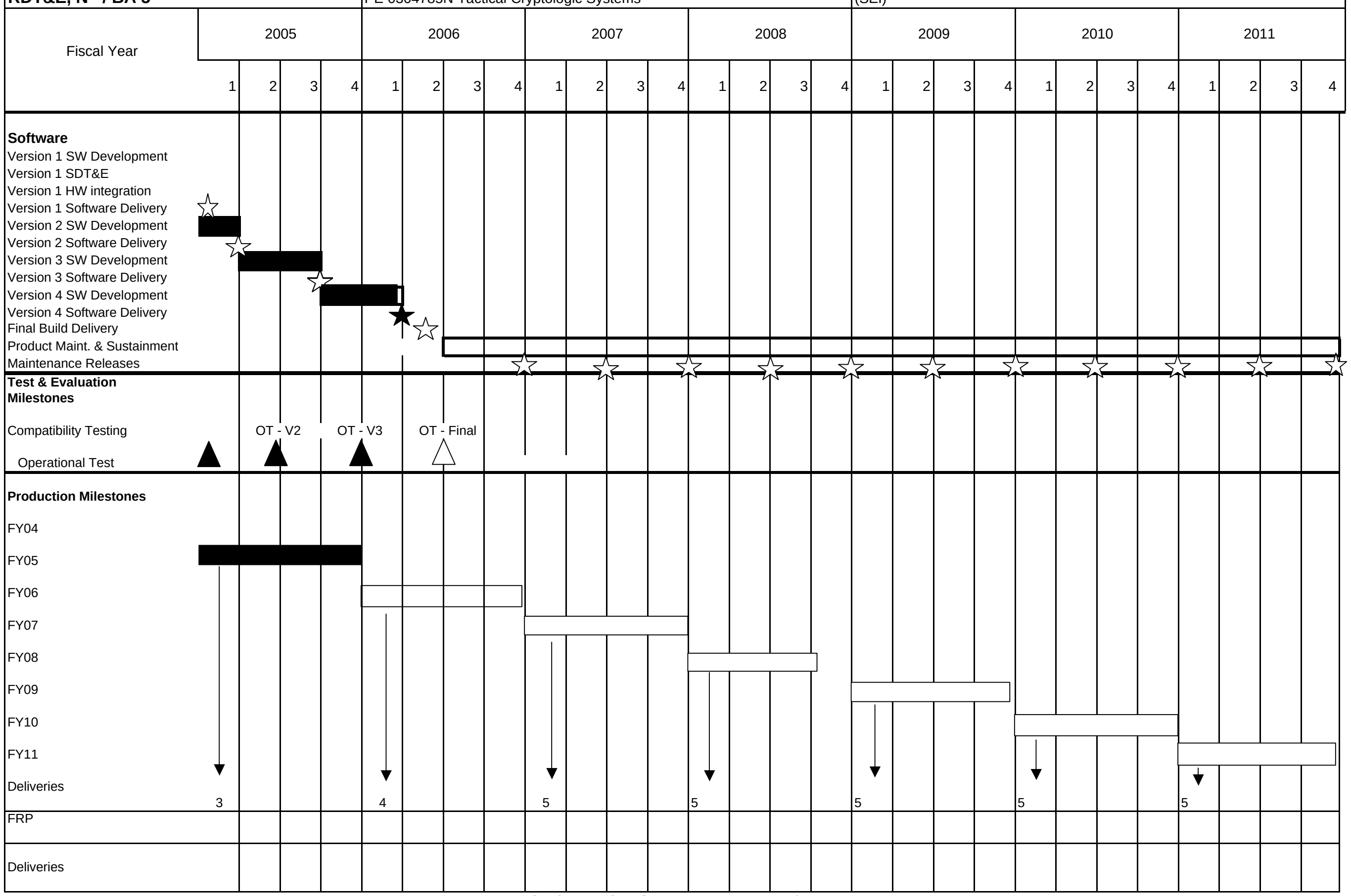
Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0304785N Tactical Cryptologic Systems				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/ANTENNA RF DISTRIBUTION (ARFD)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Contract Award	1Q							
Prototype Phase	Q1-Q4	Q1-Q4	Q1-Q4					
EDM Delivery	4Q	4Q	4Q					
System Design Review (SDR)	4Q	4Q	4Q					
Factory Acceptance Testing	3Q	3Q	3Q					
Developmental Test		4Q						
Deliver Design Package to SSEE				1Q				

R-1 SHOPPING LIST - Item No. 140

**** Shipboard IW migrates from PE 0604721N (Battle Group Passive Horizon Extension System) beginning FY07. Schedule data for PE 0304785N included in this exhibit for presentation purposes only.***

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)



R-1 SHOPPING LIST - Item No. 140

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0304785N Tactical Cryptologic Systems				PROJECT NUMBER AND NAME 2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
SURPAS Development								
Phase 1 - Software Delivery								
Phase 2 - Software Delivery	Q1							
Phase 3 - Software Delivery	Q2-3							
Phase 4 - Software Delivery	Q4	Q1						
Technical Information Meeting	Q1-Q4	Q1-Q4						
Software Delivery	Q2 & Q4	Q2						
Software Maintenance Release			Q1 & Q3	Q1 & Q3	Q1 & Q3	Q1 & Q3	Q1 & Q3	
Hardware/software compatibility testing	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	
Test Readiness Review (TRR)	Q2 & Q4	Q2						
Developmental Testing (DT-IIA)	Q1-Q4	Q1-Q2						
Logistics								
Operational Testing (OT-IIA)	Q2 & Q4	Q2						
Start Low-Rate Initial Production I (LRIP I)		Q3						
IOC		Q3						

R-1 SHOPPING LIST - Item No. 140

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Schedule data for PE 0304785N included in this exhibit for presentation purposes only.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE 0304785N Tactical Cryptologic Systems	3165 AUTOMATIC IDENTIFICATION SYSTEM (AIS)

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	**0.000**	**0.000**	**3.000**	**2.604**	**1.822**	**0.000**	**0.000**	
RDT&E Articles Qty								

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

AUTOMATIC IDENTIFICATION SYSTEM (AIS): AIS is an International Maritime Very High Frequency (VHF) Communication system that allows any ship to exchange information (machine to machine) on Navigation (Position, Course, Speed, etc), Ship Info (Ship Name, Call Sign, Length/Beam), Cargo Info (Draft, Type, Destination, Route, Estimated Time of Arrival (ETA)), and Messaging (Safety, Text). This technology will improve capability in three diverse areas: (a) Situational Awareness/Common Operational Picture (COP) (b) Navigation/Safety of Ship and (c) Other intelligence gathering/correlation. RDT&E will fund the integration of Commercial off-the-shelf (COTS) AIS equipment into the existing Global Command and Control - Maritime (GCCS-M)/COP, Navigation Sensor System Interface (NAVSSI) navigation and bridge capabilities surface search / weapons systems and intelligence / cryptologic capabilities in support of AIS Phase 2 procurement efforts.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems	PROJECT NUMBER AND NAME 3165 AUTOMATIC IDENTIFICATION SYSTEM (AIS)

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost			3.004	
RDT&E Articles Quantity				

AUTOMATIC IDENTIFICATION SYSTEM (AIS): RDT&E will fund the integration of Commercial off-the-shelf (COTS) AIS equipment into the existing GCCS-M/COP, NAVSSI navigation and bridge capabilities, surface search / weapons systems and intelligence / cryptologic capabilities in support of AIS Phase 2 procurement efforts.

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA 5**

PROGRAM ELEMENT: PE 0304785N Tactical Cryptologic Systems

PROJECT NUMBER AND NAME: 3165/AUTOMATIC IDENTIFICATION SYSTEM (AIS)

Cost Categories	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development													
Ancillary Hardware Development	TBD/VAR	TBD/VAR							0.130	11/06	Continuing	Continuing	Continuing
Systems Engineering	TBD/VAR	TBD/VAR							0.100	11/06	Continuing	Continuing	Continuing
Training Development	TBD/VAR	TBD/VAR							0.100	11/06	Continuing	Continuing	Continuing
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development									0.330				

Remarks:

Development Support													
Software Development	TBD/VAR	TBD/VAR							2.000	11/06	Continuing	Continuing	Continuing
Training Development													
Integrated Logistics Support	TBD/VAR	TBD/VAR							0.100	11/06	Continuing	Continuing	Continuing
Configuration Management	TBD/VAR	TBD/VAR							0.100	11/06	Continuing	Continuing	Continuing
Technical Data													
GFE													
Subtotal Support									2.200				

Remarks:

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA 5

PROGRAM ELEMENT
PE 0304785N Tactical Cryptologic Systems

PROJECT NUMBER AND NAME

3165/AUTOMATIC IDENTIFICATION SYSTEM (AIS)

Cost Categories	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	TBD/VAR	TBD/VAR							0.104	11/06	Continuing	Continuing	Continuing
Operational Test & Evaluation	TBD/VAR	TBD/VAR							0.130	11/06	Continuing	Continuing	Continuing
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Subtotal T&E									0.234				

Remarks:

Contractor Engineering Support	TBD/VAR	TBD/VAR							0.100	11/06	Continuing	Continuing	Continuing
Government Engineering Support													
Program Management Support									0.100	11/06	Continuing	Continuing	Continuing
Travel									0.040	11/06	Continuing	Continuing	Continuing
Subtotal Management									0.240				

Remarks:

Total Cost									3.004	TBD	TBD	TBD	

Remarks:

R-1 SHOPPING LIST - Item No. 140

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																													DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA- 5**					PROGRAM ELEMENT NUMBER AND NAME PE 0304785N Tactical Cryptologic Systems												PROJECT NUMBER AND NAME 3165/AUTOMATIC IDENTIFICATION SYSTEM (AIS)												
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	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**																												
Software Integration / Development Phase 2																												
Test & Evaluation **Milestones** Operational Assessment												OA				OA				OA								
Production Milestones FY08 FY09 FY10																												
Deliveries																Various *				Various *				Various *				

R-1 SHOPPING LIST - Item No. 140

* Quantity varies because the equipment being procured is COTS/NDI.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 5**	PROGRAM ELEMENT PE 0304785N Tactical Cryptologic Systems				PROJECT NUMBER AND NAME 3165/AUTOMATIC IDENTIFICATION SYSTEM (AIS)			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Contract Award			Q1	Q1	Q1			
Software Integration Development			Q1-Q4	Q1-Q4	Q1-Q4			
OA			Q4	Q4	Q4			

R-1 SHOPPING LIST - Item No. 140