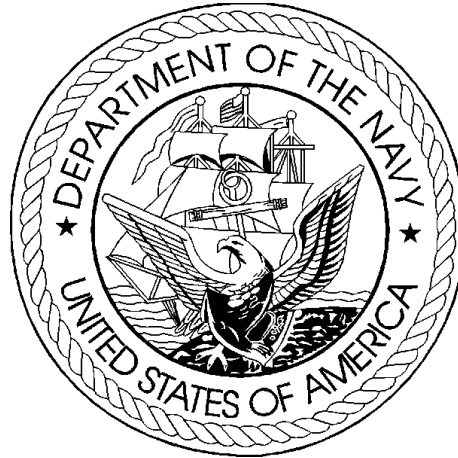


DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2010
BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES
MAY 2009

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

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Department of Defense Appropriations Act, 2010

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, \$19,378,112,000, to remain available for obligation until September 30, 2011.

UNCLASSIFIED

Department of the Navy
FY 2010/2011 President's Budget
Exhibit R-1 FY 2010 Base and Overseas Contingency Operations (OCO) Request
Summary
(Dollars in Thousands)

05 MAY 2009

Summary Recap of Budget Activities -----	FY 2008 Base&OCO Actuals -----	FY 2009 Base&OCO SupReq 4/9/09 -----	FY 2010 Base -----	FY 2010 OCO -----	FY 2010 Total -----
System Development & Demonstration	7,968,416	8,685,078	7,975,882		7,975,882
Total Research, Development, Test & Eval, Navy	7,968,416	8,685,078	7,975,882		7,975,882
Summary Recap of FYDP Programs -----					
General Purpose Forces			689,075		689,075
Intelligence and Communications	38,262	18,228	19,016		19,016
Research and Development	7,930,154	8,666,850	7,267,791		7,267,791
Classified Programs					
Total Research, Development, Test & Eval, Navy	7,968,416	8,685,078	7,975,882		7,975,882

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:14:47

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UNCLASSIFIED

* Reflects \$30.510 million of a proposed \$2.9 billion cancellation from the Department's base budget (the Consolidated Security, Disaster Assistance, and Continuing Appropriations, Act 2009, (Public Law 110-329), for fuel savings to offset a portion of the additional Emergency Requests in FY 2009 Overseas Contingency Operations Supplemental Request (Acceleration/Grow the Force, Family Support, and National Capital Region Acceleration). Also reflects a \$5.0 million cancellation for certain classified programs that are now excess to requirements.

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Department of the Navy
FY 2010/2011 President's Budget
Exhibit R-1 FY 2010 Base and Overseas Contingency Operations (OCO) Request
(Dollars in Thousands)

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

Date: 05 MAY 2009

Line No --	Program Element Number -----	Item ----	Act ---	FY 2008 Base&OCO Actuals -----	FY 2009 Base&OCO SupReq 4/9/09 -----	FY 2010 Base -----	FY 2010 OCO -----	FY 2010 Total -----	S E C -
80	0604212N	Other Helo Development	05	51,495	58,052	54,092		54,092	U
81	0604214N	AV-8B Aircraft - Eng Dev	05	22,128	29,843	20,886		20,886	U
82	0604215N	Standards Development	05	103,976	66,794	53,540		53,540	U
83	0604216N	Multi-Mission Helicopter Upgrade Development	05	74,205	70,131	81,953		81,953	U
84	0604218N	Air/Ocean Equipment Engineering	05	4,738	5,731	7,485		7,485	U
85	0604221N	P-3 Modernization Program	05	4,511	3,579	3,659		3,659	U
86	0604230N	Warfare Support System	05	6,116	12,577	6,307		6,307	U
87	0604231N	Tactical Command System	05	87,363	102,388	86,462		86,462	U
88	0604234N	Advanced Hawkeye	05	785,792	482,848	364,557		364,557	U
89	0604245N	H-1 Upgrades	05	4,452	3,785	32,830		32,830	U
90	0604261N	Acoustic Search Sensors	05	18,742	39,652	56,369		56,369	U
91	0604262N	V-22A	05	125,157	72,477	89,512		89,512	U
92	0604264N	Air Crew Systems Development	05	23,272	16,148	14,265		14,265	U
93	0604269N	EA-18	05	269,379	129,746	55,446		55,446	U
94	0604270N	Electronic Warfare Development	05	50,900	90,686	97,635		97,635	U
95	0604273N	VH-71A Executive Helo Development	05	226,494	832,701	85,240		85,240	U
96	0604274N	Next Generation Jammer (NGJ)	05			127,970		127,970	U
97	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	830,792	845,184	876,374		876,374	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:14:47

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UNCLASSIFIED

* Reflects \$30.510 million of a proposed \$2.9 billion cancellation from the Department's base budget (the Consolidated Security, Disaster Assistance, and Continuing Appropriations, Act 2009, (Public Law 110-329), for fuel savings to offset a portion of the additional Emergency Requests in FY 2009 Overseas Contingency Operations Supplemental Request (Acceleration/Grow the Force, Family Support, and National Capital Region Acceleration). Also reflects a \$5.0 million cancellation for certain classified programs that are now excess to requirements.

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Department of the Navy
FY 2010/2011 President's Budget
Exhibit R-1 FY 2010 Base and Overseas Contingency Operations (OCO) Request
(Dollars in Thousands)

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

Date: 05 MAY 2009

Line No --	Program Element Number -----	Item ----	Act ---	FY 2008 Base&OCO Actuals -----	FY 2009 Base&OCO SupReq 4/9/09 -----	FY 2010 Base -----	FY 2010 OCO -----	FY 2010 Total -----	S E C -
98	0604300N	SC-21 Total Ship System Engineering	05	622,812	596,323				U
99	0604307N	Surface Combatant Combat System Engineering	05	151,609	200,330	178,459		178,459	U
100	0604311N	LPD-17 Class Systems Integration	05	4,175	982	5,304		5,304	U
101	0604329N	Small Diameter Bomb (SDB)	05	11,252	19,512	43,902		43,902	U
102	0604366N	Standard Missile Improvements	05	214,644	237,010	182,197		182,197	U
103	0604373N	Airborne MCM	05	55,422	41,769	48,712		48,712	U
104	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	14,612	13,297	11,727		11,727	U
105	0604501N	Advanced Above Water Sensors	05	113,107	138,576	236,078		236,078	U
106	0604503N	SSN-688 and Trident Modernization	05	114,354	143,015	122,733		122,733	U
107	0604504N	Air Control	05	4,348	8,169	6,533		6,533	U
108	0604512N	Shipboard Aviation Systems	05	37,495	45,519	80,623		80,623	U
109	0604518N	Combat Information Center Conversion	05	18,163	17,732	13,305		13,305	U
110	0604558N	New Design SSN	05	239,774	189,833	154,756		154,756	U
111	0604561N	SSN-21 Developments	05	1,946					U
112	0604562N	Submarine Tactical Warfare System	05	55,128	66,402	59,703		59,703	U
113	0604567N	Ship Contract Design/ Live Fire T&E	05	61,528	80,901	89,988		89,988	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:14:47

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UNCLASSIFIED

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Department of the Navy
 FY 2010/2011 President's Budget
 Exhibit R-1 FY 2010 Base and Overseas Contingency Operations (OCO) Request
 (Dollars in Thousands)

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

Date: 05 MAY 2009

Line No --	Program Element Number -----	Item ----	Act ---	FY 2008 Base&OCO Actuals -----	FY 2009 Base&OCO SupReq 4/9/09 -----	FY 2010 Base -----	FY 2010 OCO -----	FY 2010 Total -----	S E C -
114	0604574N	Navy Tactical Computer Resources	05			4,620		4,620	U
115	0604601N	Mine Development	05	2,030	2,003	2,249		2,249	U
116	0604610N	Lightweight Torpedo Development	05	26,293	52,190	21,105		21,105	U
117	0604654N	Joint Service Explosive Ordnance Development	05	10,082	10,829	10,327		10,327	U
118	0604703N	Personnel, Training, Simulation, and Human Factors	05	8,561	5,249	5,898		5,898	U
119	0604727N	Joint Standoff Weapon Systems	05	28,804	22,449	10,022		10,022	U
120	0604755N	Ship Self Defense (Detect & Control)	05	34,564	44,877	35,459		35,459	U
121	0604756N	Ship Self Defense (Engage: Hard Kill)	05	73,829	46,811	34,236		34,236	U
122	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	36,461	63,801	88,895		88,895	U
123	0604761N	Intelligence Engineering	05	10,368	15,556	14,438		14,438	U
124	0604771N	Medical Development	05	49,656	39,725	9,888		9,888	U
125	0604777N	Navigation/ID System	05	43,486	48,874	63,184		63,184	U
126	0604784N	Distributed Surveillance System	05		1,995				U
127	0604800N	Joint Strike Fighter (JSF)	05	1,848,883	1,744,612	1,741,296		1,741,296	U
128	0605013M	Information Technology Development	05	28,068	30,156	9,868		9,868	U
129	0605013N	Information Technology Development	05	71,747	91,643	69,026		69,026	U
130	0605212N	CH-53K RDTE	05	386,305	568,939	554,827		554,827	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:14:47

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UNCLASSIFIED

* Reflects \$30.510 million of a proposed \$2.9 billion cancellation from the Department's base budget (the Consolidated Security, Disaster Assistance, and Continuing Appropriations, Act 2009, (Public Law 110-329), for fuel savings to offset a portion of the additional Emergency Requests in FY 2009 Overseas Contingency Operations Supplemental Request (Acceleration/Grow the Force, Family Support, and National Capital Region Acceleration). Also reflects a \$5.0 million cancellation for certain classified programs that are now excess to requirements.

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Department of the Navy
FY 2010/2011 President's Budget
Exhibit R-1 FY 2010 Base and Overseas Contingency Operations (OCO) Request
(Dollars in Thousands)

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

Date: 05 MAY 2009

Line No	Program Element Number	Item	Act	FY 2008 Base&OCO Actuals	FY 2009 Base&OCO SupReq 4/9/09	FY 2010 Base	FY 2010 OCO	FY 2010 Total	S E C
--	-----	----	---	-----	-----	-----	-----	-----	-
131	0605430N	C/KC-130 Avionics Modernization Program (AMP)	05		24,341				U
132	0605450N	Joint Air-to-Ground Missile (JAGM)	05		62,155	81,434		81,434	U
133	0605500N	Multi-mission Maritime Aircraft (MMA)	05	861,136	1,128,953	1,162,417		1,162,417	U
134	0204201N	CG(X)	05			150,022		150,022	U
135	0204202N	DDG-1000	05			539,053		539,053	U
136	0304785N	Tactical Cryptologic Systems	05	38,262	18,228	19,016		19,016	U
		System Development & Demonstration		7,968,416	8,685,078	7,975,882		7,975,882	
		Total Research, Development, Test & Eval, Navy		7,968,416	8,685,078	7,975,882		7,975,882	

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:14:47

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UNCLASSIFIED

* Reflects \$30.510 million of a proposed \$2.9 billion cancellation from the Department's base budget (the Consolidated Security, Disaster Assistance, and Continuing Appropriations, Act 2009, (Public Law 110-329), for fuel savings to offset a portion of the additional Emergency Requests in FY 2009 Overseas Contingency Operations Supplemental Request (Acceleration/Grow the Force, Family Support, and National Capital Region Acceleration). Also reflects a \$5.0 million cancellation for certain classified programs that are now excess to requirements.

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Department of the Navy
FY 2010 President's Budget
(Dollars in Thousands)
FY 2009 Proposed Fuel Cancellations

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

Line	Program Element	Item	Act	FY 2009	S E C
No	Number				
80	0604212N	Other Helicopter Development	05	-241	U
81	0604214N	AV-8B Aircraft - Engine Dev	05	-140	U
82	0604215N	Standards Development	05	-277	U
83	0604216N	Multi-Mssn Helicopter Upgrade Dev	05	-292	U
85	0604221N	P-3 Modernization Program	05	-17	U
86	0604230N	Warfare Support System	05	-3	U
87	0604231N	Tactical Command System	05	-224	U
88	0604234N	Advanced Hawkeye	05	-493	U
89	0604245N	H-1 Upgrades	05	-13	U
90	0604261N	Acoustic Search Sensors	05	-307	U
91	0604262N	V-22A	05	-529	U
92	0604264N	Air Crew Systems Development	05	-163	U
93	0604269N	EA-18 Squadrons	05	-1057	U
94	0604270N	Electronic Warfare (EW) Dev	05	-210	U
95	0604273N	VH-71 Executive Helo Development	05	-899	U
97	0604280N	JT Tact Radio Sys (JTRS)	05	-127	U
98	0604300N	SC-21 Total Ship System Eng	05	-214	U
99	0604307N	Surface Combatant Cmbt Sys Eng	05	-59	U
101	0604329N	Small Diameter Bomb (SDB)	05	-27	U
102	0604366N	Standard Missile Improvements	05	-34	U
103	0604373N	Airborne Mine Countermeasures (AMCM)	05	-29	U
104	0604378N	Nav Integrated Fire Control-Counter Air Sys Eng	05	-2	U
105	0604501N	Advanced Above Water Sensors	05	-30	U

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Department of the Navy
FY 2010 President's Budget
(Dollars in Thousands)
FY 2009 Proposed Fuel Cancellations

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

Line	Program Element	Item	Act	FY 2009	S E C
No	Number				
106	0604503N	SSN-688 & Trident Modernization	05	-179	U
107	0604504N	Air Control	05	-106	U
108	0604512N	Shipboard Aviation Systems	05	-218	U
109	0604518N	Combat Information Center Conv	05	-23	U
110	0604558N	New Design SSN	05	-119	U
112	0604562N	Submarine Tactical Warfare System	05	-38	U
113	0604567N	Ship Contract Design/ Live Fire T&E	05	-32	U
115	0604601N	Mine Development	05	-4	U
116	0604610N	Lightweight Torpedo Development	05	-87	U
117	0604654N	JT Service EOD	05	-23	U
119	0604727N	Joint Standoff Weapon Systems	05	-14	U
120	0604755N	Ship Self Def (Detect & Cntrl)	05	-23	U
121	0604756N	Ship Self Def (Engage: Hard Kill)	05	-96	U
122	0604757N	Ship Self Def (Engage: Soft Kill/EW)	05	-21	U
124	0604777N	Navigation/Id System	05	-332	U
127	0604800N	JT Strike Fighter (JSF) - EMD	05	-42	U
130	0605212N	CH-53K	05	-4165	U
131	0605430N	C/KC-130 Avionics Modernization Program (AMP)	05	-50	U
132	0605450N	Joint Air-to-ground Missile (JAGM)	05	-398	U
133	0605500N	Multi-mssn Maritime Aircraft (MMA) (P-8A)	05	-5076	U
		Total Research, Development, Test & Eval, Navy (BA 05)		-16433	

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604212N, OTHER HELO DEVELOPMENT			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	51.495	57.811	54.092					
1109 CH/MH-53	7.192	2.865	2.958					
2415 CH-60 DEVELOPMENT	38.114	46.963	49.134					
2460 VH-3/VH-60	6.189	7.983	2.000					

* Totals may not add due to rounding

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. H-53 efforts will continue to develop and qualify components in order to replace obsolete system components. Emphasis will be placed on supportability improvement modifications that will sustain the H-53 aircraft until the transition of the H-53K 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. 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.

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); Airborne Mine Countermeasures (AMCM) and Armed Helo. The MH-60S Operational Requirements Document (ORD) was modified in May 2000 to add Airborne Mine Countermeasures (AMCM) as a capability. ORD Change II was validated and approved by the Joint Requirements Oversight Council (JROC) 15 February 2008 updating key performance parameters (KPP). 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.

2460 - 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). Currently two Type, Model, Series (TMS) aircraft are used by HMX-1 for the Presidential support mission - the VH-3D and the VH-60N. This project will fund a Service Life Assessment Program (SLAP) for both the VH-3D and the VH-60N and will also upgrade the safety of the fuel system on the VH-3D.

R-1 SHOPPING LIST - Item No. 80

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604212N, OTHER HELO DEVELOPMENT	

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
FY2009 President's Budget:	40.862	58.210	10.936
FY2010 President's Budget:	51.495	57.811	54.092
Total Adjustments	10.633	-0.399	43.156
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments	10.986	-0.241	
SBIR/STTR/FTT Assessments	-0.269		
Program Adjustments	-0.084		43.172
Rate/Misc Adjustments		-0.158	-0.016
Subtotal	10.633	-0.399	43.156

Schedule:

2415 AMCM - As a result of decertification from AMCM Blk 2A Operational Testing (OT), a Verification of Correction of Deficiencies (VCD) period has been added in 3Q FY09 through 1Q FY10 to test changes and verify corrections to Carriage Stream Tow & Recovery System (CSTRS) reliability and maintainability issues identified . OT will resume 1Q FY10 to complete in 3Q FY10. Interim Program Review (IPR) IV, Initial Operating Capability (IOC), Full Rate Production (FRP) and deliveries have moved accordingly. Developmental Testing (DT) for Block 2B Airborne Mine Neutralization System (AMNS) delayed to 3Q FY08 and terminated 4Q FY08 due to Tow Cable issues. DT/VCD resumes 3Q FY09 through 3Q FY10 , with OT subsequently delaying. Delays in sensor development schedules have also extended Contractor Testing (CT) for Airborne Laser Mine Detection System (ALMDS) into 2Q FY09, DT into 1Q FY10, and OT completion to 2Q FY10. Due to technical issues experienced during contractor development, Organic Airborne & Surface Influence Sweep (OASIS) and Rapid Airborne Mine Clearance System (RAMICS) have been separated, reflecting CT delayed for both from 2Q FY08 until 3Q FY10 for OASIS and 3Q FY09 for RAMICS initial CT (Captive Carriage and Jettison testing) with DT and OT reflecting subsequent delays. RAMICS Ground Testing has been delayed until 3Q FY10 due to unavailability of RAMICS hardware. The Low Rate Initial Production (LRIP) contract award for AMCM Mission kits has been added to 2Q FY10 to support fleet introduction and training requirements.

2415 Link 16 - Aircraft Block 3B Mod Delivery has moved to 4th quarter FY08 due to aircraft availability. OT extended to 2Q FY09 due to complexities of software integration and test requirements for Link 16. IOC has moved to 1Q FY09 and IPR to 2Q FY09 accordingly.

2415 Fixed Forward Weapons - Fixed Forward Weapons (FFW) NRE design and integration extended from 2Q FY08 through 3Q FY10 to include Anti-swarm weapons. CT, DT, OT is re-planned as Air Worthiness Certification to align with program execution plan. Developmental Testing (DT) and Operational Testing (OT) were added to incorporate the increased capability of anti-swarm weapon integration.

Technical: N/A

R-1 SHOPPING LIST - Item No. 80

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME 1109, CH/MH-53			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	7.192	2.865	2.958					
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. H-53 efforts will continue to develop and qualify components in order to replace obsolete system components. Emphasis will be placed on supportability improvement modifications that will sustain the H-53 aircraft until the transition of the H-53K 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. Modeling and simulation will be used to the maximum practical extent throughout this effort. 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 EMV assessment will be required for the affected and/or modified systems								

R-1 SHOPPING LIST - Item No. 80

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME 1109, CH/MH-53		
B. Accomplishments/Planned Program				
H-53 Avionics	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.991	0.392	0.409	
RDT&E Articles Quantity				
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.				
H-53 Survivability	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.193	0.198	0.208	
RDT&E Articles Quantity				
H-53 Survivability: 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.				
H-53 Propulsion	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.165	1.415	1.451	
RDT&E Articles Quantity				
H-53 Propulsion: Trade studies, risk reduction, design, development, integration and test activities for H-53 T64 engine and related systems.				

R-1 SHOPPING LIST - Item No. 80

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME 1109, CH/MH-53		
B. Accomplishments/Planned Program (Cont.)				
Project Management Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.629	0.642	0.663	
RDT&E Articles Quantity				
Project Management Support: In-house, field activities, and contractor 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, product management support, system engineering and logistics support, and travel for the H-53 program.				
H-53 Airframe	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.214	0.218	0.227	
RDT&E Articles Quantity				
H-53 Airframe: 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.				
	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 80

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604212N, OTHER HELO DEVELOPMENT	1109, CH/MH-53		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
0528000 H-53 Series	115.877	91.480	232.927	
D. ACQUISITION STRATEGY:				
Not applicable.				

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604212N, OTHER HELO DEVELOPMENT			1109, CH/MH-53							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	Various	Various	1.472	0.264	Various	0.337	Various						
Ancillary Hardware Development	Various	TBD	1.360	0.077	Various	0.133	Various						
Aircraft Integration	T&M	Northrop Grumman, Chicago	12.010										
Aircraft Integration	T&M	OADS, Manassas, VA	2.493										
Ship Suitability													
Systems Engineering	WR	NAWCAD, Patuxent River MD	0.516	0.554	11/08	0.629	11/09						
Training Development													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			17.851	0.895		1.099							
Remarks:													
Development Support													
Software Development	Various	TBD	1.307	0.199	Various	0.239	Various						
Integrated Logistics Support													
Configuration Management													
Technical Data													
Studies & Analyses													
GFE	Various	NAWCAD, Patuxent River MD	0.506	0.378	11/08	0.436	11/09						
Award Fees													
Subtotal Support			1.813	0.577		0.675							
Remarks:													

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-5			PROGRAM ELEMENT 0604212N, OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME 1109, CH/MH-53						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	Various	TBD	2.598	0.751	Various	0.839	Various					
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			2.598	0.751		0.839						
Remarks:												
Contractor Engineering Support	BOA, T&M	Sikorsky, Stratford CT	2.925									
Government Engineering Support	WR	NAWCAD, Patuxent River MD	4.426	0.163	11/08	0.201	11/09					
Program Management Support	Various	Various	1.399	0.366								
Travel	Various	Various	1.171	0.113	Various	0.144	Various					
Transportation												
SBIR Assessment												
Subtotal Management			9.921	0.642		0.345						
Remarks:												
Total Cost			32.183	2.865		2.958						
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5								PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT					PROJECT NUMBER AND NAME 1109, CH/MH-53									
Fiscal Year	2008				2009				2010													
	1	2	3	4	1	2	3	4	1	2	3	4										
Acquisition Milestones																						
Engineering Milestones																						
Obsolescence Issues/Studies																						
Survivability Analysis																						
Legacy P3I Efforts																						
Safety Upgrades																						
Test & Evaluation Milestones																						
Development Test																						
Operational Test																						
Production Milestones																						
Production Deliveries																						

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME 2415, CH-60 DEVELOPMENT			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
2415 CH-60 DEVELOPMENT	38.114	46.963	49.134					
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), Airborne Mine Countermeasures (AMCM) and Armed Helo. The MH-60S ORD was modified in May 2000 to add Airborne Mine Countermeasures (AMCM) as a primary mission for the MH-60S. ORD Change II was validated and approved by the Joint Requirements Oversight Council (JROC) 15 February 2008 updating key performance parameters (KPP). The Airborne Mine Countermeasures (AMCM) mission will provide Carrier Strike Groups (CSGs) and Expeditionary Strike Groups (ESGs) with an AMCM capability. The Armed Helo will provide Combat Search and Rescue (CSAR), Surface Warfare (SUW) and Maritime Interdiction Operations (MIO) to include Link 16 and Fixed Forward Weapons, which includes Rockets and Anti-swarm weapons. The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME 2415, CH-60 DEVELOPMENT		
B. Accomplishments/Planned Program				
MH-60S Airframe Development and Integration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	12.185	14.938	16.600	
RDT&E Articles Quantity				
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 situation analysis and Instructional System Development (ISD) documentation. Design, develop, integrate and support the Link 16 development. Integrate Link 16 training situation analysis, ISD document. RTOC initiative: weight reduction. Conduct trade studies and analysis, develop and qualify components in order to replace obsolete system components on the MH-60S. Develop, integrate and test upgraded AMCM coupler. Analyze, design, integrate, test, and support Fixed Forward Weapons				
MH-60S Avionics Development and Integration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	10.004	16.951	15.980	
RDT&E Articles Quantity				
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 systems. Continue AMCM training situational analysis, and Instructional System Development (ISD) documentation. Design, develop, integrate and support the Link 16 software development. Integrate Link 16 training situation analysis, ISD document. Develop capability for MH-60S Joint Mission Planning System (JMPS) networking. Develop, integrate and test upgraded AMCM coupler. Design, integrate, test, and support Fixed Forward Weapons.				
MH-60S Engineering, Logistics , Mgt Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	15.925	15.074	16.554	
RDT&E Articles Quantity				
Navy field activity systems engineering, logistics support, management and travel for the AMCM MH-60S Weapons System Integration Team (WSIT) for airframe and avionics, Fixed Forward Weapons integration, and Link 16 development effort. Support/conduct MH-60S aircraft integration testing for AMCM sensor systems and Link 16, and Fixed Forward Weapons. Engineering and integration effort to incorporate AMCM requirements into the ship C4I structure. Provide JMPS networking requirements and validate software updates.				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT		PROJECT NUMBER AND NAME 2415, CH-60 DEVELOPMENT	
C. OTHER PROGRAM FUNDING SUMMARY:					
<u>Line Item No. & Name</u>		<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
017900 APN-1 MH-60S		564.185	594.149	492.975	
060510 APN-6 MH-60S		15.302	1.000	1.581	
053000 APN-5 H-60 Mods		18.699	36.888	34.861	
(OSIPs 016-04, 009-07, 009-09)					
D. 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 - Organic Airborne Mine Countermeasures					
-Block 3 - Armed Helo					

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Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N, OTHER HELO DEVELOPMENT			2415, CH-60 DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Development												
GFE - Fixed Forward Weapon (FFW)	TBD	TBD		0.250	12/08							
Primary Hdw Dev - Airframe	*SS/CPIF	SIKORSKY, STRATFORD CT	151.544	9.796	12/08	15.000	12/09					
Primary Hdw Dev - Airframe FFW	TBD	SIKORSKY, STRATFORD CT	4.000	2.213	12/08	1.600	12/09					
Primary Hdw Dev - Avionics	*SS/CPIF	LOCKHEED MARTIN, OWEGO, NY	173.317	14.951	12/08	14.980	12/09					
Primary Hdw Dev - Avionics FFW	TBD	LOCKHEED MARTIN, OWEGO, NY	0.900	2.000	12/08	1.000	12/09					
Primary Hdw Dev - CSTRS	RX	NSWC, PANAMA CITY	12.030	2.679								
Primary Hdw Dev - CSTRS	MIPR	CECOM, FT MONMOUTH, NJ	7.179									
All Product Dev Cost from FY97-FY08	VARIOUS	VARIOUS	49.089									
Subtotal Product Development			398.059	31.889		32.580						
Remarks: * PY SS/CPAF - \$2.88 FY05-FY08 SS/CPIF ** PY SS/CPAF, FY05-FY06 CPFF												
Development Support												
ILS - MSS (NON-FFRDC)	VARIOUS	VARIOUS	1.321	0.260	12/08	0.260	12/09					
Integrated Logistics Support	WX	VARIOUS	4.098	0.924	11/08	0.371	11/09					
Integrated Logistics Support	VARIOUS	VARIOUS	4.417			1.000	12/09					
All Support Cost from FY97-FY08	VARIOUS	VARIOUS	4.172									
Subtotal Support			14.008	1.184		1.631						
Remarks: Totals may not add due to rounding.												

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604212N, OTHER HELO DEVELOPMENT			2415, CH-60 DEVELOPMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Test & Evaluation											
Dev Test & Evaluation	WX	NAWCAD, PATUXENT RIVER	18.653	7.305	11/08	6.754	11/09				
Dev Test & Evaluation	WX	VARIOUS	14.522			1.858	11/09				
Operational Test & Evaluation	WX	OPER T&E FOR CD 30, NORFOLK VA	0.600	0.714	11/08	1.500	01/10				
All Test & Eval Costs from FY97-FY08	VARIOUS	VARIOUS	6.159								
Subtotal T&E			39.934	8.019		10.112					
Remarks:											
Management											
Eng & Tech Srvs (NON-FFRDC)	VARIOUS	VARIOUS	10.090	0.520	VARIOUS	0.667	VARIOUS				
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	6.699	1.200	11/08	1.685	11/09				
Government Engineering Support	WX	NSWC, PANAMA CITY FL	22.173	2.500	11/08	0.925	11/09				
Government Engineering Support	WX	VARIOUS	23.840	0.375	VARIOUS	0.400	VARIOUS				
Program Mgmt Support CSS	VARIOUS	VARIOUS	4.416	0.554	VARIOUS	0.500	VARIOUS				
Program Mgmt Govt Support	WX	VARIOUS	12.084	0.522	VARIOUS	0.434	VARIOUS				
Travel	WX	VARIOUS	2.244	0.200	11/08	0.200	11/09				
All Mgmt Costs from FY97-FY08	VARIOUS	VARIOUS	0.984								
Subtotal Management			82.530	5.871		4.811					
Remarks:											
Total Cost			534.531	46.963		49.134					
Remarks: Totals may not add due to rounding.											

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CLASSIFICATION:

EXHIBIT R4, Schedule

DATE:

May 2009

APPROPRIATION/BUDGET, PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA-5

0604212N, OTHER HELO DEVELOPMENT

2415, CH-60 DEVELOPMENT

Fiscal Year	FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Note 1: Captive Carriage
(CC)/Jetison (Jet)

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CLASSIFICATION:																																
EXHIBIT R4, Schedule Profile												DATE: May 2009																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5								PROJECT NUMBER AND NAME 2415, CH-60 DEVELOPMENT																								
Fiscal Year	FY 2008				FY 2009				FY 2010				FY 2011				2012				2013				2014				2015			
	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					★																											
(Block 3B Link-16)					ICC																											
Design/Build/Integration						▲																										
Fixed Forward Weapon (Rockets/Anti-Swarm)																																
MH-60S Block 3B Development Milestones																																
Aircraft Block 3B Mod Delivery																																
Test & Evaluation Milestones																																
Block 3B Link-16																																
Fixed Forward Weapon/Rockets																																
Fixed Forward Weapon/Anti-Swarm																																
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CLASSIFICATION:								
Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N Other Helo Development		PROJECT NUMBER AND NAME 2415, CH-60 DEVELOPMENT			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Block 2A								
Verification of Correction of Deficiencies (VCD) / Developmental Testing (DT)(AMNS)		3Q-4Q	1Q					
Operational Testing (OT)	2Q		1Q-3Q					
Initial Operational Capability-AMCM*			4Q					
Block 2B								
AMCM 2B Ground Testing	2Q-3Q							
AMCM 2B Ground Testing (RAMICS)			3Q					
Contractor Test (ALMDS)	3Q-4Q	1Q-2Q						
Verification of Correction of Deficiencies (VCD) / Developmental Testing (DT)(AMNS)	3Q-4Q	3Q-4Q	1Q-2Q					
Developmental Testing (DT)(ALMDS)		2Q-4Q	1Q-2Q					
Operational Testing (OT)(AMNS)			3Q-4Q					
Operational Testing (OT)(ALMDS)			1Q-2Q					
Contractor Test (OASIS)			3Q-4Q					
Contractor Test (RAMICS)		3Q-4Q						
Low Rate Initial Production			2Q					
*AMCM/AQS-20 (Block 2A) integration is the basis for the MH-60S AMCM IOC and full rate production decision								

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CLASSIFICATION:								
Exhibit R-4a, Schedule Detail					DATE:			
					May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDT&E, N / BA-5		0604212N Other Helo Development			2415 CH-60 Development			
Schedule Profile		FY 2008	FY 2009	FY 2010				
BLOCK 3B - Link 16								
Aircraft Block 3B Mod Delivery		4Q						
Developmental Testing (DT)		1Q-3Q						
Operational Test Readiness Review (OTRR)		4Q						
Operational Testing (OT)		4Q	1Q-2Q					
IPR 3			2Q					
IOC			1Q					
Fixed Forward Weapon								
System Design, Build, and Integration		2Q-4Q	1Q-4Q	1Q-3Q				
Air Worthiness Certification		3Q-4Q	1Q-4Q					
Developmental Testing (DT)				2Q-4Q				
Operational Testing (OT)				3Q-4Q				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N, Other Helo Development			PROJECT NUMBER AND NAME 2460, VH-3/VH-60			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	6.189	7.983	2.000					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 2460 - 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). Currently two Type, Model, Series (TMS) aircraft are used by HMX-1 for the Presidential support mission – the VH-3D and the VH-60N. This project will fund a Service Life Assessment Program for both the VH-3D and the VH-60N and will also upgrade the safety of the fuel system on the VH-3D.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N, OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME 2460, VH-3/VH-60																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">VH-3D Fuel Systems Upgrade</td><td style="width: 10%;">FY 08</td><td style="width: 10%;">FY 09</td><td style="width: 10%;">FY 10</td><td style="width: 40%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>6.189</td><td>0.400</td><td>0.150</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					VH-3D Fuel Systems Upgrade	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	6.189	0.400	0.150		RDT&E Articles Quantity				
VH-3D Fuel Systems Upgrade	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	6.189	0.400	0.150																
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">VH-3D & VH-60N SLAP</td><td style="width: 10%;">FY 08</td><td style="width: 10%;">FY 09</td><td style="width: 10%;">FY 10</td><td style="width: 40%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>0.000</td><td>7.583</td><td>1.850</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					VH-3D & VH-60N SLAP	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.000	7.583	1.850		RDT&E Articles Quantity				
VH-3D & VH-60N SLAP	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.000	7.583	1.850																
RDT&E Articles Quantity																			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604212N, OTHER HELO DEVELOPMENT	2460, VH-3/VH-60		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
056600 Executive Helicopters Series	47.904	51.666	42.456	
 D. ACQUISITION STRATEGY:				
Not Applicable.				

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N, OTHER HELO DEVELOPMENT			2460, VH-3/VH-60						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Aircraft Integration												
Aircraft Integration												
Ship Suitability												
Systems Engineering	TBD	Sikorsky, Stratford CT	6.189	6.783	Various	1.600	12/09					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			6.189	6.783		1.600						
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support				0.300	12/08	0.100	11/09					
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.300		0.100						
Remarks:												

R-1 SHOPPING LIST - Item No. 80

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N, OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME 2460, VH-3/VH-60						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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							
Remarks:													
Contractor Engineering Support													
Government Engineering Support	WX	NAWCAD, Patuxent River MD		0.740	12/08	0.200	11/09						
Program Management Support	WX	NAWCAD, Patuxent River MD		0.100	12/08	0.075	11/09						
Travel	Various	Various		0.060	Various	0.025	Various						
Transportation													
SBIR Assessment													
Subtotal Management			0.000	0.900		0.300							
Remarks:													
Total Cost			6.189	7.983		2.000							
Remarks:													

R-1 SHOPPING LIST - Item No. 80

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile										DATE:														
APPROPRIATION/BUDGET ACTIVITY										PROJECT NUMBER AND NAME														
RDT&E, N / BA-5										2460, VH-3/VH-60														
Fiscal Year		FY 2008				FY 2009				FY 2010														
		1	2	3	4	1	2	3	4	1	2	3	4											
Engineering Milestones																								
VH-3D Fuel Systems Upgrade																								
VH SLAP																								

R-1 SHOPPING LIST - Item No. 80

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R-1 SHOPPING LIST - Item No. 80

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY							R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5							0604214N, AV-8B A/C - ENGINEERING DEV.	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	22.128	29.703	20.886					
0652 AV-8B	22.128	25.726	17.359					
2634 AV-8B OSCAR		3.977	3.527					

(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, H4.0/Weapons carriage expansion and countermeasures, and Aircraft Handling/Readiness Management Plan (RMP). The JMPS/AVJMPS is required as part of the DCN directed migration to a common Navy and Marine Corps mission planning system. The TAMMAC is the avionics system that replaced the aging/obsolete ANASQ-196 digital map set and the ANASQ-194 data storage set presently installed. A/C Handling and performance includes all engineering activities for development and design to support aircraft safety flight clearance and concept exploration to support program objectives. The Program Manager's (PMA-257) Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: H4.0, H5.0, H6.0, H7.0 H8.0 and follow-on systems. TAMMAC is planned for incorporation into Block H4.0. H6.0 block upgrade will provide upgrades to the aircraft communications system for interoperability within the Network-centric warfare operational area. Additionally, the program provides weapons carriage expansion by design, development, integration and testing of additional precision guided and linked programmable weapon capabilities, digital close air support improvements, and video and data link improvements. The H5.0 also provides weapons carriage capability of the listening pod on centerline/station 4. This is an upgrade to the standard AV-8B aircraft capability. H7.0 Block upgrade will provide additional communications/data link upgrades and weapon expansion. H8.0 provides the follow-on step toward an integrated air picture within the Battle Space Network via Multifunctional Information Distribution System (MIDS)/MIDS/RS-Link-16 participation within the Global Information Grid (GIG). The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and accessories. PMA-257 will accomplish this mission by conducting Engineering Project Description (EPD) investigations and performing a series of planned accelerated Simulated Mission Endurance Test (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 RMP is required to ensure the AV-8B air vehicle's sustained mission availability, and safe and reliable operational readiness until end of service. Air vehicle sustainment requires component and system analyses, technical planning, identification and diagnosis of problems and the development, testing and flight clearance of engineering solutions in the areas of flight and crew safety, structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, alternative mission development, or other emergent material or equipment conditions affecting AV-8B systems readiness. Activities include research/analysis for system safety deficiency corrections, fuel system safety improvements, structural analyses, monitoring and integrity analysis, component obsolescence analyses including development of display computer and air data computer replacement, alternatives explorations for aging equipment, reliability improvement analyses and design developments.

FY2008 Supplemental funds received for AV-8B Strikelink (A), Digital Video Recorder (DVR) and Listening Block Upgrade for the AV-8B aircraft.

Strikelink (A) will enable digital transmission/reception of target data to/from the Strikelink/TACP-M and F/A18 while decreasing workload on the Forward Air Controller (FAC). Migration to this solution will enable common Close Air Support (CAS) software between AV-8B and the CAS Strikeline/TACP-M systems, ensuring Air-to-Ground and AV-8B to F/A-18 interoperability throughout the remaining AV-8B service life.

The Digital Video Recorder (DVR) will provide significant enhancement to mission record and post flight debrief capabilities. The Digital Video Recorder (DVR) for AV-8B provides drop-in O-level replacement to address sustainment issues, obsolescence mitigation, extended combat record time (increase from 2 hrs to 6 hrs), reduction in pilot and maintainer workload, reduced SE requirement (8mm playback viewer elimination), and reduction in supply chain management requirements.

Listening Pods will be upgraded to a common (AV-8B, F/A 18, EA-6B) expeditionary configuration to support USMC AV-8B deployments to Overseas Contingency Operations (OCO). This development effort ensures integration of evolving Listening Pod capabilities. This upgrade includes plug and play capability, which is a prerequisite for video downlink.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		May 2009
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604214N, AV-8B A/C - ENGINEERING DEV.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2008	FY 2009	FY 2010
FY 2009 President's Budget	17.011	29.924	18.086
FY 2010 President's Budget	22.128	29.703	20.886
Total Adjustments	5.117	-0.221	2.800
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments	5.903	-0.140	
SBIR/STTR/FTT Assessments	-0.186		
Program Adjustments	-0.600		2.669
Rate/Misc Adjustments		-0.081	0.131
Subtotal	5.117	-0.221	2.800

Schedule: H6.0/Digital I-TER schedule delays are due to delays in awarding development/integration contract to prime vendor (EDO).

Technical: N/A

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EXHIBIT R-2a, RDT&E Project Justification								DATE:		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				May 2009			
RDT&E,N / BA-5			0604214N, AV-8B AIRCRAFT - ENGINEERING DEVELOPMENT				0652, AV-8B			
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010					
0652 AV-8B			22.128	25.726	17.359					
RDT&E Articles Qty										

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, Tactical Aircraft Moving Map Capability (TAMMAC) 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 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. H5.0 Block Upgrade provides Dual Mode Laser Guided Bombs (DMLGB) H6.0 includes weapons carriage 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.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Development of RMP ECP's	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	7.763	12.519	3.868	
RDT&E Articles Qty				

Conduct system analyses, identification and diagnoses of problems and the development and testing of engineering solutions in the areas of flight and crew safety, structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, alternative mission development or other emergent material or equipment conditions affecting AV-8B systems readiness. Address known and emergent readiness improvements and correction of deficiencies and issues including obsolescence and structural fatigue. Activities include: component obsolescence analyses including development of display computer and air data computer replacement and alternatives explorations for the air data computer and other aging equipment, crew ejection system and other safety deficiency corrections; fuel system safety improvements; structural analyses, monitoring, and integrity modifications; reliability improvement analyses and design developments.

Completion of ASMET IV Testing	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	5.042	9.417	12.153	
RDT&E Articles Qty				

Testing, analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine and accessories. Plan and complete ASMET V testing and develop new engine design efforts. Research, analysis, and develop design changes for engine accessories. Formalize Engine design development efforts based off of ASMET IV and incorporate into the engine. Address performance, reliability and obsolescence of F402 Engine Monitoring System by improving operator awareness and troubleshooting capability for maintainers. Address obsolescence, reliability and supportability of engine accessories to include Digital Electronic Control Unit (DECU), Fuel Metering Unit (FMU) and EVICS system which is comprised of Hydraulic Management Unit (HMU) and Integrated Digital Engine Control (IDEC). All of these units are vital to the engine fuel controls and engine functionality and performance. Conduct flight tests of the F402-RR-408 engine Low Pressure Compressor (LPC1) blade failures to mitigate blade stress. This testing assist is providing an immediate solution to the blade failures to increase safety of flight issues occurring in deployed squadrons in support of OCO.

Completed Dev Litening POD Dev and Integ	FY 2008	FY 2009	FY2010	
Accomplishments / Effort / Sub-total Cost	3.595	3.790	1.338	
RDT&E Articles Qty				

H5.0 Block Upgrade provides Dual Mode Laser Guided Bombs (DMLGB), Litening Centerline/Station 4 support the movement of the Litening targeting pod to the AV-8B centerline station allowing carriage of both left and right hand configured pods.(Improvement of current weapons carriage capability), Early Variable Message Format (VMF) Communication Development, H4.0/TAMMAC Software Trouble Reports.

EXHIBIT R-2a, RDT&E Project Justification				DATE:
				May 2009
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E,N / BA-5		0604214N, AV-8B AIRCRAFT - ENGINEERING DEVELOPMENT		0652, AV-8B
Completed STRIKELINK	FY 2008	FY 2009	FY2010	
Accomplishments / Effort / Sub-total Cost	5.728			
RDT&E Articles Qty				

The Strikelink (A) will enable digital transmission/reception of target data to/from the Strikelink/TACP-M and F/A 18 while decreasing workload on the Forward Air Controller. Migration to this solution will enable common CAS software between AV-8B and the CAS Strikelink/TACP-M systems ensuring Air-to-Ground and AV-8B to F/A-18 interoperability throughout the remaining AV-8B service life. The DVR will provide significant enhancement to mission record and post flight debrief capabilities. The Digital Video Recorder for AV-8B provides drop-in-O-level replacement to address sustainment issues, obsolescence mitigation, extended combat record time (increase from 2 hrs to 6 hrs), reduction in pilot and maintainer workload, reduced SE requirement (8mm playback viewer elimination), and reduction in supply chain management requirements. AV-8B Litening Pod to a common (AV-8B, F/A 18, EA-6B) marine expeditionary configuration to support USMC AV-8B deployment. This development effort ensures integration of evolving Litening Pod capabilities. This upgrade includes plug and play capability, which is a prerequisite for video downlink.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2008	FY 2009	FY 2010
P-1 # 29 APN BLI 051400, AV-8B Series Modification	44.537	83.646	63.964

D. 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 of 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: H2.0, H4.0, H5.0, H6.0, H7.0 H8.0 and following systems. The development and integration of JMPS/AVJMPS occurred concurrently with H2.0. Additional improvements are included in H4.0 TAMMAC is planned for incorporation into Block H4.0. H6.0 provides weapons carriage expansion efforts and the first step toward Battle Space Networking interoperability within the Netcentric OP-area. H7.0 provides the follow-on step toward an integrated air picture within the Battle Space Network via MIDS/RS-Link-16 participation within the GIG. H5.0 Block Upgrade provides Dual Mode Laser Guided Bombs (DMLGB), Litening Centerline/Station 4 (Improvement of current weapons carriage capability), 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.

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Exhibit R-3 Cost Analysis (page 1)										DATE:	
APPROPRIATION/BUDGET ACTIVITY										May 2009	
RDTE&E,N / BA-5											
PROGRAM ELEMENT											
0604214N, AV-8B AIRCRAFT - ENGINEERING DEVELOPMENT											
PROJECT NUMBER AND NAME											
0652, AV-8B											
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date				
PRODUCT DEVELOPMENT											
Primary Hdw Development	C-CPFF	MANAGEMENT SCIENCES, INC. ALBUQUERQUE NM	.464	3.174	Various	1.482	Various				
Primary Hdw Development	C-CPFF	ROLLS-ROYCE PLC, BRISTOL GB	15.142	2.584	Dec 2008	2.646	Dec 2009				
Primary Hdw Development	C-CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	1.465	.407	Feb 2009	.100	Feb 2010				
Primary Hdw Development	VARIOUS	Goodrich Power Systems, PITSTONE, BU	2.151	1.148	Various	5.925	Various				
Primary Hdw Development	WX	NAWCWD, CHINA LAKE CA	37.916	1.205	Dec 2008	.289	Dec 2009				
Primary Hdw Development	VARIOUS	VARIOUS	9.671	.750	Various	.750	Various				
Primary Hdw Development	C-CPFF	GE AVIATION DIGITAL SYSTEM, GRAND RAPIDS, MI	2.000	4.300	Feb 2009	1.634	Feb 2010				
Primary Hdw Development	C-CPFF	STAUDER, MI	3.000								
Systems Engineering	VARIOUS	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	4.710	.632	Various	.200	Dec 2009				
Systems Engineering	VARIOUS	VARIOUS	.520								
Systems Engineering	VARIOUS	NAWCWD, CHINA LAKE CA	1.073	.500	Oct 2008						
Systems Engineering	MIPR	WRIGHT PATTERSON AFB, DAYTON OH	.275								
SUBTOTAL PRODUCT DEVELOPMENT			78.387	14.700		13.026					

Remarks: Added General Electric Aviation Digital System

SUPPORT											
Configuration Mgmt	VARIOUS	VARIOUS	.397								
Engineering Technical Services	C-CPFF	EDO PROFESSIONAL SERVICES INC., ARLINGTON, VA	1.737	.384	Feb 2009	.384	Feb 2010				
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD	1.366	.441	Nov 2008	.441	Nov 2009				
Software Development	VARIOUS	DCMA BOEING ST LOUIS, ST LOUIS, MO	1.148								
Software Development	WX	NAWCWD, CHINA LAKE CA	6.612	1.300	Nov 2008						
Software Development	VARIOUS	VARIOUS	18.875								
Software Development	C-CPFF	NORTHROP GRUMMAN, IL	2.000								
Studies & Analysis	VARIOUS	VARIOUS	1.819	.220	Various	.225	Various				
Support	VARIOUS	DCMA BOEING ST LOUIS, ST LOUIS, MO	5.490	.200	Dec 2008						
Technical Data	C-CPFF	VARIOUS	1.748								
SUBTOTAL SUPPORT			41.192	2.545		1.050					

Remarks: Added General Electric Aviation Digital System

TEST & EVALUATION											
Developmental Test & Eval	C-CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO									
Developmental Test & Eval	WX	NAWCWD, CHINA LAKE CA	36.220	2.216	Various	.450	Various				
Operational Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	22.172			1.298	Jul 2010				
Operational Test & Eval	WX	NAWCWD, CHINA LAKE CA	.499	1.600	Various						
Test Assets	C-CPFF	GE AVIATION DIGITAL SYSTEM, GRAND RAPIDS, MI	.972	1.943	Feb 2009						
SUBTOTAL TEST & EVALUATION			59.863	5.759		1.748					

Remarks:

MANAGEMENT											
ENGINEERING & TECH SRVC (NON-F	C-CPFF	VARIOUS	1.326	.310	Jan 2009	.170	Jan 2010				
Government Engineering Support	WX	VARIOUS	4.765	1.304	Nov 2008	.560	Nov 2009				
MGT & PROF SUPPT SRVC (NON-PFR	C-CPFF	VARIOUS	2.891	.678	Nov 2008	.411	Nov 2009				
Program Management Support	WX	VARIOUS	2.616	.295	Various	.284	Various				
Travel	TO	VARIOUS	.537	.135	Various	.110	Various				
SUBTOTAL MANAGEMENT			12.135	2.722		1.535					

Remarks:

Total Cost			191.577	25.726		17.359					

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R-1 Shopping List Item No 81
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Exhibit R-4, Schedule Profile

May 2009

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDTE&N / BA-5	0604214N, AV-8B AIRCRAFT - ENG DEV			0652, AV-8B					
Schedule Profile		FY 2008	FY 2009	FY 2010					
ELMP CONTRACT AWARD		1Q	1Q	1Q					
H4.0 TAMMAC IOC		4Q							
H5.0 DMLGB,LITSTA4,VMF,STR SYS DEVELOPMENT		1Q-3Q							
H5.0 DT (LPOD)		1Q-2Q							
H5.0 OTRR		3Q							
H5.0 OT		3Q-4Q	1Q						
H5.0 S/W DELIVERY			4Q						
H5.0 IOC				1Q					
H6.0 WPNS CARRIAGE EXP COMM NETWORK SYS DEV		1Q-4Q	1Q-4Q	1Q-4Q					
H6.0 SRR		1Q							
H6.0 PDR		2Q							
H6.0 CDR			3Q						
H6.0 DT		4Q	1Q-4Q	1Q-3Q					
H6.0 OTRR				4Q					
H6.0 OT				4Q					
H6.0 S/W DELIVERY									
H6.0 IOC									
H7.0 WPNS CARRIAGE EXP COMM NETWORK SYS DEV				1Q-4Q					
H7.0 SRR				2Q					
H7.0 PDR				3Q					
H7.0 CDR									
H7.0 DT / IT									
H7.0 OTRR									
H7.0 OT									
H7.0 IOC									
H7.0 S/W DELIVERY									
H8.0 WPNS EXP AND OTHER ENHANCEMENTS									
H8.0 SRR									
H8.0 PDR									
H8.0 CDR									
H8.0 DT									
H8.0 OTRR									
H.8.0 OT									
H8.0 S/W Delivery									
H8.0 IOC									
RMP DISPLAY COMPUTER SYSTEM DEVELOPMENT		1Q-4Q	1Q-4Q	1Q-4Q					
RMP DISPLAY COMPUTER SRR			1Q						
RMP DISPLAY COMPUTER PDR			3Q						
RMP DISPLAY COMPUTER CDR				1Q					
RMP DISPLAY COMPUTER DT				1Q-4Q					
RMP DISPLAY COMPUTER OTRR									
RMP DISPLAY COMPUTER IOC									
RMP AIR DATA COMPUTER SYSTEM DEVELOPMENT									
RMP AIR DATA COMPUTER SRR									
RMP AIR DATA COMPUTER PDR									
RMP AIR DATA COMPUTER CDR									
RMP AIR DATA OTRR									
RMP AIR DATA DT									

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EXHIBIT R-2a, RDT&E Project Justification							DATE:		
							May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E,N / BA-5			0604214N, AV-8B AIRCRAFT - ENGINEERING DEVELOPME			2634 AV-8B (OSCAR)/Digital Improved Triple Ejector			
COST (\$ in Millions)			FY2008	FY 2009	FY 2010				
2634 AV-8B (OSCAR)/DITER*				3.977	3.527				
RDT&E Articles Qty									

* Prior years funding was reported under Program Element 0205633N, PU 3189.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Development of Digital I-TER	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost		3.977	3.527
RDT&E Articles Qty			

The Open Systems Core Avionics Requirements (OSCAR) initiative is replacing the Mission Computer and Store Management System with Commercial components and continued development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon. The Digital Improved Triple Ejector Rack (I-TER) provides for the increased capability to the existing BRU-42 I-TER for the AV-8B platform. This provides for multiple carriage capability for Smart weapons such as JDAM.

C. OTHER PROGRAM FUNDING SUMMARY:

	FY 2008	FY 2009	FY 2010
R-1# 178 RDTE PE 0205633N Aviation Improvemen	95.667	99.416	135.840

D. ACQUISITION STRATEGY: PEO(A) ADM Ser DPEO(A)-ACQ2/015-97 dated 6 March 1997 approved the MSII acquisition strategy for OSCAR as an ACAT IVT program. OSCAR avionics CDR was held in January 1998 and completed first flight 29 May 1998. Using the NAWC-WD CPAF contract, funds will be used for basic design definition, drawing development, and CFP development and test. Twelve Mission System Computers and fourteen Warfare Management Computer engineering models have been procured for laboratory and flight test. The NAWC-WD/Boeing follow-on CPAF Contract was awarded on 16 December 1998. The period of performance will be for five years based on the need to complete Open System Core Avionics Requirement (OSCAR) and begin follow-on software block upgrade H2.0. As directed during 4 September 1998 program restructuring, an ACAT redesignation letter was approved changing the OSCAR program from an ACAT IVT program to an ACAT II program. Acquisition documentation will be updated accordingly to include the funding in FY2009 and FY2010 for the incorporation of Dig I-TER within OSCAR.

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Exhibit R-3 Cost Analysis (page 1)										DATE:			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E,N / BA-5		0604214N, AV-8B AIRCRAFT - ENGINEERING DEVELOPMENT				2634, AV-8B OSCAR							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
PRODUCT DEVELOPMENT													
Primary Hdw Development	C-CPAF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	64.806										
Primary Hdw Development	C-CPFF	DCMC, Draper Laboratory, Cambridge, MA	.285										
Primary Hdw Development	C-FFP	DSC, KMX Norfolk	.406										
Systems Engineering	WX	NAWCWD, CHINA LAKE CA	40.893			.215	Nov 2009						
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD	3.239										
Systems Engineering	VARIOUS	PMA-209	4.448										
Award Fees	C-CPAF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	8.967										
SUBTOTAL PRODUCT DEVELOPMENT			123.044			.215							

Remarks:

SUPPORT													
Development Support Equipment	VARIOUS	VARIOUS	.284										
Integrated Logistics Sup	VARIOUS	VARIOUS	.323			1.000	Nov 2009						
Configuration Mgmt	VARIOUS	VARIOUS	.143										
Software Development	WX	NAWCWD, CHINA LAKE CA		1.666	Nov 2008								
Other Support	WX	VARIOUS		.743	Nov 2008								
SUBTOTAL SUPPORT			.750	2.409		1.000							

Remarks:

TEST & EVALUATION													
Developmental Test & Eval	WX	NAWCWD, CHINA LAKE CA	17.554	1.568	Nov 2008								
Developmental Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	2.813			1.880	Jul 2010						
SUBTOTAL TEST & EVALUATION			20.367	1.568		1.880							

Remarks:

MANAGEMENT													
Contractor Engineering Support	VARIOUS	VARIOUS	.402										
Travel	WX	NAWCAD, PATUXENT RIVER MD	.031										
SBIR Assessment			.165										
MGT & PROF SUPPT SRVC (NON-FFRC)	VARIOUS	VARIOUS				.432	Nov 2009						
SUBTOTAL MANAGEMENT			.598			.432							

Remarks:

Total Cost			144.759	3.977		3.527							

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EXHIBIT R4, Schedule Profile						DATE:								May 2009													
APPROPRIATION/BUDGET / PROGRAM ELEMENT						PROJECT NUMBER AND NAME																					
RDT&E, N / BA-5						0604214N, AV-8B AIRCRAFT - ENG DEV								2634, AV-8B (OSCAR)/Digital Improved Triple Ejector Rack													
Fiscal Year		FY 2008				FY 2009				FY 2010								FY 2012				FY 2013					
		1	2	3	4	1	2	3	4	1	2	3	4					3	4	1	2	3	4				
Acquisition Milestones														H60 Dig I TER OTRR ★													
System Development														Dig I-TER CDR ★													
														Dig I-TER													
Engine Life Management Program Contract Award																											
Software Deliveries																											
Test & Evaluation Milestones																											
Development Test														Dig I-TER DT / IT													
Operational Test														Dig I-TER C													

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE:				
					May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDT&E,N / BA-5		0604214N, AV-8B AIRCRAFT - ENG DEV			2634, AV-8B (OSCAR)/Digital Improved Triple Ejector Rack				
Schedule Profile			FY 2008	FY 2009	FY 2010				
Dig I-TER WPNS CARRIAGE EXP COMM NETWORK SYS DEV				1Q-4Q	1Q-4Q				
Dig I-TER CDR				3Q					
Dig I-TER DT / IT				3Q-4Q	1Q-4Q				
H6.0 Dig I-TER OTRR					4Q				
Dig I-TER OT					4Q				
H6.0 Dig I-TER S/W DELIVERY									

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604215N, STANDARDS DEVELOPMENT				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010						
Total PE Cost	103.976	66.517	53.540						
0572 JT SERVICE/N/V STD AVIONICS CP/SB	88.099	51.055	38.123						
1857 CALIBRATION STANDARDS	1.430	1.511	2.031						
2311 STORES PLANNING AND WEAPONEERING	10.442	10.198	12.416						
2312 COMMON HELICOPTERS	0.920	0.960	0.970						
9999 CONGRESSIONAL ADD	3.085	2.793							
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 Advanced Mission Computer & Display (AMC&D), GPWS/TAWS, and KC-130T AMP test articles. 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 Hull, Mechanical and Electrical (HM&E) systems as well as Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the DOD and Joint Services Meteorology 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 Hull, Mechanical and Electrical (HM&E) as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.									

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		BA-5	0604215N, STANDARDS DEVELOPMENT
Project 2311, Stores Planning and Weaponing Module: The Naval Aircraft Weaponing Components (NAWC) project, now referred to as the Weaponing and Stores Planning (WASP) components, are integrated software products that allow aircrew 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 N88 as a flight clearance implementation system for the F/A-18 A, A+, B, C, D, D (RC) , E, F, and EA-18G aircraft, and for all future aircraft T/M/S in the Joint Mission Planning System (JMPS). WASP components will alert pilots if their planned weapon release conditions meet flight clearance limits, 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. Weaponing capabilities are fundamental requirements for Interdiction, Armed RECCE and Close Air Support mission planning, therefore WASP product availability is critical to successful deployment of the Joint Mission Planning System (JMPS) Combat 1 OT&E for AV-8B JMPS framework; 1.4 OT&E for F/A-18 A-F and EA-18G. The WASP product encompasses a multitude of Government-Off-The-Shelf (GOTS) and Commercial-Off-The-Shelf (COTS) software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators), which are delivered as new targets are identified as emergent requirements for new aircraft T/M/S, stores and weapons are approved by N88, and new flight clearances and flight restrictions are issued by NAVAIRSYSCOM. Project 2312, Common Helicopters: Automated mission planning systems to date have focused on developing planning capabilities for fixed-wing aircraft, while the unique planning requirements for helicopters have not been fully 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), 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/Z, UH-1N/Y, H-46D/E, H 53D/E, H-60B/F/H/R/S, V-22 and VH-71. Common helicopter functionality will be developed for implementation in the Joint Mission Planning System (JMPS) after JMPS initial fielding. Project 9999, 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. Includes FY08 Congressional Add - Advanced Measurement 3.085.			

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	0604215N, STANDARDS DEVELOPMENT	

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:	107.114	71.920	41.046
Current President's Budget:	103.976	66.517	53.540
Total Adjustments	-3.138	-5.403	12.494

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-5.222	
SBIR/STTR/FTT Assessments			
Program Adjustments	-2.693		12.506
Rate/Misc Adjustments	-0.445	-0.181	-0.012
Subtotal	-3.138	-5.403	12.494

Schedule:

AMCD-AMC&D-A trade study was done to turn Fiber Channel Network System (FCNS) into a network processor. Due to the study, the requirement for F/A-18 went away and replaced with the V-22 Mission System Upgrade (MSU). The Open System Processor (OSP) Redesign was rolled into the V-22 MSU. As of the end of FY2008 the FY09 Development RFP and subsequent efforts have been delayed per direction of OPNAV.

CNS/ATM-F/A-18 E/F/G RNP RNAV Requirements Analysis was deleted. CNS/ATM-Platform Procurements and Deliveries were changed because there was an error in their schedule. The CNS/ATM RDT&E line ended in FY08.

TAC COM-GEN 5 SATCOM Integration Waveform/S/W/Development/Certification is starting 4th Qtr FY08. GEN 5 Hardware Development to provide growth provisions for SATCOM Pre-Planned Product Improvement (P3I) begins 4th Qtr FY08. This will allow continued fleet UHF SATCOM capability as the legacy UHF SATCOM system stands down.

GPWS-H-1 schedule change due to alignment with SCS 6.0 from SCS 5.0, Integration contract with Harris slid from 1Q FY09 to 4Q FY08 to align with SCS 6.0. H-60 schedule changes: IT&E slid to 4Q FY07-4Q FY08 due to delay in P3I IT&E start; added additional software version for correction of deficiencies found in flight test. H-1 Harris Integration has been delayed to 2nd Quarter FY09. Completion of the V-22 Requirements Definition efforts delayed per direction of OPNAV.

MFOQA-F/A-18C/D/E/F & E/A-18G: System Integration and Fielding durations were shortened to accommodate SECNAV's direction of acceleration. MH-60R/S & CH-53E: Per SECNAV's direction for acceleration, Requirements Development, System Integration, DT-D1 and fielding were shifted from 3rd Qtr FY09 to 3rd Qtr FY08, System Engineering Technical Review (SETR) events were added and Test Readiness Review (TRR) was moved from 4th Quarter FY08 to 1st Qtr 2009. T-45: The T-45 was moved to occur before MV-22B and Requirements Development, System Integration, DT-D1 and Fielding were moved from 1st Qtr FY12 to 3rd Qtr FY09; Added SETR events. MV-22B: MV-22B was moved to occur following T-45 introduction and Requirements Development, System Integration, DT-D1 and Fielding were moved from 1st Qtr FY12 to 3rd Qtr FY10; Added SETR events. MH-60R/S/CH-53E SRR/SFR has delayed from 1st Quarter of FY09 to 3rd Quarter FY09 which delays the MH-60R/S/CH-53E PDR from 2nd Quarter FY09 to 1st Qtr FY10, CDR from 4th Quarter FY09 to 3rd Quarter FY10 and TRR into FY11.

CAD-Per OPNAV N88, CAD development is cancelled due to lack of T/M/S aircraft requiring new displays.

AMP-CNS/ATM C-130 AMP. Due to programmatic delays of the CNS/ATM C-130 Avionics Modernization Program in April 2008, the SDD Contract Award, Test Kit Procurement, SRR, and PDR did not occur.

Collaborative Warfare-New Start in FY 10.
1857-Not Applicable

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	0604215N, STANDARDS DEVELOPMENT	

B. PROGRAM CHANGE SUMMARY CONTINUED:

Schedule Continued:	FROM	TO	REASON
1. Acquisition Milestone Changes:			
a. WASP V.1.1	Deleted		Historical
b. WASP V.1.2.1	1Q FY08		Became V.1.2.2
c. WASP V.1.2	3Q FY07	3Q FY08	Delay due to appropriate certification required
d. WASP V.1.2.2		2Q FY09	Formerly V.1.2.1
e. WASP V.1.2.3		2Q FY10	Program rebaselining
f. WASP V.AV-8B		4Q FY10	Program rebaselining

Corresponding change in Technical Evaluation (TECHEVAL) and Production Milestones have also been made.

2312: Not Applicable

9999: Not Applicable

Technical:
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT			PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SB			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	88.099	51.055	38.123					
RDT&E Articles Qty	2	2						
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), Aircrew Wireless Internal Communication Systems (AWICS), Tactical Communication (TAC COMM), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS), Military Flight Operational Quality Assurance (MFOQA), Common Avionics Displays (CAD), Collaborative Warfare and C/KC-130T CNS/ATM AMP. C/KC-130T CNS/ATM AMP objectives will be achieved through a comprehensive cockpit redesign. Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SP		
B. Accomplishments/Planned Program				
Mission Computer Upgrade	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	16.535	19.186	4.820	
RDT&E Articles Quantity	2	2		
AMC&D - Completion of AV-8B Upgrade Study and F/A-18 flight test and development activity. For V-22 Platforms, conduct Risk Reduction activities and design efforts to facilitate management of critical obsolescence issues and provide for implementation of V-22 Capability Development Document (CDD) requirements for avionics systems while also addressing netcentric warfare capability Key Performance Parameters (KPPs) via modernization of existing Advanced Mission Computer Shop Replaceable Assemblies (SRAs) and software which will be incorporated into the existing AMC family of Weapons Replaceable Assemblies (WRAs); also conducting research, development, integration, test and evaluation efforts to ensure a viable system baseline is maintained in support of new production requirements and perform platform integration studies and activities to expand user base.				
Development of AWICS Encrypted Module	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.795	0.200	0.000	
RDT&E Articles Quantity				
AWICS – Safety: Continue development and conduct testing of the Joint, Cooperative Encrypted Wireless Internal Communication System (ICS) system in cooperation with the U. S. Army led program.				
Integration/Certification of F-18, H-60, H-1	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.123	0.000	0.000	
RDT&E Articles Quantity				
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, and RNP/RNAV.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SP		
B. Accomplishments/Planned Program (Cont.)				
Provide Support to Tri-Service/Joint Programs	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.739	1.159	1.117	
RDT&E Articles Quantity				
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 Naval Aviation Requirements (NARG) panels and HFQMB.				
Develop Evolutionary Communication Systems	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	38.118	13.229	10.104	
RDT&E Articles Quantity				
Tactical Communications – Awarded integration study contracts for Tactical Communication systems within E-2 AHE (Advanced Hawkeye), H-1 and AV-8B along with Link-16 and Mobile Users Objective System (MUOS). Support all necessary tasks to ensure evolution of legacy communications systems incorporating programmable Communication Security/Information Assurance (COMSEC), Variable Message Format (VMF), MUOS, Satellite Communication (SATCOM), and Joint Precision and Landing System (JPALS) data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform (IW), Intelligence Broadcast System (IBS), JTRS, Tactical Networks, Datalinks and Link 16.				
Deliver GPWS H-60, Deliver TAWS H-1, V-22	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.798	6.800	6.101	
RDT&E Articles Quantity				
GPWS/TAWS - Continue development of GPWS/TAWS Collision Avoidance System (CAS) algorithm tailored to the platform performance and missions of the MH-60R, MH-60S, UH-1Y, AH-1Z and MV-22. Develop simulation models for UH-1Y and AH-1Z for use at manned flight simulator (MFS) and procure H-1 hardware for MFS. Evaluate MH-60R, MH-60S, V-22 and follow-on aircraft 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 OFF. Award H-1 Integration Contract Awards. Award V-22 Requirements Definition and Integration Contract. Initiate and complete H-60 DT and OT. Complete phase one (1) H-60 DT with current build and develop next build to correct identified deficiencies.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SP		

B. Accomplishments/Planned Program (Cont.)

Develop MFOQA for Increment 1 Platforms	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	12.608	10.481	10.977	
RDT&E Articles Quantity				

MFOQA - MFOQA will develop a baseline software integration framework using government procured software modules to perform functions such as flight data analysis, post mission aircrew debrief, aircraft maintenance and system troubleshooting, and mishap investigation. Initial MFOQA efforts will focus on F/A-18, EA-18G, H-60, H-53, V-22, T-45 with follow-on DoN air platforms added each year. Additional efforts will include software development and integration for fleet wide shore based and shipboard MFOQA implementation. Prepare and conduct MFOQA acquisition events for each aircraft TMS such as SRR, PDR, CDR, DT, Milestone C and follow-on Decision Reviews.

Develop family of common displays	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.469	0.000	0.000	
RDT&E Articles Quantity				

COMMON AVIONICS DISPLAYS - Per OPNAV N88 CAD development is cancelled due to lack of T/M/S aircraft requiring new displays.

Systems Development & Demonstration (SDD) Effort	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	7.914	0.000	0.000	
RDT&E Articles Quantity				

CNS/ATM C/KC-130T AMP - Avionics Modernization - Performed Source Selection for System Development & Demonstration (SDD) contract for kit procurement, installation, and integration.
NOTE: FY09 FUNDING WAS MOVED TO PE 0605430N, PROJECT UNIT 3199.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SP																	
B. Accomplishments/Planned Program (Cont.) <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="padding: 2px 5px;">Collaborative Warfare</td> <td style="padding: 2px 5px; text-align: center;">FY 08</td> <td style="padding: 2px 5px; text-align: center;">FY 09</td> <td style="padding: 2px 5px; text-align: center;">FY 10</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px 5px; text-align: center;">0.000</td> <td style="padding: 2px 5px; text-align: center;">0.000</td> <td style="padding: 2px 5px; text-align: center;">5.004</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;">RDT&E Articles Quantity</td> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;"></td> </tr> </table> Collaborative Warfare- Collaborative Warfare Process (CWP) will be used to ensure Naval Aviation warfighter needs drive coherent network investments. The process will use prioritized scenarios, missions, and threats to align Naval Aviation Enterprise (NAE) operational, science and technology (S&T), and acquisition communities to ensure network investments deliver warfighting capability. Execute a mission-focused collaborative warfare process to identify warfighting capability gaps and define Measures of Effectiveness (MOEs) to formulate solutions sets. Employ modeling, simulations, and analysis and focused, scalable technology demonstration to validate solutions. Develop POM/PR investment strategies leveraging existing programs and ensuring common systems and Open Architecture (OA) approaches contribute to solutions.					Collaborative Warfare	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.000	0.000	5.004		RDT&E Articles Quantity				
Collaborative Warfare	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.000	0.000	5.004																
RDT&E Articles Quantity																			

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 0572, JT SERVICE/NV STD AVIONICS CP/SP																	
C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>APN Line Item 057700, Common Avionics</td> <td style="text-align: right;">147.729</td> <td style="text-align: right;">148.501</td> <td style="text-align: right;">151.112</td> </tr> <tr> <td>APN Line Item 056000, C-130 Series</td> <td style="text-align: right;">29.323</td> <td style="text-align: right;">6.449</td> <td style="text-align: right;">22.449</td> </tr> <tr> <td>RDT&E,N 0605430N, C/KC-130 AMP</td> <td></td> <td style="text-align: right;">24.291</td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Advanced Mission Computer & Displays (AMC&D) sole-source cost contract to Bell Boeing Joint Program Office for EMD study and development activities in support of the V-22 Mission Systems Upgrade (MSU). Aircrew Wireless Internal Communication System (AWICS) acquisition strategy is aligned with the Army Wireless ICS developmental program resulting in a common system for use aboard multiple assault, logistics, Rotary Wing and Fixed Wing aircraft. 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. Tactical Communications is utilizing a firm fixed price contract to Rockwell Collins for research and development of the ARC-210 Gen 5 and other Navy contract vehicles for integration studies. The Navy will integrate systems and components to satisfy platform requirements to achieve tactical communication capability as determined by analyses. 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. MFOQA Government activities include 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 automated maintenance systems (e.g., AME, HUMS) and existing databases. The Navy conducted a full and open competition for both the MFOQA S/W development, integration and support contract as well as the commercial off the shelf S/W data analysis product. The USN/USMC CNS/ATM C-130 Avionics Modernization Program (AMP) will issue a Request for Proposal for full and open competition to modify its 48 C/KC-130T aircraft. The strategy is to utilize a single contract to perform both system integration and production. Market research has revealed several contractors with developed systems and experience in integration and installation providing significant competition to leverage off an existing commercial base. The requirements of the program can be met with COTS/NDI subsystems integrated into an AMP system. The program will enter the acquisition framework post MS-B for integration and test kit installation on one aircraft. Integrated testing will be utilized with a Full Rate Production Decision following successful test and MS-C decision.				Line Item No. & Name	FY 2008	FY 2009	FY 2010	APN Line Item 057700, Common Avionics	147.729	148.501	151.112	APN Line Item 056000, C-130 Series	29.323	6.449	22.449	RDT&E,N 0605430N, C/KC-130 AMP		24.291	
Line Item No. & Name	FY 2008	FY 2009	FY 2010																
APN Line Item 057700, Common Avionics	147.729	148.501	151.112																
APN Line Item 056000, C-130 Series	29.323	6.449	22.449																
RDT&E,N 0605430N, C/KC-130 AMP		24.291																	

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604215N, STANDARDS DEVELOPMENT			0572, JT SERVICE/NV STD AVIONICS CP/SP							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	SS-CPIF	BELL BOEING, AMARILLO, TX 79120		13.401	05/09	0.627	05/10						
Primary Hardware Development	C-CPFF	MANTECH, FAIRFAX, VA		2.239	11/08	5.429	11/09						
Primary Hardware Development	C-FFP/CPFF	BGI, LLC, DALLAS, TX		1.055	01/09	0.283	01/10						
Primary Hardware Development	SS- T&M	DCS CORPORATION, ALEXANDRIA, VA	2.820	1.000	11/08	1.386	11/09						
Primary Hardware Development	VARIOUS	VARIOUS	34.637	0.468	VARIOUS	1.477	VARIOUS						
Ancillary Hardware Development													
Aircraft Integration	SS-FFP	ROCKWELL COLLINS, INC., CEDAR RAPIDS, IA		5.360	11/08	3.294	01/11						
Aircraft Integration	SS-CPFF	BELL HELICOPTER TEXTRON INC, HURST, TX	5.465	2.544	01/09	0.800	01/10						
Aircraft Integration	WX	NAWCWD, CHINA LAKE, CA	5.273	1.157	11/08	0.300	11/09						
Aircraft Integration	VARIOUS	VARIOUS	38.311	0.525	VARIOUS	1.106	VARIOUS						
Ship Integration													
Ship Suitability													
Systems Engineering	WX	NAWCAD, PATUXENT RIVER, MD	14.439	2.672	VARIOUS	2.575	VARIOUS						
Systems Engineering	VARIOUS	VARIOUS	14.954	3.578	VARIOUS	3.347	VARIOUS						
Training Development	VARIOUS	VARIOUS		0.525	VARIOUS								
Licenses													
Tooling													
GFE													
Award Fees													
		FROM FY94-02	277.703										
Subtotal Product Development			393.602	34.524		20.624							
Remarks:													
Development Support	VARIOUS	VARIOUS	1.557	0.362	VARIOUS	0.337	VARIOUS						
Software Development													
Integrated Logistics Support	VARIOUS	VARIOUS	7.331	3.176	VARIOUS	2.034	VARIOUS						
Configuration Management													
Technical Data			0.735										
Studies & Analyses	VARIOUS	VARIOUS	6.947	0.255	VARIOUS	0.230	VARIOUS						
Studies & Analyses	TBD	TBD	4.113			4.716	VARIOUS						
GFE													
Award Fees													
		FROM FY94-02	24.636										
Subtotal Support			45.319	3.793		7.317							
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N, STANDARDS DEVELOPMENT			0572, JT SERVICE/NV STD AVIONICS CP/SP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	WX	NAWCAD, PATUXENT RIVER, MD	5.066	1.014	VARIOUS	0.238	VARIOUS					
Developmental Test & Evaluation	WX	NAWCWD, CHINA LAKE, CA	2.221	0.450	VARIOUS	0.999	VARIOUS					
Developmental Test & Evaluation	VARIOUS	VARIOUS	6.975									
Operational Test & Evaluation	VARIOUS	VARIOUS	1.973									
Live Fire Test & Evaluation												
Test Assets	VARIOUS	VARIOUS	1.776									
Tooling												
GFE												
Award Fees												
		FROM FY94-02	24.363									
Subtotal T&E			42.374	1.464		1.237						
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS	28.936	6.416	VARIOUS	4.728	VARIOUS					
Government Engineering Support	VARIOUS	VARIOUS	11.570	0.742	VARIOUS	0.946	VARIOUS					
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER, MD	6.626	0.854	VARIOUS	0.660	VARIOUS					
Program Management Support	VARIOUS	VARIOUS	7.943	0.344	VARIOUS	0.136	VARIOUS					
Program Management Support	WX	NAWCAD, PATUXENT RIVER, MD	7.160	2.803	VARIOUS	2.370	VARIOUS					
Travel	TO	NAVAIR, PATUXENT RIVER, MD	0.603	0.115	VARIOUS	0.105	VARIOUS					
Transportation												
SBIR Assessment												
Subtotal Management			62.838	11.274		8.945						
Remarks:												
Total Cost			544.133	51.055		38.123						
Remarks:												

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EXHIBIT R4, Schedule Profile												DATE:	May 2009
AMC&D													
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	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
RFP			▼			▽							
Development Contract Awards			▼			▽							
SRR						▽							
IBR							▽						
PDR								▽					
CDR									▽				
Software Builds										▽			
Test & Evaluation Milestones													
MSU Risk Reduction/Study			▼				▽						
MSU FY09 Development						▽							
Production Milestones													
Deliveries													

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Exhibit R-4a, Schedule Detail						DATE: May 2009		
AMC&D								
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 2008	FY 2009	FY 2010			
RFP			3Q	2Q				
Development Contract Awards			3Q	3Q				
Software Builds					4Q			
MSU Risk Reduction			3Q-4Q	1Q-4Q				
MSU FY09 Development				2Q-4Q	1Q-4Q			
SRR				2Q				
IBR				3Q				
PDR				4Q				
CDR					2Q			

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EXHIBIT R4, Schedule Profile													DATE:			
AWICS													May 2009			
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	FY 2008				FY 2009				FY 2010							
	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																
Product Development																
Test & Evaluation Milestones																
Production Milestones																
Deliveries																

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EXHIBIT R4, Schedule Profile													DATE:												
CNS/ATM													May 2009												
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	FY 2008				FY 2009				FY 2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
F/A-18E/F Integration Mode S																									
MH-60S Integration Mode S																									
MH-60R Integration Mode S																									
AH-1Z Integration Mode S																									
UH-1Y Integration Mode S																									
Production Milestones																									
Platform Procurements (S/W upgrades ONLY)																									
Deliveries (S/W upgrades)																									

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EXHIBIT R4, Schedule Profile												DATE:		
TACTICAL COMMUNICATIONS												May 2009		
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	2008				2009				2010					
	1	2	3	4	1	2	3	4	1	2	3	4		
Acquisition Milestones														
Gen 5 Development							Req & Design							
Gen 5 Integration														
Gen5 Design Reviews/Certifications		▲				▲		△	△		△			
		S/W CDR				TRR		NSA CERT	JITC CERT		PRODUCTION STARTS			
Gen 5 First Article Test & SW Verification						▲								
						BENCH TEST SVT								
Test & Evaluation Milestones														
Gen 5 SATCOM Integrated Waveform/ S/W/Development/Certification														▲
														JITC CERT
Gen 5 SATCOM P3I H/W Dev														
Gen 5 National Security Agency/ Information Assurance														
Gen 5 Crypto Algorithm Assess/Dev														
Production Milestones														

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EXHIBIT R4, Schedule Profile												DATE:				
GPWS/TAWS												May 2009				
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	2008				2009				2010							
	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones H-60 Government Software Development					H-60 Govt S/W Development ■											
H-1 Government Software Development					H-1 Harris Integration Contract ▲			H-1 WSSA Integration								
	H-1 Requirements Definition								H-1 Govt S/W Development/Integration							
V-22 Government Software Development								V-22 Integration Contract △								
	V-22 Requirements Definition								V-22 Govt Software Development/ Integration							
Test & Evaluation Milestones Developmental Test					H-60 Integrated Test & Evaluation ■											
Production Milestones																
Deliveries																

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EXHIBIT R4, Schedule Profile												DATE:			
CAD												May 2009			
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	FY 2008				FY 2009				FY 2010						
	1	2	3	4	1	2	3	4	1	2	3	4			
Acquisition Milestones															
	Pre-SPR w/Staff		SPR with AIR 1.0												
Tech Demo															
Contract Events															
Engineering Events															
Test & Evaluation Milestones															
Test Activities															
Production Milestones															
Deliveries															

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EXHIBIT R4, Schedule Profile												CNS/ATM C/KC-130T AMP				DATE: May 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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EXHIBIT R4, Schedule Profile												DATE:		May 2009											
Collaborative Warfare																									
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	FY 2008				FY 2009				FY 2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
Activity/ Milestones									FY13CW CYCLE																
Warfighting Gap Analysis																									
Candidate Solution ID																									
Candidate Evaluation (M&S)																									
Candidate Prioritization & Selection																									
Investment Strategy																									

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Exhibit R-4a, Schedule Detail					DATE: May 2009			
Collaborative Warfare								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RD&E,N / BA-5	0604215N, STANDARDS DEVELOPMENT				0572, JT SERV/NV STD AVION CP/SB			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Warfighting Gap Analysis			1Q-2Q					
Candidate Solution Identification			2Q-3Q					
Candidate Evaluation (Modeling & Sim)			2Q-4Q					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT			PROJECT NUMBER AND NAME 1857, CALIBRATION STANDARDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	1.430	1.511	2.031					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project is a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Hull, Mechanical and Electrical (HM&E) systems as well as Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the DOD and Joint Services Meteorology 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 Hull, Mechanical and Electrical (HM&E) as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

B. Accomplishments/Planned Program

Product Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.430	1.511	2.031	
RDT&E Articles Quantity				

FY 2008 Plan:
 (\$1.130) Continue development of 2 new calibration standards (hardware) in support of chemical biological detection systems, reduce crew size initiatives, and shipboard communication systems.
 (\$.300) Continue development of standards for wireless micro electrical mechanical systems (MEMS) sensors.

FY 2009 Plan:
 (\$1.211) Complete 1 calibration standard (hardware) in support of chemical biological detection systems, reduce crew size initiatives, and shipboard communication systems and continue to development of 1 additional standard.
 (\$.300) Continue development of standards for wireless micro electrical mechanical systems (MEMS) sensors and analytical metrology.

FY 2010 Plan:
 (\$1.303) Continue development of 3 new calibration standards in support of chemical biological detection systems.
 (\$.300) Begin development of standards in support for wireless micro electrical mechanical sensors (MEMS) in support of the next generation DD(X) ships and Smart Carriers.
 (\$.428) Complete (1) calibration standard Hardware in support of chemical and biological systems and (1) high power laser attenuator in support of optical tests.

C. OTHER PROGRAM FUNDING SUMMARY:
 Not Applicable

D. ACQUISITION STRATEGY:
 Not Applicable

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604215N, STANDARDS DEVELOPMENT			1857, CALIBRATION STANDARDS							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	WX	NSWC, CORONA DIVISION	1.025	0.916	VARIOUS	1.399	VARIOUS						
Ancillary Hardware Development													
Aircraft Integration													
Ship Integration													
Ship Suitability													
Systems Engineering													
Training Development													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			1.025	0.916		1.399							
Remarks:													
Development Support													
Software Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
Studies & Analyses													
Studies & Analyses													
GFE													
Award Fees													
Subtotal Support			0.000	0.000		0.000							
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, STANDARDS DEVELOPMENT				PROJECT NUMBER AND NAME 1857, CALIBRATION STANDARDS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Developmental Test & Evaluation													
Developmental Test & Evaluation													
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							
Remarks:													
Contractor Engineering Support	WX	NSWC, CORONA DIVISION	0.472	0.292	VARIOUS	0.295	VARIOUS						
Government Engineering Support	WX	NSWC, CORONA DIVISION	1.262	0.283	VARIOUS	0.317	VARIOUS						
Government Engineering Support													
Program Management Support													
Program Management Support													
Travel	TO	NSWC, CORONA DIVISION	0.018	0.020	VARIOUS	0.020	VARIOUS						
Transportation													
SBIR Assessment													
Subtotal Management			1.752	0.595		0.632							
Remarks:													
Total Cost			2.777	1.511		2.031							
Remarks:													

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
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 2008	FY 2009	FY 2010					
2311 STORES PLANNING AND WEAPONNEERING	10.442	10.198	12.416					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project 2311, Stores Planning and Weaponneering Module: The Naval Aircraft Weaponneering Components (NAWC) project, now referred to as the Weaponneering 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 N88 as a flight clearance implementation system for the F/A-18 A, A+, B, C, D, D (RC) , E, F, and G aircraft, and for all future aircraft T/M/S in the Joint Mission Planning System (JMPS). WASP components will alert pilots if their planned weapon release conditions meet flight clearance limits, 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. Weaponneering capabilities are fundamental requirements for Interdiction, Armed RECCE and Close Air Support mission planning, therefore WASP product availability is critical to successful deployment of the Joint Mission Planning System (JMPS) Combat 1 OT&E for AV-8B JMPS framework; 1.4 OT&E for F/A-18 A-G. The WASP product encompasses a multitude of Government-Off-The-Shelf (GOTS) and Commercial-Off-The-Shelf (COTS) software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators), which are delivered as new targets are identified as emergent requirements for new aircraft T/M/S, stores and weapons are approved by N88, and new flight clearances and flight restrictions are issued by NAVAIRSYSCOM.

R-1 SHOPPING LIST - Item No. 82

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, STANDARDS DEVELOPMENT	PROJECT NUMBER AND NAME 2311, WASP		
B. Accomplishments/Planned Program				
Product Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	7.341	5.427	7.404	
RDT&E Articles Quantity				
Product Development - Includes associated system engineering design, development, installation, integration and software development for WASP components V1.2, V1.2.2, V1.2.3, V.1.2.4, V3.0 to support F/A-18 A-F and EA-18G, AV-8B and helicopters. Define requirements to integrate WASP components into the Joint Mission Planning System (JMPS). Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing, safe escape for application to WASP. Provide government Joint Munitions Effectiveness Manual (JMEM) engineering support (JMEM Subject Matter Experts) for integration of new JMEM capabilities into WASP. Provide analysis of new requirements, allocation of requirements, design oversight, and life cycle management of the WASP program. Develop new aircraft configuration, aircraft loading, weapon optimization, store release and delivery planning components for F/A-18 A-F, EA-18G AV-8B and helicopters as new flight clearances and flight restrictions issued by NAVAIRSYSCOM. Provide configuration management, system administration, quality assurance, documentation, metrics and software risk management for WASP. Acquire, integrate and modify numerous GOTS/COTS software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators, etc.) that are used as GFI for the WASP software development. Integrate WASP with JSOW/JDAM/SLAM-ER and other weapons mission planning systems as required.				
Test and Evaluation	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.728	3.284	3.475	
RDT&E Articles Quantity				
Test and Evaluation (T&E) - 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 V1.2, V1.2.2, V1.2.3, V1.2.4 WASP V3.0 and AV-8B). Provide T&E support for guided weapons and Joint Munitions Effectiveness Manual (JMEM) accreditation. Provide JMPS Mission Planning Environment (MPE) Integration test support. Provide testing and test support to ensure all (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), DITACAP/C&A, NMCI, DII COE, 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.				
Program Management	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.373	1.487	1.537	
RDT&E Articles Quantity				
Program Management - Provide program management, which includes WASP acquisition documentation development and support, cost, schedule and performance management, contracting support (providing contract administration, preparing contract packages for award.), compliance with external directives and providing financial support (accept, obligate, commit, and track funding). Provide travel for WASP Government personnel. Continue performing project management support for this program throughout the FYDP.				

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CLASSIFICATION:

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

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
PE2086F Air Force Mission Planning Systems	104.575	97.56	98.574

D. ACQUISITION STRATEGY:

Weaponneering and Stores Planning (WASP) products, delivered annually, were developed in-house by NAVAIR (NAWCAD and NAWCWD) engineers and support. The team has now migrated to a smaller government team that provides functional expertise in aircraft safety-of-flight (air-vehicle stores compatibility, weapons sequencing, flutter, ground/flight loads, authorized fuze arm times, aircraft safe escape), guided weapons employment and weapons effects against targets. With the majority of work conducted by the various contractors. WASP utilizes the Mission Planning Enterprise Contract (MPEC). The various government, engineering, test, and support facilities (test facilities, functional qualification testing and certification/accreditation test) are supplemental with contract labor procured predominately through BPA contracts.

E. MAJOR PERFORMERS:

Not Applicable

R-1 SHOPPING LIST - Item No. 82

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N, STANDARDS DEVELOPMENT			2311, WASP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Product Development												
Product Development	WX	NAWCAD, PAX RIVER, MD	16.620	0.325	11/08	0.350	11/09					
Product Development	WX	NAWCWD, CHINA LAKE CA	0.448	0.472	11/08	0.575	11/09					
Systems Engineering	WX	NAWCAD, PAX RIVER MD	8.182	0.565	11/08	0.555	11/09					
Systems Engineering	WX	NAWCWD, PT MUGU CA	0.000	0.370	11/08	0.391	11/09					
Primary Software Development	CPFF	*MPEC, HANSCOM AFB	9.951	1.504	11/08	2.927	11/09					
Product Development	CPFF	VARIOUS	25.509	2.191	11/08	2.606	11/09					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			60.710	5.427		7.404						
Remarks: *Mission Planning Environment Contract (MPEC) Dollars may not add due to rounding.												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000						
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604215N, STANDARDS DEVELOPMENT			2311, WASP							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Test & Evaluation													
Test & Evaluation	WX	NAWCAD, PAX RIVER MD	15.695	1.777	11/08	1.804	11/09						
Test & Evaluation	WX	NAWCWD, CHINA LAKE CA	0.352	0.036	11/08	0.074	11/09						
Test & Evaluation	WX	NAWCWD, PT MUGU CA	0.100	0.457	11/08	0.471	11/09						
Test & Evaluation	CPFF	VARIOUS		1.014	11/08	1.126	11/09						
GFE													
Award Fees													
Subtotal T&E			16.147	3.284		3.475							
Remarks: Dollars may not add due to rounding.													
Management													
Government Engineering Support	WX	NAWCAD, PAX RIVER MD	3.771	0.181	11/08	0.185	11/09						
Government Engineering Support	WX	NAWCWD, CHINA LAKE CA	1.098										
Program Management Support	WX	NAWCAD, PAX RIVER MD	7.312	1.233	11/08	1.275	11/09						
Program Management Support	WX	NAWCWD, PT MUGU CA	0.051	0.030	11/08	0.032	11/09						
Travel	WX	NAWCAD, PAX RIVER MD	1.170	0.043	11/80	0.045	11/09						
Subtotal Management			13.402	1.487		1.537							
Remarks: Dollars may not add due to rounding.													
Total Cost			90.259	10.198		12.416							
Remarks:													

EXHIBIT R4, Schedule Profile																							DATE:					
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 Weaponneering Module								
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones																												
WASP V.1.2 Release (F/A-18A/B/C/D/E/F)			▲																									
WASP V.1.2.2 Release (F/A-18A/B/C/D/E/F)						▲																						
WASP V.1.2.3 Release (F/A-18A/B/C/D/E/F)											△																	
WASP V.AV-8B Release												△																
Test & Evaluation Milestones																												
WASP V.1.2 (F/A-18A/B/C/D/E/F)	■																											
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)		■	■	■																								
WASP V.1.2.3 (F/A-18A/B/C/D/E/F/G)								■	■	■																		
WASP V.AV-8B										■	■	■	■	■														
WASP V.1.2.4 (F/A-18A/B/C/D/E/F/G)												■	■	■														
WASP V3.0 (F/A18A/B/C/D/E/F/G)/JMPS Integration												■	■	■														
Production Milestones																												
WASP V.1.2 (F/A-18A/B/C/D/E/F)	■	■																										
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)		■	■																									
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)			■	■	■	■																						
WASP V.AV-8B	■	■	■	■	■	■	■	■	■																			
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)											■	■	■															
WASP V3.0 (F/A18A/B/C/D/E/F/G)/JMPS Integration	■	■	■	■	■	■	■	■	■	■																		
WASP V3.1 (F/A-18A/B/C/D/E/F/G & AV-8B)											■	■	■	■	■													

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Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT 0604215N Standard Development				PROJECT NUMBER AND NAME 2311 WASP			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Acquisition Milestones								
WASP V.1.2 Release (F/A-18A/B/C/D/E/F)	3Q							
WASP V.1.2.2 Release (F/A-18A/B/C/D/E/F)		2Q						
WASP V.1.2.3 Release (F/A-18A/B/C/D/E/F)			2Q					
Technical Evaluation (TECHEVAL)								
WASP V.1.2 (F/A-18A/B/C/D/E/F)	1Q							
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)	2Q-4Q	1Q						
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)		3Q-4Q	1Q					
WASP V.AV-8B			1Q-4Q					
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)			3Q-4Q					
WASP V3.0 (F/A-18A/B/C/D/E/F/G) JMPS Integratrtion			3Q-4Q					
Production Milestones								
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)	1Q-2Q							
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)	3Q-4Q	1Q-2Q						
WASP V.AV-8B	1Q-4Q	1Q-4Q						
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)			1Q-3Q					
WASP V3.0 (F/A-18A/B/C/D/E/F/G) JMPS Integratrtion	1Q-4Q	1Q-4Q	1Q-2Q					
WASP V3.1 (F/A-18A/B/C/D/E/F/G & AV-8B)			1Q-4Q					

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604216N, MULTI-MISSION HELICOPTER UPGRADE			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	74.205	69.839	81.953					
1707 MMH UPGRADE DEV RDT&E	74.205	69.839	81.953					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The MH-60R primary mission areas include Anti-Submarine Warfare (ASW) and Surface Warfare (SUW). Secondary mission areas include Search and Rescue (SAR), Vertical Replenishment (VERTREP), Naval Surface Fire Support (NSFS), logistics support, personnel transport and Medical Evacuation (MEDEVAC). The MH-60R provides direct support to the Carrier Strike Group and provides Link Communications Relay (COMREL) via VHF/UHF, Link-16, and Common Data Link (CDL) with the incorporation of Interface Design Specification (IDS) (SAU-07-000) full data exchange via CDL. Ku-Band will be provided to DDG-1000, CVN-78 Class and LCS platforms. Aircraft Ship Integrated Secure and Traverse (ASIST) reduces operational requirements aboard ships by eliminating need for hauldown capability and providing automatic movements and aircraft on deck. IFF Mode 5 Interrogator capability is being embedded in the APS-147 radar to provide positive determination of friendly combatants beyond visual range. The MH-60R is Post-Milestone III and executing Pre-Planned Product Improvements (P3I) to Air Vehicle and Mission systems. P3I includes upgrades to communication, navigation, Identification Friend or Foe (IFF), Multi-Spectral Targeting System (MTS)/Forward Looking Infrared Radar (FLIR) to include Automatic Radar Periscope Detection and Discrimination (ARPDD), weapons, data link, safety, maintenance, airframe and mission planning systems. IFF Mode 5 Interrogator capability is being embedded in the APS-147 Radar to provide positive determination of friendly combatants beyond visual range. ARPDD funding prior to FY2008 was in PE 0604261N/4017.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604216N, MULTI-MISSION HELICOPTER UPGRADE																																													
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY08</th> <th style="text-align: right;">FY09</th> <th style="text-align: right;">FY10</th> </tr> </thead> <tbody> <tr> <td>Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY09 President's Budget:</td> <td style="text-align: right;">76.482</td> <td style="text-align: right;">70.329</td> <td style="text-align: right;">45.649</td> </tr> <tr> <td>FY10 President's Budget:</td> <td style="text-align: right;">74.205</td> <td style="text-align: right;">69.839</td> <td style="text-align: right;">81.953</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-2.277</td> <td style="text-align: right; border-top: 1px solid black;">-0.490</td> <td style="text-align: right; border-top: 1px solid black;">36.304</td> </tr> </tbody> </table> Summary of Adjustments <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Adjustments</td> <td></td> <td style="text-align: right;">-0.300</td> <td></td> </tr> <tr> <td>SBIR/STTR/FTT Assessments</td> <td style="text-align: right;">-0.121</td> <td></td> <td></td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: right;">-2.156</td> <td></td> <td style="text-align: right;">36.313</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-0.190</td> <td style="text-align: right;">-0.009</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-2.277</td> <td style="text-align: right; border-top: 1px solid black;">-0.490</td> <td style="text-align: right; border-top: 1px solid black;">36.304</td> </tr> </tbody> </table> Schedule: Schedule added: ARPDD SDD Contract 3Q/08. Schedule added: ARPDD SDD 3Q/08 and beyond. Schedule change: Common Data Link (CDL) Integrated Test moved from 3Q/08-3Q/09 to 4Q/08-2Q/09 due to delayed NRE effort. Schedule added: ARPDD Preliminary Design Review (PDR) 1Q/09. Schedule change: Production Deliveries for Lots V-IX moved from 3Q/08 to 1Q/09 due to Lot IV moving to 4Q/08. Schedule added: ARPDD Critical Design Review (CDR) 3Q/09. Schedule added: SAU-07-000 Test begins 3Q/10 Technical: Not Applicable				FY08	FY09	FY10	Funding:				FY09 President's Budget:	76.482	70.329	45.649	FY10 President's Budget:	74.205	69.839	81.953	Total Adjustments	-2.277	-0.490	36.304	Congressional Rescissions				Congressional Adjustments		-0.300		SBIR/STTR/FTT Assessments	-0.121			Program Adjustments	-2.156		36.313	Rate/Misc Adjustments		-0.190	-0.009	Subtotal	-2.277	-0.490	36.304
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604216N, MULTI-MISSION HELICOPTER UPGRADE			PROJECT NUMBER AND NAME 1707, MMH UPGRADE DEV RDT&E			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
1707 MMH UPGRADE DEV RDT&E	74.205	69.839	81.953					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The MH-60R primary mission areas include Anti-Submarine Warfare (ASW) and Surface Warfare (SUW). Secondary mission areas include Search and Rescue (SAR), Vertical Replenishment (VERTREP), Naval Surface Fire Support (NSFS), logistics support, personnel transport and Medical Evacuation (MEDEVAC). The MH-60R provides direct support to the Carrier Strike Group and provides Link Communications Relay (COMREL) via VHF/UHF, Link-16, and Common Data Link (CDL) with the incorporation of Interface Design Specification (IDS) (SAU-07-000) full data exchange via CDL. Ku-Band will be provided to DDG-1000, CVN-78 Class and LCS platforms. Aircraft Ship Integrated Secure and Traverse (ASIST) reduces operational requirements aboard ships by eliminating need for hauldown capability and providing automatic movements and aircraft on deck. The MH-60R is Post-Milestone III and executing Pre-Planned Product Improvements (P3I) to Air Vehicle and Mission systems. P3I includes upgrades to communication, navigation, Identification Friend or Foe (IFF), Multi-Spectral Targeting System (MTS)/Forward Looking Infrared Radar (FLIR) to include Automatic Radar Periscope Detection and Discrimination (ARPDD), weapons, data link, safety, maintenance, airframe and mission planning systems. IFF Mode 5 Interrogator capability is being embedded in the APS-147 Radar to provide positive determination of friendly combatants beyond visual range. ARPDD funding prior to FY2008 was in PE 0604261N/4017.								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604216N, MULTI-MISSION HELICOPTER UPGRADE	PROJECT NUMBER AND NAME 1707, MMH UPGRADE DEV RDT&E	
B. Accomplishments/Planned Program			
Avionics H/W and S/W Development	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	40.462	42.173	45.261
RDT&E Articles Quantity			
Supports aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations, and repairs in support of the test program. Provides for ILS support and Program Management Board Support and subvendor support. Avionics hardware and software development and integration to include: P3I/Link-16, Radar (ARPDD), IFF Mode 5 interrogator, Communications, GPS, Acoustics and post processing. Mission planning, MTS/FLIR, Weapons, Stores and self defense, Data fusion, and Logistics products including Integrated Electronic Technical Manuals (IETMS). ARPDD 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			
Engineering, Integration, and Testing	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	1.000	1.600	
RDT&E Articles Quantity			
Airframe test articles, engineering support, GFE, and risk management board support. Integration and testing of P3I. ASIST integration to support aircraft movement aboard ships.			
Common Data Link	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	8.240	5.070	14.372
RDT&E Articles Quantity			
Avionics P3I Upgrade for the Common Data Link (CDL) and reversability between C-Band and KuBand software design interface (SAU-07-000) provides connectivity and full data exchange with DDG-1000, LCS and CVN-78 Class.			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604216N, MULTI-MISSION HELICOPTER UPGRADE	PROJECT NUMBER AND NAME 1707, MMH UPGRADE DEV RDT&E	
B. Accomplishments/Planned Program (Cont.)			
Engineering and Logistics	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	9.470	12.048	13.672
RDT&E Articles Quantity			
Engineering specialists, integrated logistics support, Government Furnished Equipment (GFE), Systems Engineering, Program Management, Contractor Support Services, Travel as required to support the MH-60R development program and test activities.			
Avionics Testing and Evaluation	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	15.033	8.948	8.648
RDT&E Articles Quantity			
MH-60R Mission Avionics testing, Avionics Mission P3I, ARPDD, and IFF Mode 5 Interrogator testing and evaluation efforts.			

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604216N, MULTI-MISSION HELICOPTER UPGRADE	1707, MMH UPGRADE DEV RDT&E	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
APN-1 BLI: 018200	1,069.637	1,190.243	943.285
APN-6 BLI: 060510	9.135		1.841
APN-5 OSIPs 001-06, & 009-09	22.395	25.413	34.260

Related RDT&E
0604507N Enhanced Modular Signal Processor
0604212N Other Helo Development
0604261N Acoustics Search Sensors

D. ACQUISITION STRATEGY:

Initial Operating Capability (IOC) was achieved in Dec 05 and the MSIII, Full Rate Production (FRP) decision occurred in March 2006. As the SH-60B and SH-60F reach the end of their service life, the MH-60R serves as the replacement weapon system. The MH-60R weapon system began fielding in FY2006. The mission systems include Common Cockpit, ALFS, sonobuoy launcher, COTS AP, ESM, MTS/FLIR system, MMR, ARPDD, CDL Hawklink, ISD and weapons capability. Pre-Planned Product Improvement (P3I) upgrades will be integrated, tested, and fielded to ensure increased capabilities are provided to the Fleet User.

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604216N, MULTI-MISSION HELICOPTER UPGRADE			1707, MMH UPGRADE DEV RDT&E							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
PRODUCT DEVELOPMENT													
GFE	VARIOUS	VARIOUS	4.688										
Primary Hdw Dev, Airframe (SAC)	SS-CPAF	SIKORSKY, STRATFORD CT	79.577	1.600	03/09								
Primary Hdw Dev, Avionics (LMSI)	SS-CPFF	LOCKHEED MARTIN, OWEGO,	725.057	42.173	11/08	45.261	Various						
Primary Hdw Dev, Avionics CDL	SS-CPAF	HARRIS, MELBOURNE, FL	43.374	2.070	11/08								
Primary Hdw Dev, Avionics SAU	SS-CPIF	LOCKHEED MARTIN, OWEGO		3.000	02/09	2.000	02/10						
Primary Hdw Dev, Avionics CDL	TBD	TBD				12.372	03/10						
All Product Dev Cost from FY93-FY08	VARIOUS	VARIOUS	149.181										
Subtotal Product Development			1,001.877	48.843		59.633							
Remarks:													
SUPPORT													
Government Eng Technical Ser	WX	NAWCAD, PAX RIVER MD	2.832	3.022	11/08	5.285	11/09						
Government Eng Technical Ser	WX	NAWCWD, CHINA LAKE CA	4.716	5.097	11/08	3.745	11/09						
Government Eng Technical Ser	WX	PACIFIC MISSILE RANGE,	0.063	1.000	11/08	1.487	11/09						
Government Eng Technical Ser	VARIOUS	VARIOUS	0.839	1.369	11/08	1.545	11/09						
All Product Dev Cost from FY93-FY08	VARIOUS	VARIOUS	123.294										
Subtotal Support			131.744	10.488		12.062							
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-5			PROGRAM ELEMENT 0604216N, MULTI-MISSION HELICOPTER UPGRADE			PROJECT NUMBER AND NAME 1707, MMH UPGRADE DEV RD&E							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TEST & EVALUATION													
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER MD	114.358	7.448	11/08	8.398	11/09						
Operational Test & Evaluation	WX	COMOPTEVFOR	9.522	1.500	11/08	0.250	11/09						
All T&E Cost from FY93-FY08	VARIOUS	VARIOUS	11.688										
Subtotal T&E			135.568	8.948		8.648							
Remarks:													
MANAGEMENT													
Contractor Eng Support-ETS (NON-FFRDC)	VARIOUS	VARIOUS	24.266	0.910	11/08	0.910	11/09						
Travel	WX	NAWCAD, PAX RIVER MD	3.398	0.650	11/08	0.700	11/09						
All Management Cost from FY93-FY08	VARIOUS	VARIOUS	9.667										
Subtotal Management			37.331	1.560		1.610							
Remarks:													
Total Cost			1,306.520	69.839		81.953							
Remarks:													

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UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604218N Air/Ocean Equipment Engineering			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	4.738	5.731	7.485					
2345 Fleet METOC Equipment	3.236	4.064	4.827					
2346 METOC Sensor Engineering	1.502	1.667	2.658					
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. Funding increases in FY10 reflect 1) the beginning of the System Development and Demonstration (SDD) phase of the Littoral Battlespace Sensing - Autonomous Undersea Vehicle (LBS-AUV) portion of the Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) program (2345 Fleet METOC Equipment), and 2) increased technique & deployment development efforts in support of the Unmanned Aerial Vehicle (UAV) automated Meteorological and Oceanographic (METOC) sensors project (2346 METOC Sensor Engineering).								

EXHIBIT R-2, RDT&E Budget Item Justification

EXHIBIT R-2, RDT&E Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
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 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	3.236	4.064	4.827					
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 war fighters 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), NITES Next Generation (Next), the Marine Corps Meteorological Mobile Facility Replacement (METMF(R)), METMF(R) Next Generation (NEXGEN), the Environmental Satellite Receiver Processor (ESRP) (comprised of AN/SMQ-11 (sea and shore configuration) and AN/FMQ-17 (shore configuration)) satellite data receiver/recorder. This project also exploits new government off-the-shelf (GOTS)/commercial off-the-shelf (COTS) technologies, tactical sensors 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 includes development of warfare specific mission planning modules to support unmanned systems with integration of data from environmental and tactical sensor systems, model forecast information and Geospatial Information & Services Databases. This project also supports development of autonomous environmental sensing systems for situational awareness and tactical decision aid/mission planner support, as well as iridium and advanced satellite communication integration in meteorological and oceanographic (METOC) sensor, vehicle control and mission planning systems that will be required to achieve full reach back capability. Funding increase in FY10 reflects the beginning of the System Development and Demonstration (SDD) phase of the Littoral Battlespace Sensing - Autonomous Undersea Vehicle (LBS-AUV) portion of the Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) program.								

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																
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) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="padding: 5px;">Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)</td> <td style="padding: 5px; text-align: center;">FY 08</td> <td style="padding: 5px; text-align: center;">FY 09</td> <td style="padding: 5px; text-align: center;">FY 10</td> <td style="padding: 5px; text-align: center;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px; text-align: center;">0.597</td> <td style="padding: 5px; text-align: center;">1.065</td> <td style="padding: 5px; text-align: center;">1.817</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY08 - Began technical evaluation and selection of autonomous ocean and atmospheric sensor packages; performed sensor package capability demonstration testing. Developed Hazardous Weather Detection and Display Capability (HWDDC), and Tactical Environmental Processor (TEP) data collection and fusion systems. FY09 - Continuation of FY08 efforts. Conduct system development and demonstration for environmental equipment to include associated engineering and support efforts. Continue development advanced tools and techniques for METOC asset allocation, METOC decision support applications and interfaces to tactical and strategic decision aids. Develop the Hazardous Weather Detection and Display Capability (HWDDC), Tactical Environmental Processor (TEP), and Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) data collection and fusion systems. FY10 - Continuation of FY09 efforts. Continue advanced tools and techniques for METOC asset allocation, METOC decision support applications and interfaces to tactical and strategic decision aids along with component and prototype efforts associated with acquiring environmental data. Development of an end-to-end methodology to collect, fuse, and integrate these data into Navy and DoD networks and command and control nodes. Continue development of Tactical Environmental Processor (TEP), and Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) data collection and fusion systems.				Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	0.597	1.065	1.817		RDT&E Articles Quantity				
Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)	FY 08	FY 09	FY 10	FY 11														
Accomplishments/Effort/Subtotal Cost	0.597	1.065	1.817															
RDT&E Articles Quantity																		

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
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) B. Accomplishments/Planned Program				
Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.117	0.100	2.406	
RDT&E Articles Quantity				
FY08 - Developed unmanned system mission modules for forward deployed oceanographers and system operators to improve deployment effectiveness. Began technical evaluation and selection of autonomous ocean and atmospheric sensor packages; perform sensor package capability demonstration testing. Developed Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) data collection and fusion systems. FY09 - Complete sensor based atmospheric sensing Analysis of Alternatives (AoA) for both stationary and expeditionary applications (including application of UAV's (Unmanned Airborne Vehicle's) and airborne sensors). Complete selection of potential solutions. Complete related testing. Begin Program Life Cycle Cost Estimate (PLCCE). Develop system integration requirements, system performance specifications, and begin CDD (Capabilities Development Document) development. Begin interoperability and system security studies and identify related requirements. Begin definition of the LBSF&I UUV Spiral 2 system. Begin development of the Increment 2 system. Conduct studies as required. FY10 - Complete the System Development and Demonstration (SDD) phase of the Littoral Battlespace Sensing - Glider (LBS-G) system (Milestone C is scheduled for Q2FY10). Complete at-sea and ashore Development Testing and Evaluation (DT&E) of the complete end-to-end glider system including command and control, mission planning, launch and recovery, mission profile characteristics and other Key Performance Parameters (KPPs) and Key System Parameters (KSAs). Continue developing the LBS-G Spiral 2.0 definition and associated engineering studies and analyses of alternatives. Funding increase reflects the beginning of the System Development and Demonstration (SDD) phase of the Littoral Battlespace Sensing - Autonomous Undersea Vehicle (LBS-AUV) portion of the Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV) program.				

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																
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) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="padding: 5px;">USMC Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)</td> <td style="padding: 5px; text-align: center;">FY 08</td> <td style="padding: 5px; text-align: center;">FY 09</td> <td style="padding: 5px; text-align: center;">FY 10</td> <td style="padding: 5px; text-align: center;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px; text-align: center;">2.217</td> <td style="padding: 5px; text-align: center;">1.500</td> <td style="padding: 5px; text-align: center;">0.100</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY08 - Conducted verification & validation testing of METMF(R) NEXGEN (formerly METMF(R) NG) prototypes and prepared for delivery. Funds realigned from the Future Meteorological and Oceanographic (METOC) Capabilities program. FY09 - Conduct Engineering Change Proposals (ECPs) to the METMF(R) NEXGEN prototype systems. FY10 - Conduct Joint Interoperability Testing, and ECP's as needed, of the METMF(R) NEXGEN prototype systems.				USMC Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	2.217	1.500	0.100		RDT&E Articles Quantity				
USMC Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)	FY 08	FY 09	FY 10	FY 11														
Accomplishments/Effort/Subtotal Cost	2.217	1.500	0.100															
RDT&E Articles Quantity																		

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
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) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-left: 20px;"> <tr> <td style="width: 30%; padding: 5px;">Naval Integrated Tactical Environmental System Next Generation (NITES-Next)</td> <td style="width: 15%; padding: 5px;">FY 08</td> <td style="width: 15%; padding: 5px;">FY 09</td> <td style="width: 15%; padding: 5px;">FY 10</td> <td style="width: 15%; padding: 5px;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;">0.000</td> <td style="padding: 5px;">1.082</td> <td style="padding: 5px;">0.192</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY09 - Software test and integration (developed in PE 0603207N, project 2343 Tactical METOC Applications) related to equipment and infrastructure in support of system engineering activities for Naval Integrated Tactical Environmental System Next Generation (NITES-Next). Efforts include extensive integration and test efforts on infrastructure for developmental test and evaluation (DT&E), and extensive architecture development, engineering, and design required in preparation for Milestone decision for the NITES-Next program. FY10 - Continue software test and integration (developed in PE 0603207N, project 2343 Tactical METOC Applications) related to equipment and infrastructure in support of system engineering activities for Naval Integrated Tactical Environmental System Next Generation (NITES-Next). Efforts include integration and test efforts on infrastructure for developmental test and evaluation (DT&E) required in preparation for Milestone decision for NITES-Next.					Naval Integrated Tactical Environmental System Next Generation (NITES-Next)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	0.000	1.082	0.192		RDT&E Articles Quantity				
Naval Integrated Tactical Environmental System Next Generation (NITES-Next)	FY 08	FY 09	FY 10	FY 11															
Accomplishments/Effort/Subtotal Cost	0.000	1.082	0.192																
RDT&E Articles Quantity																			

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
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) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 20px;"> <tr> <td style="padding: 5px;">Environmental Satellite Receiver Processor (ESRP)</td> <td style="padding: 5px;">FY 08</td> <td style="padding: 5px;">FY 09</td> <td style="padding: 5px;">FY 10</td> <td style="padding: 5px;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;">0.305</td> <td style="padding: 5px;">0.317</td> <td style="padding: 5px;">0.312</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY08 - Continued software integration of new Satellite Sensors and Polar Orbiting Environmental Satellite (POES). * Commenced and completed development and integration to provide new functionality and capability to the ESRP System and provided technical support and analysis to determine impacts of future satellite telemetries on the ESRP systems. FY09 - Continue and complete software integration of new Satellite Sensors for Polar Orbiting Environmental Satellite (POES). * Commence Software development in support of Polar Orbiting Environmental Satellite (POES) National Preparatory Project (NPP) for Environmental Satellite Receiver Processors (ESRP). * Commence and complete engineering research to determine prospective candidate technologies and/or products to augment the capabilities of ESRP and provided technical support and analysis to determine impacts of future satellite telemetries on the ESRP systems. FY10 - Continue and complete software integration of new Satellite Sensors for Polar Orbiting Environmental Satellite (POES). * Commence Software development in support of Polar Orbiting Environmental Satellite (POES) National Preparatory Project (NPP) for Environmental Satellite Receiver Processors (ESRP). * Commence and complete engineering research to determine prospective candidate technologies and/or products to augment the capabilities of ESRP and provided technical support and analysis to determine impacts of future satellite telemetries on the ESRP systems. FY09 - 10 provides for continuous tech refresh for insertion of new technologies into the existing baseline system.					Environmental Satellite Receiver Processor (ESRP)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	0.305	0.317	0.312		RDT&E Articles Quantity				
Environmental Satellite Receiver Processor (ESRP)	FY 08	FY 09	FY 10	FY 11															
Accomplishments/Effort/Subtotal Cost	0.305	0.317	0.312																
RDT&E Articles Quantity																			

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																			
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: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. & Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2010</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2011</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2012</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2013</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2014</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2015</u></th> </tr> </thead> <tbody> <tr> <td style="padding-top: 10px;">OPN 4226 METEOROLOGICAL EQUIPMENT</td> <td style="text-align: center; padding-top: 10px;">16.625</td> <td style="text-align: center; padding-top: 10px;">24.669</td> <td style="text-align: center; padding-top: 10px;">21.458</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> 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 (NRL) and miscellaneous contractors, with management oversight by the Program Executive Officer for Command, Control, Communications, Computers and Intelligence (PEO C4I). (U) E. MAJOR PERFORMERS: N/A (U) F. METRICS: Earned Value Management (EVM) is used for metrics reporting and risk management.									<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	OPN 4226 METEOROLOGICAL EQUIPMENT	16.625	24.669	21.458					
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>																		
OPN 4226 METEOROLOGICAL EQUIPMENT	16.625	24.669	21.458																							

EXHIBIT R-2a, RDT&E Project Justification

Exhibit R-3 Cost Analysis (page 1)									DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDT&E, N / BA-5			0604218N Air Ocean Equipment Engineering					2345 Fleet METOC Equipment				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
	WX	NRL	10.905	0.980	N/A	1.602	N/A					
	WX	SSCs	5.945	0.506	N/A	1.070	N/A					
	CP	RAYTHEON	2.559		N/A		N/A					
	NA	MISC	14.794		N/A		N/A					
	CP	MISC		2.368	N/A	1.945	N/A					
Subtotal Product Development			34.203	3.854	N/A	4.617	N/A					
Remarks:												
Support Costs												
	CP	SSA/CSC	1.312		N/A		N/A					
Subtotal Support Costs			1.312	0.000	N/A	0.000	N/A					
Remarks:												

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX	OPTEVFOR	0.394	0.010	N/A	0.010	N/A					
Subtotal Test & Evaluation			0.394	0.010	N/A	0.010	N/A					
Remarks:												
Management Services	CP	MISC		0.200	N/A	0.200	N/A					
Subtotal Management Services			0.000	0.200	N/A	0.200	N/A					
Remarks:												
Total Cost			35.909	4.064	N/A	4.827	N/A					

EXHIBIT R4, Schedule Profile																							DATE: May 2009									
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 - Program: Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)															
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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				
Ocean Sensors	Small/Micro Current Buoy & Fusion																															
									Littoral/Riverine Sensors																							
Ocean Sensors TTS					AQS-20 EPMA Develop/LCS Integration																											
					BQN-17/UQN-4																											
Atmospheric Sensors					Fixed & Expeditionary Sensors																											

EXHIBIT R4, Schedule Profile

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R-1 Line Item No. 84

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Exhibit R-4a, Schedule Detail

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EXHIBIT R4, Schedule Profile

UNCLASSIFIED

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Exhibit R-4a, Schedule Detail

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																								DATE: May 2009									
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 - Program: USMC Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)												
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
Acquisition Milestones	System Development & Demonstration												MS C																				
Contract Award or Events	Prototype 1																																
	Prototype 2																																
					Prototype Support																												
Testing																																	
Development																																	
Documentation																																	

EXHIBIT R4, Schedule Profile

Exhibit R-4a, Schedule Detail

EXHIBIT R4, Schedule Profile																	DATE: May 2009															
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 - Program: Naval Integrated Tactical Environmental System Next Generation (NITES-Next)															
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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				
Infrastructure Engineering & Development					Arch/Design Engineering																											
Development and Test (DT&E) of Netcentric Enterprise Hardware Solutions in NITES-Next																																

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~~R-1 Line Item No. 04~~

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Exhibit R-4a, Schedule Detail

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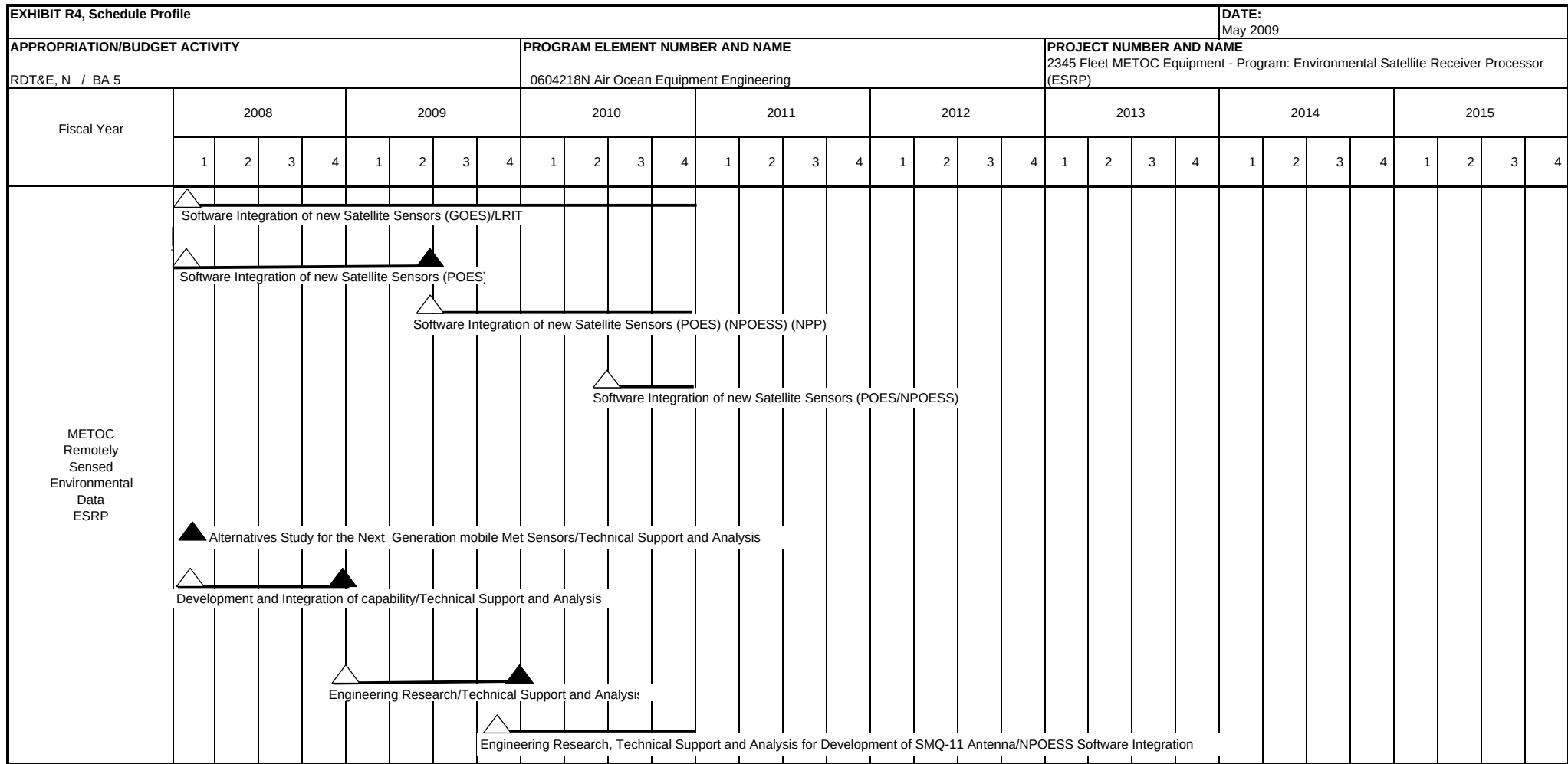


EXHIBIT R4, Schedule Profile

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Exhibit R-4a, Schedule Detail

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EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5						PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	1.502	1.667	2.658					
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 engineer near-term future mission sensing capabilities that are intended 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 engineered for electronic communications transmissions, human interface displays, and inputs to predictive models. Funding increase in FY10 reflects the increased technique & deployment developmental efforts in support of the Unmanned Aerial Vehicle (UAV) automated Meteorological and Oceanographic (METOC) sensors project.								

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering																
(U) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="width: 30%; padding: 5px;">Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 08</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 09</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 10</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center; padding: 5px;">1.313</td> <td style="text-align: center; padding: 5px;">1.436</td> <td style="text-align: center; padding: 5px;">2.434</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY08 - Developed Architecture and documented UAV Meteorological and Oceanographic sensors using evolving technologies. Proceeded with verification and validation tests of air-deployed micro-sensors and delivered Test Report. Extended strategy definition on network integration studies for insitu environmental sensor systems. Upgraded Navy buoys and expanded capabilities to acquired hydrodynamic characteristics in the littoral for production center use. Developed follow-on tactical through-the-sensor oceanographic and acoustic data collection system engineering plans. FY09 - Continue system development and demonstration of METOC manned, unmanned and automated sensors (to include integration of environmental sensors into a larger environmental sensing strategy) Continue the development of advanced sensor system support technologies and techniques for sensor deployment, data processing and performance metrics to optimize sensor performance. FY10 - Continue system development and demonstration of METOC manned, unmanned and automated sensors (to include integration of environmental sensors into a larger environmental sensing strategy) Continue the development of advanced sensor system support technologies and techniques for sensor deployment, data processing and performance metrics to optimize sensor performance. Funding increase reflects increased technique & deployment developmental efforts in support of the Unmanned Aerial Vehicle (UAV) automated Meteorological and Oceanographic (METOC) sensors project.				Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	1.313	1.436	2.434		RDT&E Articles Quantity				
Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)	FY 08	FY 09	FY 10	FY 11														
Accomplishments/Effort/Subtotal Cost	1.313	1.436	2.434															
RDT&E Articles Quantity																		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROJECT NUMBER AND NAME 2346 METOC Sensor Engineering																
(U) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 30%; padding: 5px;">Tactical Oceanographic Capabilities / UnderSea Warfare (TOC/USW)</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 08</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 09</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 10</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 11</td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center; padding: 5px;">0.189</td> <td style="text-align: center; padding: 5px;">0.231</td> <td style="text-align: center; padding: 5px;">0.224</td> <td></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> FY08 - Upgraded Navy buoys and expanded capabilities to acquired hydrodynamic characteristics in the littoral for production center use. Modified existing Naval Oceanographic Office acoustic and oceanographic data collection buoys to allow them to collect geo-acoustic and seabed properties via covert, passive methods and geo-acoustic inversion techniques. Developed follow-on tactical through-the-sensor oceanographic and acoustic data collection system engineering plans. FY09 - Conduct Verification and Validation tests on insitu oceanographic and acoustic buoys. Deliver sensor upgrade for prototype acoustic and oceanographic data collection buoy to expand geoacousti data collection to active methods. Continue design of an end-to-end ASW Reconstruction and Analysis (R&A) System Architecture. Test buoy at sea and deliver report. Continue modification of existing Naval Oceanographic Office acoustic and oceanographic data collection buoys to allow them to collect geo-acoustic seabed properties via covert, passive methods and geoacoustic inversion techniques to include SESSS and SRFLOS modules. Efforts formerly located in "Unmanned Aerial Vehicle METOC Sensors/Sensors/Observing Systems." FY10 - Continuation of FY09 efforts. Expand data buoy collection capabilities to other environmental parameters to include ocean volume scattering and directional ambient noise. Continue development of ASW performance assessment tools, which include the following efforts: acoustic uncertainty parameterization and evolving active and passive acoustic sensors. Expand capabilities and increase access speed of acoustic surface scattering and loss modules. Begin integration of loss and scattering algorithm software.				Tactical Oceanographic Capabilities / UnderSea Warfare (TOC/USW)	FY 08	FY 09	FY 10	FY 11	Accomplishments/Effort/Subtotal Cost	0.189	0.231	0.224		RDT&E Articles Quantity				
Tactical Oceanographic Capabilities / UnderSea Warfare (TOC/USW)	FY 08	FY 09	FY 10	FY 11														
Accomplishments/Effort/Subtotal Cost	0.189	0.231	0.224															
RDT&E Articles Quantity																		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
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
(U) C. OTHER PROGRAM FUNDING SUMMARY: <u>Line Item No. & Name</u> 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 (PEO C4I). (U) E. MAJOR PERFORMERS: N/A (U). F. METRICS: Earned Value Management (EVM) is used for metrics reporting and risk management.		

EXHIBIT R-2a, RDT&E Project Justification

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDT&E, N / BA-5			0604218N Air Ocean Equipment Engineering					2346 METOC Sensor Engineering				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
	WX	NRL	2.189	0.572	N/A	1.589	N/A					
	NA	MISC	9.675	0.450	N/A	0.450	N/A					
	CP	MISC		0.645	N/A	0.619	N/A					
Subtotal Product Development			11.864	1.667	N/A	2.658	N/A					
Remarks:												
Support Costs												
Subtotal Support Costs			0.000	0.000	N/A	0.000	N/A					
Remarks:												

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDT&E, N / BA-5			0604218N Air Ocean Equipment Engineering					2346 METOC Sensor Engineering				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation												
Subtotal Test & Evaluation			0.000	0.000		0.000						
Remarks:												
Management Services												
Subtotal Management Services			0.000	0.000		0.000						
Remarks:												
Total Cost			11.864	1.667	N/A	2.658	N/A					

EXHIBIT R4, Schedule Profile																				DATE: May 2009																
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 - Program: Meteorological and Oceanographic (METOC) Future Mission Capabilities (FMC)																			
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015							
	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				
Atmospheric Sensors	Helicopter Temperature & Relative Humidity																																			
					Atmospheric Microsensors/Expendables																															
Oceanographic Sensors	Wave & current Buoy																																			
					Oceanographic Sensing Systems/Microsensors/Expendables																															

EXHIBIT R4, Schedule Profile

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Exhibit R-4a, Schedule Detail

UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE:
May 2009

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 - Program: Tactical Oceanographic Capabilities / UnderSea Warfare (TOC/USW)

Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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				
Acoustic and Oceanographic Data Collection Buoys																																
ASW Performance Assessment																																

EXHIBIT R4, Schedule Profile

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Exhibit R-4a, Schedule Detail

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EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604221N, P-3 MODERNIZATION PROGRAM			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	4.511	3.562	3.659					
1152 P-3 SENSOR INTEGRATION	3.136	1.455	1.499					
3016 FATIGUE LIFE MANAGEMENT PROGRAM	1.375	2.107	2.160					

(U) 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 AntiSubmarine Warfare (ASW) and AntiSurface Warfare (ASuW) sensors, weapons systems, and supporting technology into legacy P-3C systems and phased capabilities upgrades. The program also advances Air Acoustic Rapid COTs Insertion (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 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.

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:	4.461	3.589	3.705
Current President's Budget:	4.511	3.562	3.659
Total Adjustments	0.050	-0.027	-0.046
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.017	
SBIR/STTR/FTT Assessments	0.059		
Program Adjustments	-0.009		-0.046
Rate/Misc Adjustments		-0.010	
Subtotal	0.050	-0.027	-0.046

Schedule:

Not Applicable

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT& 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 2008	FY 2009	FY 2010					
Project Cost	3.136	1.455	1.499					
RDT&E Articles Qty	3							

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 Acoustic Rapid COTs Insertion (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.

B. Accomplishments/Planned Program

P-3 integration of ASW and ASuW sensors / weapon systems	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		1.455	1.499	
RDT&E Articles Quantity				

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.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
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																	
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 30%;">Conduct P-3C OTH Satellite communications</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>3.136</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td>3</td> <td></td> <td></td> <td></td> </tr> </table> The OTH Wideband program will provide P-3C AIP aircraft the capability to conduct OTH Satellite communications. Specifically, this program will design, develop, integrate and evaluate this capability on the P-3C AIP aircraft.					Conduct P-3C OTH Satellite communications	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	3.136				RDT&E Articles Quantity	3			
Conduct P-3C OTH Satellite communications	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	3.136																		
RDT&E Articles Quantity	3																		
C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable																			
D. 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.																			

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Development	C-FP	LM, ST PAUL, MN	8.678									
Systems Engineering	SS-CPFF	LM, MANASSAS, VA	11.566	1.377	10/08	1.499	10/09					
Subtotal Product Development			20.244	1.377		1.499						
Remarks:												
Software Development	WX	VARIOUS	4.340									
Subtotal Support			4.340	0.000		0.000						
Remarks:												

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER, MD	0.768									
Subtotal T&E			0.768	0.000		0.000						
Remarks:												
Contractor Engineering Support	WX	SPAWARSYSCOM, SC	0.133									
Government Engineering Support	WX	VARIOUS	1.537									
Travel	WX	NAWCAD, PAX RIVER, MD	0.726	0.078	10/08							
Subtotal Management			2.396	0.078		0.000						
Remarks:												
Total Cost			27.748	1.455		1.499						
Remarks:												

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EXHIBIT R4, Schedule Profile													DATE:
													May 2009
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	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
EER Multi-Static Active Sensor System Support													
EER Fleet Technology Insertion													
P-3 Critical Obsolescence Program Kits & Installation													
P-3 ARCI program and Future Fleet Technology Insertion													
OTH Wideband													

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT& 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 2008	FY 2009	FY 2010																			
Project Cost		1.375	2.107	2.160																			
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. B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td>P-3/EP-3 Fatigue Life Management</td> <td>FY 08</td> <td>FY 09</td> <td>FY 10</td> <td></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>1.375</td> <td>2.107</td> <td>2.160</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> 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. C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable D. 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.									P-3/EP-3 Fatigue Life Management	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	1.375	2.107	2.160		RDT&E Articles Quantity				
P-3/EP-3 Fatigue Life Management	FY 08	FY 09	FY 10																				
Accomplishments/Effort/Subtotal Cost	1.375	2.107	2.160																				
RDT&E Articles Quantity																							

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604221N, P-3 MODERNIZATION PROGRAM			3016, FATIGUE LIFE MANAGEMENT PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Systems Engineering	C-CPIF	LM, MARIETTA, GA	4.016	1.100	01/09	1.182	01/10					
Subtotal Product Development			4.016	1.100		1.182						
Remarks:												
Subtotal Support			0.000	0.000		0.000						
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Subtotal T&E			0.000	0.000		0.000						
Remarks:												
Government Engineering Support	WX	VARIOUS	3.935	0.778	11/08	0.755	11/09					
Program Management Support	WX	VARIOUS		0.200	11/08	0.200	11/09					
Travel	WX	NAWCAD, PAX RIVER, MD	0.425	0.029	11/08	0.023	11/09					
Subtotal Management			4.360	1.007		0.978						
Remarks:												
Total Cost			8.376	2.107		2.160						
Remarks:												

EXHIBIT R4, Schedule Profile													DATE:	May 2009
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		
Fiscal Year	2008				2009				2010					
	1	2	3	4	1	2	3	4	1	2	3	4		
Inventory Fatigue Life Management/Sustainment														

CLASSIFICATION:			UNCLASSIFIED				
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604230N/WARFARE SUPPORT SYSTEM				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	6.116	12.574	6.307				
3140 / SEA EAGLE ACTD	0.916	0.000	0.000				
3184 / Regional Maritime Awareness Capability (RMAC)	0.523	0.300	0.000				
4011 / Naval Coastal Warfare Surv and C4I Sys	1.383	8.285	6.307				
9999 / CONGRESSIONAL ADDS	3.294	3.989	0.000				

A. MISSION DESCRIPTION:

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.

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604230N/WARFARE SUPPORT SYSTEM		
Sea Eagle is an 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. Riverine Force will integrate and employ a variety of surface and air assets, special vehicles, weapons and appropriately trained personnel. Mission assets needed to support the operational capabilities will vary widely dependant on the Host Nations involved. The Riverine Squadron will deploy with inherent, but limited, force protection capabilities . Regional Maritime Awareness Capability (RMAC) - support GWOT by providing other USG Agencies with maritime traffic information that is not currently available. RMAC also provides enhanced regional security, safety, economic stability and environmental protection through shared maritime domain awareness (MDA).			
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	6.228	8.611	3.232
FY10 President's Budget	6.116	12.574	6.307
Total Adjustments	-0.112	3.963	3.075
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.001	3.966	0.000
SBIR/STTR/FTT Assessment	-0.108	0.000	0.000
Program Adjustments	-0.005	0.000	3.097
Rate/Misc Adjustments	0	-0.003	-0.022
Total	-0.112	3.963	3.075

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM			PROJECT NUMBER AND NAME 3140/SEA EAGLE ACTD		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.916	0.000	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (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. 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 2008 - 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:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM	PROJECT NUMBER AND NAME 3140/SEA EAGLE ACTD	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.916	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY08 - 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.			
C. OTHER PROGRAM FUNDING SUMMARY:			
D. ACQUISITION STRATEGY: FY08-09 Final Military Utility Assessment.			
E. MAJOR PERFORMERS: Field Activities & Locations - Work Performed NSWC Demonstration Support NSWC Panama City SPAWAR San Diego Contractors & Locations - Work Performed TBD Universities & Locations - Work Performed JHU Applied Physics Lab Technical assessment, systems engineering			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM			PROJECT NUMBER AND NAME 3184/Regional Maritime Awareness Capability (RMAC)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.523	0.300	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Regional Maritime Awareness Capability (RMAC) - support GWOT by providing other USG Agencies with maritime traffic information that is not currently available. RMAC also provides enhanced regional security, safety, economic stability and environmental protection through shared maritime domain awareness (MDA). Capabilities include the ability to detect, track, identify and display information on a cooperative and non-cooperative surface vessels to enable maritime security operations. The Regional Maritime Awareness Capability (RMAC) Joint Capabilities Technology Demonstration (JCTD) is a coordinated Department of Defense (DoD) and Department of State project. The goal of the US European Command, as the Combatant Command sponsor for this JCTD, is to establish a maritime domain awareness (MDA) system that can be propagated to allied nations and is compliant with US Navy afloat and expeditionary systems. The RMAC incorporates data models that enable the US Navy to leverage data from indigenous sensors as policy and the situation dictates. The Navy is the sponsoring branch of DoD for the RMAC JCTD because of their vested interest in sensors and surveillance throughout the maritime domain. The RMAC JCTD will demonstrate and, possibly, transition a regional maritime awareness solution set, consisting of sensors and their indigenous processors, communication systems, and software. The initial application of the capability will enable friendly nations in the Gulf of Guinea region to develop maritime domain awareness in the regional waters, and share their data with each other and US government users (including the US Navy), as authorized by RMAC JCTD coalition partners. This solution set will be equally applicable to local sensor sites, national operations centers, regional coordination centers, and external users. The sensors and processors include Automated Identification System (AIS), radar, video cameras, and night vision devices. The RMAC JCTD outputs and efficiencies include: surveillance; tracking; correlation and analysis; and multi-national information sharing and collaboration capabilities. The US Navy is directly contributing approximately 17% of the total RMAC JCTD cost. The Navy funding is directed to the performing activities as outlined in the Office of the Secretary of Defense coordinated RMAC JCTD Management Plan.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM	PROJECT NUMBER AND NAME 3184/Regional Maritime Awareness Capability (RMAC)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.523	0.300	0.000
RD T&E Articles Quantity	0	0	0
FY08/09: develop an increased Maritime Domain Awareness through improved integration with interagency and international partners. Funding will provide site survey participation in Nigeria.			
C. OTHER PROGRAM FUNDING SUMMARY:			
D. ACQUISITION STRATEGY: Not Applicable.			
E. MAJOR PERFORMERS: NUWC Keyport. These activities perform systems analysis and integration activities associated with site survey.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM			PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.383	8.285	6.307				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Coastal Warfare (NCW) community is in the process of a major realignment to the Maritime Expeditionary Security Force (MESF). NCW currently consists of 20 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 - Radar Sonar Surveillance Center (RSSC) is the primary system used by the NCW MIUW Units and 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-RSSCs 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. As stated in the Maritime Expeditionary Security Force (MESF) CONOPS dated 11 April 2007: The MESF organization will be established through realignment of the Naval Coastal Warfare (NCW) organizations (NCW Squadrons, Mobile Inshore Undersea Warfare Units, Inshore Boat Units, Mobile Security Squadrons, Mobile Security Detachments, Embarked Security Detachments, and Embarked Security Teams) into the MESF structure. Further realignment will result in the integration of intelligence, VBSS, and additional waterborne and security detachments to support new mission capability and provide additional NCC / JFMCC capacity. In addition to enhancing readiness of the current force, MESF will deploy adaptive force packages (AFPs) tailored for the specific missions to achieve greater efficiency and combat readiness than the current NCW force. By establishing a professional warfare community and dedicated Maritime Expeditionary Security Force capable of meeting the full range of security requirements, MESF closes a critical gap essential to full mission readiness for MSO. MESF provides a structure that establishes a single integrated maritime security force with one standard for training, certification, employment, and tactics, techniques, and procedures (TTP). This funding supports the future direction of the MESF 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. The associated developmental efforts will ultimately transition into an adaptive force package Navy Expeditionary Security System (NESS). MESF forces currently field legacy systems designed to counter more traditional military threats in a two Major Theater War scenario. Future MESF units 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.							

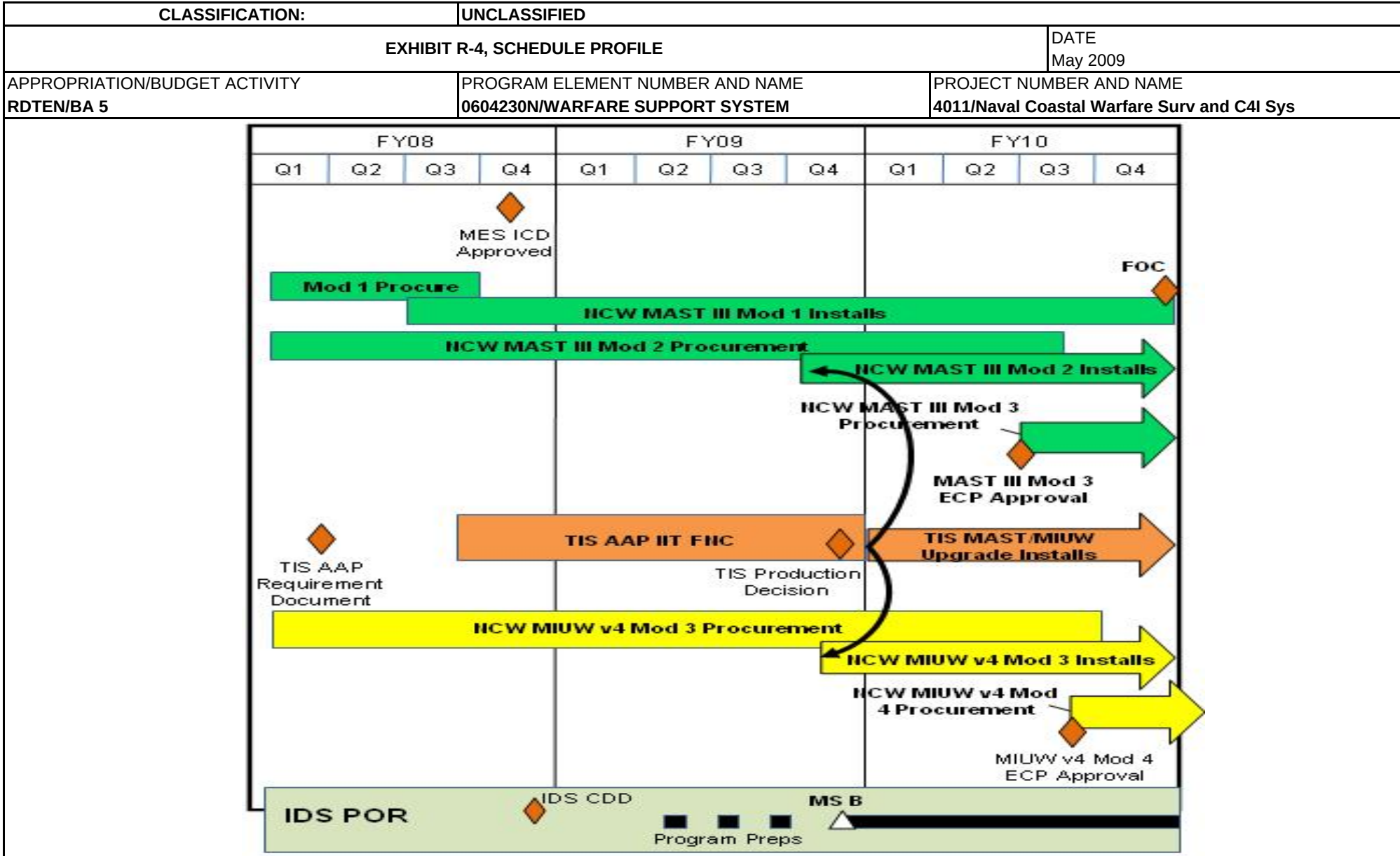
CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM	PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys
Replacing the current GDFS software with the Tactically Integrated Sensors (TIS) software constitutes an upgrade to the MIUW-RSSC and is being executed as a separate Abbreviated Acquisition Program. The AAP will enable the deployment of a currently fielded Program Of Record (POR) combat system (AN/SQQ-34C) known as Tactically Integrated Sensors (TIS) to the MESF units. One of the key initial new sensors envisioned to be linked with this TIS system is a wide field Mid-Wave Infra-Red (MWIR) sensor that is the focus of the Enabling Capability in the FNC program. This funding supports the initiation of the Identity Dominance System program starting in FY09. The Navy conducted the NCW CBA and MES ICD. MESF forces have a mobile security mission that requires methodologies, procedures, equipment and the communications capacity to identify individuals who represent a potential threat as a means to deter and eliminate individuals from conducting asymmetric/non-traditional attacks upon friendly forces, high value assets and coastal areas that NCW is charged with protecting. The Vessel Boarding Search and Seizure (VBSS) teams conducting Expanded Maritime Interception Operations also have a similar requirement to identify individuals. The development of a device to support identity functions is captured in the Identity Dominance System Capability Development Document (IDS CDD). IDS will be used in the following environments: aboard ship and ashore in ports, the littorals and extended inland field environments worldwide. IDS will be employed in maritime and very austere ashore environments and carried by individuals who are part of ship boarding parties and dismounted patrols. This dictates a portable, lightweight, rugged, and reliable system with intuitive and user friendly features. IDS biometric modalities may differ by mission profile, requiring the authoritative response to the On-Scene Commander on whether to detain or further investigate an individual.		

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM				PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
				FY 2008		FY 2009		FY 2010	
NCW Upgrades				1.383		3.716		2.509	
RDT&E Articles Quantity				0		0		0	
FY08/09/10 - NCW Upgrades - Research and develop next generation NCW surveillance and C4I systems capabilities, to include new or improved Tactical Command and Control system, Electronic Systems Management, Under-Sea surveillance, Acoustic tracking of surface contacts, Data Fusion, Autonomous Sensors, Small Craft Situational Awareness/Combat ID, improved IR cameras, auto detect and track software, and improved data recording technologies. The next generation capabilities are based on the requirements in the Maritime Expeditionary Security Initial Capability Document (MES ICD).									
FY08/09 - Initiates the Tactically Integrated Sensors, Abbreviated Acquisition Program (TIS AAP) to modify and transition an ASW combat system software tool to the MESF Forces.									
FY09 - Provide system engineering and software/system integration activities with next generation C4ISR systems and sensors with a specific focus on the transition of the improved Imaging Technology (IIT) Future Naval Capability sensor systems. The IIT FNC supports the MESF role in Maritime Domain Awareness and is a capability need for the Integrated Swimmer Defense program.									
FY10 - Provides program management support to transition next generation MESF capabilities based on the Maritime Expeditionary Security Initial Capabilities Document.									
				FY 2008		FY 2009		FY 2010	
Identity Dominance System				0.000		4.569		3.798	
RDT&E Articles Quantity				0		0		0	
FY09 - Identity Dominance System - Program Management acquisition preparations for a Milestone B for the IDS program of record. Additional efforts will focus on the actual systems engineering and hardware/software development of the Identity Dominance System device.									
FY10 - Identity Dominance System - Program Management acquisition preparations for a Milestone C for the IDS program of record and the production of the IDS device.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	To Complete	Total Cost
OPN 8120 NCW (PEs 0203422N/0503372N)	13.880	13.510	5.422	0.000	0.000	0.000	0.000	0.000	32.812
Related RDT&E:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OPN 8128 Physical Security Equipment (PE 0208147N)	1.410	0.030	0.030	0.000	0.000	0.000	0.000	0.000	1.470
Related RDT&E:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM	PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys	
D. ACQUISITION STRATEGY: NCW - There are eight (8) MESF MAST III systems and twenty (20) MIUW-RSSC systems. The Naval Coastal Warfare systems, the Mobile Ashore Support Terminal (MAST III) and the MIUW Radar Sonar Surveillance Center (RSSC) AN/TSQ-108A(V)4 MOD 2 require the production of Engineering Change Packages (ECPs) for the purposes of technology refresh and to mitigate the impact of obsolescent components. This issue supports the development and testing of the ECP kits as well as the procurement of material of initial kits involved in testing. For the MAST III systems - AN/USC-60 baseband equipment upgrades and GCCS-M upgrades. Timeplex are no longer supported and will need to be replaced with Promina multiplexers. For the MIUW systems - The key effort in FY10 is to provide an IP connectivity path using 1) VSAT for short ops requiring quick set ups using commercial SATCOM and 2) USC-67 (triband SHF) for longer ops using MILSATCOM. This IP capability is required because Navy legacy circuits that MIUW relies on (i.e. OTCIXS, CUDIXS, Fleet Broadcast) are being ceased in FY11 and transitioning to IP circuits (i.e. DMS Proxy, Assured IP). GCCS-M upgrades from 3.x to 4.x (or Maritime Tactical Services) will be required as 3.x will not be supported after FY10. IDS - The fundamental purpose of the IDS program is to provide the Navy and Marine Corps with an integrated and ruggedized capability to employ individual-oriented identity information in the conduct of maritime and expeditionary operations. A fieldable prototype (the Tactical Biometrics Collection and Matching System (TBCMS)) was developed by the Naval Innovation Laboratory (NaIL) and provided to operational Navy and Marine Corps units for evaluation and comment in August 2007. A market survey conducted by the NaIL concluded that no COTS or GOTS systems could meet the requirements in the IDS CDD so a development effort is deemed necessary. Since the TBCMS prototype design was assessed by SEA05 at TRL 6 the IDS program is planned to enter System Demonstration (SD) at Milestone B in September 2009, and the SD phase is planned to culminate in a Milestone C decision in September 2011. NSWCDD Dahlgren will act as the Technical Direction Agent for PMS-480 in executing the effort, and system design, fabrication, developmental testing, and logistical support preparations will be accomplished via a prime contractor to be selected during a competitive contracting process immediately following the Milestone B decision. E. MAJOR PERFORMERS: NCW: SSC San Diego and SSC Charleston are the major performers. These activities perform systems engineering analysis and integration activities associated with next generation surveillance and C41 systems with focus on integration of existing joint, service, and non-DoD systems. SSC San Diego is the primary integrator for software and COTS/GOTS equipment. IDS: NSWC Dahlgren			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM					PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	C/CPFF	SSC CH/SSC SD	0.100	0.000		0.000		0.000				
Hardware/Software Development	WR	NSWC DAHLGREN	0.000	0.000		1.800	FEB-09	1.500	FEB-10			
Hardware/Software Development	WR	NSWC CRANE	0.000	0.000		0.750	FEB-09	0.000				
Systems Engineering	C/CPFF	SSC CH/SSC SD	0.547	0.000		0.000		0.000				
Systems Engineering	WR	SSC CH/SSC SD	0.300	0.000		0.300	FEB-09	0.300	FEB-10			
Systems Engineering	WR	NUWC KEYPORT	0.400	0.000		0.400	FEB-09	0.300	FEB-10			
Systems Engineering	WR	NSMRL	0.100	0.000		0.050	FEB-09	0.000				
Systems Engineering	C/CPFF	SSC SD	6.647	0.000		0.000		0.000				
Systems Engineering	WR	NSWC DAHLGREN	0.000	0.000		1.800	FEB-09	0.500	FEB-10			
Systems Engineering	WR	NUWC NEWPORT	0.000	0.000		0.000		0.000				
Training Development	WR	SSC CH/SSC/SD	0.201	0.000		0.100	FEB-09	0.100	FEB-10			
Test Integration	WR	NUWC Keyport	0.819	0.000		0.000		0.000				
Test Integration	WR	NSWC Crane	0.000	0.000		0.200	FEB-09	0.000				
Subtotal Product Development			9.114	0.000		5.400		2.700				
Remarks:												
Technical Data	WR	SSC CH/SSC SD	0.200	0.000		0.100	FEB-09	0.101	FEB-10			
Technical Data	WR	NSWC CRANE	0.000	0.000		0.250	FEB-09	0.000				
Technical Data	WR	NUWC KEYPORT	0.150	0.000		0.150	FEB-09	0.050	FEB-10			
Technical Data	MIPR	Coast Guard	0.175	0.000		0.000		0.000				
Technical Data	WR	NSWC DAHLGREN	0.000	0.000		0.000		0.000				
Test Planning	WR	NUWC KEYPORT	0.000	0.000		0.100	FEB-09	0.000				
Test Planning	WR	NSWC CRANE	0.000	0.000		0.250	FEB-09	0.000				
Test Planning	WR	SSC CH/SSC SD	0.100	0.000		0.100	FEB-09	0.000				
Test Planning - Non-Lethal	WR	NSWC DAHLGREN	0.000	0.000		0.500	FEB-09	0.000				
Test Planning - IDS	WR	NSWC DAHLGREN	0.000	0.000		0.000		0.300	FEB-10			
Subtotal Support Costs			0.625	0.000		1.450		0.451				
Remarks:												

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM					PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Program Management Support	WR	SSC CH/SSC SD	0.000	0.000		0.032	OCT-08	0.079	FEB-10			
Program Management Support	WR	NUWC KEYPORT	0.150	0.000		0.100	FEB-09	0.000				
Program Management Support	WR	NSWC DAHLGREN	0.000	0.000		0.976	FEB-09	1.000	FEB-10			
Program Management Support	WR	NSWC CRANE	0.083	0.000		0.302	FEB-09	0.100	FEB-10			
Program Management Support	Various	Various	0.000	0.000		0.000		1.947	FEB-10			
Travel	Various	Various	0.050	0.000		0.025	OCT-08	0.030	FEB-10			
Subtotal Management Services			0.283	0.000		1.435		3.156				
Remarks:												
Total Cost			10.022	0.000		8.285		6.307				



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM			PROJECT NUMBER AND NAME 4011/Naval Coastal Warfare Surv and C4I Sys			
Schedule Profile		FY 2008	FY 2009	FY 2010				
MES ICD		4TH QTR						
IDS CDD		4TH QTR						
MILESTONE B			4TH QTR					
TIS AAP OPNAV REQUIREMENT DOCUMENT		1ST QTR						
TIS AAP IIT FNC		3RD-4TH QTR	1ST-4TH QTR					
TIS AAP PRODUCTION DECISION			4TH QTR					
TIS MAST/MIUW INSTALLS				1ST-4TH QTR				
MAST III MOD 1 PROCUREMENT		1ST-3RD QTR						
MAST III MOD 1 INITIAL INSTALLS		3RD-4TH QTR	1ST-4TH QTR	1ST-4TH QTR				
MAST III MOD 1 FOC				4TH QTR				
MAST III MOD 2 PROCUREMENT		1ST-4TH QTR	1ST-4TH QTR	1ST-3RD QTR				
MAST III MOD 2 INITIAL INSTALLS			4TH QTR	1ST-4TH QTR				
MAST III MOD 3 ECP APPROVAL				3RD QTR				
MAST III MOD 3 PROCUREMENT				3RD-4TH QTR				
MIUW v4 MOD 3 PROCUREMENT		1ST-4TH QTR	1ST-4TH QTR	1ST-3RD QTR				
MIUW v4 MOD 3 INITIAL INSTALLS			4TH QTR	1ST-4TH QTR				
MIUW v4 MOD 4 ECP APPROVAL				3RD QTR				
MIUW v4 MOD 4 PROCUREMENT				3RD-4TH QTR				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604230N/WARFARE SUPPORT SYSTEM	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9C03A - Agent Based Expeditionary Security System	0.775	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C03A - Congressional Add - FY08 - Agent-Based Expeditionary Security System \$.775 - Agent-Based Expeditionary Security System for Anti-Terrorist Afloat (AESS AT Afloat) will enable evaluation and integration of independent sensors and response technologies, development of alert protocols based on Navy rules of engagement, and communications compatible with NECC systems requirements.			
	FY 2008	FY 2009	FY 2010
9C04A- Distribution Detection Classification	1.550	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C04A - Congressional Add - FY08 - Distributed Detection Classification \$1.550 - Development, integration and fielding of a Open Architecture (OA), network centric test bed to provide demonstration and evaluation of plug-and-play technologies for surface and undersea force protection capabilities and concept of operation generation. Development and evaluation of modular and expandable force protection capabilities, including distributed multi-sensor fusion for increased situational awareness, Detection, Classification, and Localization (DCL) automation and sensor interoperability including surface search radar integration.			
	FY 2008	FY 2009	FY 2010
9C05A - Wireless Imaging and Sensor Network	0.969	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C05A - Congressional Add - FY08 - Wireless Imaging and Sensor Network \$.969 - Development of the RSMM (Remote Sensor Monitoring and Management) system designed for expeditionary use and provide a prototype for evaluation.			
	FY 2008	FY 2009	FY 2010
9D67A - Common Expeditionary Force Protection System	0.000	3.989	0.000
RDT&E Articles Quantity	0	0	0
9D67A - Congressional Add - FY09 - Common Expeditionary Force Protection System \$3.989 - Development of common Expeditionary Force Protection System Architecture (CEFPSA) to provide command and control decision support for the Integrated Swimmer Defense System (ISD). CEFPSA is the integrating backbone for the various sensors and data feeds required for ISD. CEFPSA technology is also flexible enough to meet Navy Expeditionary Combat Command (NECC) land-based force protection mission requirements.			

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE:			
APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5			0604231N - TACTICAL COMMAND SYSTEM					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY2012	FY 2013	FY 2014	FY 2015
Total PE Cost	87.363	102.164	86.462					
2213 MISSION PLANNING	29.753	18.588	18.782					
0486 TACTICAL/MOBILE (TACMOBILE) SYSTEMS	2.402	8.919	10.897					
0521 SHIPBOARD TACTICAL INTEL/GCCS-M INTELLIGENCE APPLICATIONS	3.717	3.803	0.000					
0709 GCCS-M MARITIME APPLICATIONS	13.104	20.726	19.389					
2009 TRUSTED INFORMATION SYSTEMS JOINT CROSS DOMAIN EXCHANGE (JCDX) RADIANT MERCURY (RM)	0.510	1.084	1.311					
2305 GCCS-M COMMON APPLICATIONS	4.039	0.000	0.000					
2307 SHIPBOARD LAN/WAN	12.271	11.284	1.768					
2351 MARITIME DOMAIN AWARENESS (MDA)	0.000	0.000	21.199					
3032 NTCSS ENTERPRISE DATABASE AND MLDN	0.049	0.050	6.358					
9123 FORCEnet	19.108	33.721	6.758					
9999 CONGRESSIONAL INCREASES	2.410	3.989	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.

Global Command and Control System - Maritime (GCCS-M): Global Command and Control System - Maritime (GCCS-M) is the Maritime implementation of the Global Command and Control System (GCCS) Family of Systems (FoS). It provides Maritime Commanders at all echelons of command, afloat and ashore, with a single, integrated, scalable Command, Control, Communications, Computers and Intelligence (C4I) system that fuses, correlates, filters, maintains and displays location and attribute information on friendly, hostile and neutral land, sea and air forces. It integrates this data with available intelligence and environmental information in support of command decision-making. The system operates in near real-time and constantly updates unit positions and other situational awareness data. GCCS-M also records data in appropriate databases and maintains a history of changes to those records. The user can use the data to construct relevant tactical pictures using maps, charts, topography overlays, oceanographic overlays, meteorological overlays, imagery data and all-source intelligence information coordinated into a Common Operational Picture (COP) that can be shared locally and with other sites. Navy Commanders can review and evaluate the general tactical situation, plan actions and operations, direct forces, synchronize tactical movements and integrate force maneuver with firepower. The system operates in a variety of environments and supports joint, coalition and allied forces. As part of the evolutionary acquisition strategy and transition to the Joint Net-Enabled Command Capability (NECC), GCCS-M versions being fielded and in development will be hosted within the Common Computing Environment (CCE) and will provide a Service Oriented Architecture that delivers net centric capability.

Mission Planning: The Joint Mission Planning System (JMPS) is the CNO's designated automated mission planning system for the Navy. JMPS enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, and conduct post-mission analysis. JMPS is a mission critical system which 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). Common requirements are identified and capabilities are developed and prioritized in an evolutionary approach. An individual JMPS mission-planning environment (MPE) is a combination of the JMPS framework, common capabilities, and the necessary system hardware required to satisfy mission planning objectives. Most Tactical Naval Aviation platforms are dependent solely on JMPS to plan precision guided munitions, sensor systems, tactical data links, secure voice communications, and basic Safety of Flight functions. The following type/model/series naval aircraft are supported by JMPS: F/A-18 A-F, E-2C, EA-6B, S-3, MV-22 and AV-8B. Future JMPS platforms include: CH-46E, CH-53, MH-53E, H-60B/F/H, UH-1N, P-3, KC-130T/J, C-2, AH-1W/Z, EA-18G, H-60 R/S, VH-71, P-8, E-2D, UH-1Y, H-53K, VH-3, VH-60 and C-130. As directed via the CNO's Navy Enterprise Architecture and Data Strategy (NEADS) policy, the next JMPS architecture version (Framework V 1.4) will provide an Afloat Core Services (ACS) that delivers net centric capability.

Tactical/Mobile (TacMobile) Systems: The Tactical Mobile (TacMobile) program provides evolutionary systems and equipment upgrades to support the Maritime Component Commanders (Expeditionary Ashore) and Maritime Patrol and Reconnaissance Force 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 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 Operations Centers (TOCs) (formerly Tactical Support Centers (TSCs)), the Mobile Tactical Operations Centers (MTOCs) (formerly Mobile Operations Control Centers (MOCCs)), and the Joint Mobile Ashore Support Terminal (JMAST). TacMobile C2 systems are based on the GCCS-M architecture which is Defense Information Infrastructure (DII) Common Operating Environment (COE) compliant.

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-5		0604231N - TACTICAL COMMAND SYSTEM	
Trusted Information Systems (TIS): Trusted Information Systems (TIS) is a combination of the Joint Cross Domain eXchange (JCDX) system 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. Radiant Mercury provides an automated means to sanitize, downgrade, guard, and transliterate formatted data at various classifications, compartments and releasabilities. With the aid of a reliable human reviewer, RM can process nonstandard messages, such as messages with National Imagery Transmission Format (NITF) products and other non/semi-formatted file types.			
Shipboard Local Area Network (LAN)/Wide Area Network (WAN) : Integrated Shipboard Network System (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 Systems 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. ISNS includes integrated core services to provide a Service Oriented Architecture (SOA) which is the mechanism to deliver the FORCEnet interface to the warfighter. The (ACS) provides a composeable warfighting environment enabling dynamic configuration of capabilities tailored to meet specific warfighting missions. As the warfighting mission changes, the capabilities or services can be re-configured on the fly to meet the new warfighting requirement. This dynamic reconfiguration of services also known as "plug and fight" meets the composeable services vision of FORCEnet. ACS also provides the common core enterprise services and framework to allow organizations ubiquitous access to reliable, decision-quality information through a net-based services infrastructure and applications to bridge real-time and near-real-time Communities Of Interest (COI). The ACS will empower the end user to pull information from any available source, with minimal latency, to support the mission. Its capabilities will allow Department of the Navy as well as Global Information Grid (GIG) users to task, post, process, use, store, manage, and protect information resources on demand for warfighters, policy makers, and support personnel. ACS will utilize a spiral process for delivering capability to the warfighter. The ISNS Inc 1, Sensitive Compartmented Information (SCI) Networks and Combined Enterprise Regional Information Exchange System (CENTRIXS) programs began migration to ISNS Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video and Data; Common Computing Environment (CCE); ACS; and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). Full transition to CANES Inc 1 occurs in FY 2010.			
Combined Enterprise Regional Information Exchange System (CENTRIXS): The CENTRIXS program provides US Navy ships with secure, reliable, high-speed Local Area Network (LAN) with access to the Coalition Wide Area Network (WAN) to include CENTRIXS Four-Eyes (CFE), Global Counter Terrorism Task Force (GCTF), North Atlantic Treaty Organization (NATO) Information Data Transfer System (NIDTS), Multinational Coalition Force - Iraq (MCFI), bilateral networks such as CENTRIXS-J (Japan) and CENTRIXS-K (Korea), and Communities Of Interest (COI) virtual networks such as Coalition Naval Forces - U.S. Central Command (CENTCOM) (CNFC), and Cooperative Maritime Forces - Pacific (CMFP). The CENTRIXS system provides real-time tactical and operational information sharing at the SECRET and SECRET REL (Releasable) level between naval afloat units, Component Commanders, Fleet Commanders, Numbered Fleet Commanders and Coalition Forces/Allies. When the CENTRIXS network is combined with other subsystems (Radio/Satellite Communications), it delivers an end-to-end network centric warfighting capability. The CENTRIXS program is comprised of Block 0, I, and II systems fielded across the Fleet, and Increment 1 which provides a network infrastructure that allows simultaneous access to multiple Coalition Wide Area Networks (WAN) and incorporates the Common PC Operating System Environment (COMPOSE) which provides a server and client operating system environment for other applications and collaborative tools such as Same time Chat, Domino and Command and Control PC (C2PC) as means to share a Common Operational Picture (COP) and exchange information using Collaboration At Sea (CAS). The CENTRIXS program uses both Commercial Off The Shelf (COTS) hardware and software and Open Standards to maximize commercial technology and support. In-service engineering and technical support ensures existing systems are upgraded and modified to keep pace with current technology and industry.			

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0604231N - Tactical Command System	
Combined Enterprise Regional Information Exchange System (CENTRIXS) funding supports the design, development and testing of the CENTRIXS LAN for surface and subsurface platforms and the CENTRIXS Network Operations Center (NOC). The goal of the CENTRIXS program is to provide a cost-efficient, operationally effective network that dramatically reduces current infrastructure requirements while maximizing operational flexibility and war fighter utility in a coalition environment. Multi-Level Thin Client (MLTC) architecture support shipboard Space, Weight and Power (SWAP) reductions and include initiatives for server virtualization (ability to run multiple servers on a single server), drop scalability leveraging existing Secure Internet Protocol Router Network (SIPRNET) drops, remote authentication and remote system management. Additionally funding will provide design, development and testing for a Unit Level MLTC system (provides a compressed shipboard rack/client footprint) and initiatives to include Language Translation, Communities Of Interest (COI) and Network Enclave Agility (ability to dynamically shift between all coalition networks and COIs) and Multi-Level Chat (a Cross Domain Solution (CDS) chat capability). The (CENTRIXS) program started migration to ISNS Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video and Data; Common Computing Environment (CCE); Service Oriented Architecture (SOA); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). Full transition to CANES Inc 1 occurs in FY 2010. Submarine Local Area Network (SubLAN): The SubLAN program provides Navy submarines with reliable, high-speed Mission Critical SECRET and Mission Essential 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 provides network infrastructure including an Unclassified Wireless Local Area Network (UWLAN), servers, and the Common Personal Computer 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). Funding supports the design, development, and testing of SubLAN for addition of capabilities in support of migration to the Consolidated Afloat Network Enterprise Services (CANES) program effort. Naval Tactical Command Support System (NTCSS) Enterprise Database and Maritime Logistics Data Network (MLDN): The development of an enterprise database for the NTCSS application suite will place all NTCSS databases into a similar structure and single location, allowing for greater asset visibility and management. MLDN will facilitate the movement of administrative workload from ships to shore. Funding supports design, development, and testing of enterprise database and MLDN technologies for two components of NTCSS mission requirements: maintenance management and supply chain management. FORCEnet: Initiative's mission is to (a) accelerate the transformation to a Distributed, Networked force; (b) achieve interoperability based on Architectures and Standards; and (c) Experiment with, evaluate and employ the enabling technologies. Effort is a non-acquisition program that is the operational instantiation of FORCEnet. The end-state is a distributed network of weapons, sensors, Command and Control (C2), platforms and warriors. Maritime Domain Awareness (MDA): Maritime Domain Awareness is the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy or environment. MDA objectives include the persistent monitoring of and ability to access and maintain data on vessels, cargo, people, and infrastructure; and the ability to collect, fuse, analyze, and disseminate information to decision makers to facilitate effective understanding. This initiative will identify, develop and transition data fusion and mining, replication, sharing and assessment tools to achieve MDA across the non-classified, unclassified and classified enclaves. This warfighting enhancement is designed to achieve an all-source MDA capability, leveraging existing MDA initiatives in the developmental phase and ensuring the best products transition to strategic, operational and tactical users as well as further development of MDA prototypes. The products will support all-source data fusion, replication of MDA related data gathered in various operations such as expanded-maritime interdiction operations (E-MIO), sharing information with allies, and developing subject matter expertise and assessment tools to achieve MDA and enhance operational decision making. Deep Lightning Bolt / Rapid Capability Development (DLB/RCD): Transformational initiative for the Navy, focused on the introduction of technologies will have the ability to immediately enhance the Navy's Sea Power 21 objectives. Congressional Increases: FY08 includes Congressional increases for Distributed Multi-Platform Sensor Support System. FY09 includes Congressional increases for Intelligence, Surveillance, and Reconnaissance (ISR) Enhancements.			

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		R-1 ITEM NOMENCLATURE 0604231N - Tactical Command System
BA-5		

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>
(U) Funding:			
FY09 President's Submit	87.577	128.742	73.215
FY10 President's Submit	87.363	102.164	86.462
Total Adjustments	-0.214	-26.578	13.247
Summary of Adjustments			
Congressional Rescissions	-0.714		
Congressional Adjustments		-26.578	
SBIR/STTR/FTT Assessment	-0.364		
Program Adjustments	0.925		14.247
Miscellaneous Adjustments	-0.061		-1.000
Subtotal	-0.214	-26.578	13.247

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification			DATE: May 2009
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)			
	From	To	Reason
Acquisition Milestones			
JMPS 1.2.4 OTRR	1Q FY08	4Q FY08	Provide and test additional Capabilities to the Rotary Wing Community (V1.2.4) by adding components to include: Common Mission Data Loader (CMDL) and Weapon Engagement Zone Overlay Tool (WEZOT).
JMPS V.1.4 OTRR	4Q FY09	1Q FY10	Change in the OTRR schedule
JMPS V.1.2.4 OT	2Q FY08	1Q – 2Q FY09	Corresponding change in OT schedule to reflect Change in OTRR schedule.
	From	To	Reason
Test and Evaluation Milestones			
MPE Integration/Validation	1Q FY07	4 Q FY13	MPE Integration/Validation was separated into two distinct milestones. Framework (FW) 1.2.3, which serves the Fixed Wing Community, and FW 1.2.4, which serves the Rotary Wing Community,
FW 1.2.3 MPE Integration/Validation		2Q FY08-4Q FY10	Formerly a part of MPE Integration/Validation, FW 1.2.3, serving the Fixed Wing Community, Became a distinct milestone.
FW 1.2.4 MPE Integration/Validation		2Q FY09-4Q FY13	Formerly a part of MPE Integration/Validation, FW 1.2.4, serving the Rotary Wing Community, Became a distinct milestone.
JMPS V 1.2.4 System Test	1Q-4Q FY07	1Q FY07- 3Q FY08	Extended to fully integrate and test added Capabilities necessary to meet Fleet needs.
JMPS V1.4 FQT	4Q FY 08	3Q FY 09	Slipped due to Air Force Contracting Delays
JMPS V1.4 Systems Test	1Q – 4Q FY09	2Q FY 09 – 1Q FY 10	Sipped due to Air Force Contracting Delays
Production Milestones			
JMPS V1.2.4 IOC	2Q FY08	3Q FY09	Slipped due to Air Force Contracting Delays

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
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: TACTICAL/MOBILE (TACMOBILE) SYSTEMS (Project 0486) Tactical/Mobile Systems Increment 2.0 schedule changes are due to Operational Assessment (OA) slipping from 1st Qtr FY08 to 2nd Qtr FY08. Fleet personnel were unavailable to support test event. OA was completed March 2008. This schedule change in OA has caused subsequent impact to program schedule, MSC decision was conducted 3rd Qtr FY08, Operational Test was conducted 1st Qtr FY09. The FRP is scheduled for 3rd Qtr FY09. Naval Tactical Command Support System (NTCSS) (Project 3032) Program schedule has been updated to include an increase in funds to develop One Naval Aviation Logistics Command/Management Information System (NALCOMIS) and Multi-Unit Identification Code (UIC). Global Command and Control System - Maritime (GCCS-M) (Project 0709, 2305) The program experienced an 11 month strategic pause endorsed by Milestone Decision Authority. Per the MDA, PMO was directed to restructure the Program of Record (POR) to migrate to a Common Computing Environment (CCE) and a Service Oriented Architecture. MDA also directed Increment 4.1 be redesignated as Increment 2 and be based on GCCS-J 4.2 or later. This implementation will be fielded on Force level platforms only. Additionally, the Program Management Office (PMO) is developing an implementation plan to continue to provide scaled Maritime-unique Command and Control (C2) services at the group and unit level platform. Current plans for NECC to replace GCCS-M currently only extend to the Shore sites and Force level platforms. Trusted Information Systems (Project 2009) Radiant Mercury Version 5.0 slipped from Q3 FY09 to Q4 FY09 due to delay in award of follow-on developer contract. Radiant Mercury Version 5.X schedule slip from Q2 FY10 to Q2 FY11 is caused by the delay in delivery of RM Version 5.0 software. CENTRIXS (Project 2307) The program schedule has been modified to reflect a slip in MS C Inc 1 from 4Q FY08 to 3Q FY09. As a result, there is a shift in Full Rate Production (FRP) to February, 2010 (2Q FY10) for Increment 1 Force Level (FL) & January, 2011 (2Q FY11) for Increment I Unit Level (UL). Full transition to CANES Inc 1 occurs in FY 2010. ISNS (Project 2307) ISNS Inc 2/Canes Material Development Decision (MDD) shifted Milestone B 1Q FY09 to 3Q FY10. In addition, a fielding decision for D(V)X has been added in 2Q FY09. Full transition to CANES Inc 1 occurs in FY 2010. (U) Technical: Not applicable		

EXHIBIT R-2, RDT&E Budget Item Justification

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME 2213 Mission Planning			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
2213 MISSION PLANNING	29.753	18.588	18.782					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Mission Planning: The Joint Mission Planning System (JMPS) is the CNO's designated automated mission planning system for the Navy. JMPS enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, and conduct post-mission analysis. JMPS is a mission critical system which 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). Common requirements are identified and capabilities are developed and prioritized in an evolutionary approach. An individual JMPS mission-planning environment (MPE) is a combination of the JMPS framework, common capabilities, and the necessary system hardware required to satisfy mission planning objectives. Most Tactical Naval Aviation platforms are dependent solely on JMPS to plan precision guided munitions, sensor systems, tactical data links, secure voice communications, and basic Safety of Flight functions. The following type/model/series naval aircraft are supported by JMPS: F/A-18 A-F, E-2C, EA-6B, S-3, MV-22 and AV-8B. Future JMPS platforms include: CH-46E, CH-53, MH-53E, H 60B/F/H, UH-1N, P-3, KC-130T/J, C-2, AH-1W/Z, EA-18G, H-60 R/S, VH-71, P-8, E-2D, UH-1Y, H-53K, VH-3, VH-60 and C-130. As directed via the CNO's Navy Enterprise Architecture and Data Strategy (NEADS) policy, the next JMPS architecture version (Framework V 1.4) will provide a Service Oriented Architecture (SOA) that delivers net centric capability.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME 2213 Mission Planning	
B. Accomplishments/Planned Program			
JMPS Version 1.2.3/1.2.4	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	2.910	0.001	0.001
RDT&E Articles Quantity			
JMPS Framework Version 1.2.3 efforts, DOD/CIO mandate for IPV6 with the migration to XP operating system . JMPS Framework 1.2.3 RDT&E tasks were completed in FY08. JMPS Version 1.2.4 efforts: development of common helo tool sets and navigation functionality and common helo transfer device.			
JMPS Expeditionary (JMPS-E)	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	2.329	1.688	0.477
RDT&E Articles Quantity			
JMPS Expeditionary (JMPS-E): The goal of the JMPS-E team is to produce a scaleable, tailorable, mission planning and execution monitoring tool for the staffs of the Expeditionary Strike Group (Marine Expeditionary Unit + Amphibious Squadron). The primary focus of this capability is the crisis action or deliberate planning and execution of ship-to-objective maneuver. The variety of forces involved in an expeditionary operation amplifies the need for web-based technologies to enable collaborative planning, improve overall situational awareness and enable the monitoring of mission execution from different locations. A staff level planner capability will provide the ability to collaborate and share information in a distributive environment to speed the planning process, provide concurrent planning, and track execution of plans. A tailored operational-level mission planner will provide the ability to plan and analyze expeditionary missions for aircraft, amphibious, naval, and other support craft under various mission configurations and operational threat environments. The primary outputs are tasking orders, course of actions (COAs), route plans, and mission briefs in digital and printed forms. Execution-monitoring tools are required to minimize exposure during ship-to-objective and other force movements. This capability will be initially fielded using Framework Version 1.2.4.			
Framework V1.4	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	12.425	4.651	0.001
RDT&E Articles Quantity			
Framework Version 1.4 contract was awarded in 2007. Previous funding constraints prohibited the current Navy MPEs from migrating to FW Version 1.3 with the AF MPEs. Funding for FW 1.4 will be used to support system engineering processes, management interface controls, software architectural analysis, requirements management and a centralized website for MPE developers. Migration to a .net environment in framework versions 1.3 & 1.4 will enable interoperability improvements through utilization of the SOA and supported by the Global Information Grid-Enterprise Services (GIG-ES).			

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME 2213 Mission Planning	

B. Accomplishments/Planned Program (Cont.)

MPE Integration and Test	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	12.088	12.247	18.302	
RDT&E Articles Quantity				

Mission Planning Environment (MPE) Integration and Test efforts support the Navy's developmental testing/operational testing (DT/OT), integration and system of system testing for MPE fielding. Efforts consist of integration components provided by various developers into a platform-centric MPE and testing of the integrated MPE. MPE integration and testing results in a consistent and repeatable system configuration that enables stability and reliability. Current budget supports the integration and testing of 21 MPEs in FY09 and 21 MPEs in FY10.

Common Capabilities	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.001	0.001	0.001	
RDT&E Articles Quantity				

Common Capabilities (CC) software augments core mission planning capabilities with capabilities common across multiple aircraft. CC will be developed as common software tools to automate mission planning in the air warfare, expeditionary operations and maritime environments. Requirements for CC include: Mission Rehearsal, Collaboration, Query and Process Imagery, Intel, Communications Planning, Asset Management, Anti-Submarine Warfare (ASW), etc. Continue component development, full documentation, and component installation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: September 2008																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME 2213 Mission Planning																																				
C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;"><u>Line Item No. & Name</u></th> <th style="text-align: right; width: 8%;"><u>FY 2008</u></th> <th style="text-align: right; width: 8%;"><u>FY 2009</u></th> <th style="text-align: right; width: 8%;"><u>FY 2010</u></th> <th style="text-align: right; width: 8%;"><u>FY 2011</u></th> <th style="text-align: right; width: 8%;"><u>FY 2012</u></th> <th style="text-align: right; width: 8%;"><u>FY 2013</u></th> <th style="text-align: right; width: 8%;"><u>FY 2014</u></th> <th style="text-align: right; width: 8%;"><u>FY 2015</u></th> <th style="text-align: right; width: 10%;"><u>To Complete</u></th> <th style="text-align: right; width: 10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BLI 287600 TAC A/C Mission Planning Systems (OPN)</td> <td style="text-align: right;">8.757</td> <td style="text-align: right;">9.484</td> <td style="text-align: right;">9.102</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> </tr> <tr> <td>PE 0208006F Air Force Mission Planning Support System (total)</td> <td style="text-align: right;">104.575</td> <td style="text-align: right;">97.560</td> <td style="text-align: right;">98.574</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Engineering Manufacturing Development (EMD) efforts. 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, extensive joint requirements analysis, design to cost estimates, an architecture concept, and 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 Systems (TAMPS) and USAF Air Force Mission Support Systems (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 basic flight planning components. Phase II focused on strike planning requirements (i.e., support Precision Guided Missions and other tactical data load intensive missions) in order to migrate platforms from legacy mission planning systems to JMPS. The USAF continued development of JMPS Version 1.3 and has contractual control of the program which is facilitated via a Mission Planning Enterprise Contract (MPEC). The USN continued limited development in JMPS Version 1.2 which is focused on helicopter platform migrations. USN integration and fielding strategy changed to support a Mission Planning Environment (MPE) focus, where framework and common components are integrated as bundled packaged and fielded by airwings. The completion of Phase II is targeted for JMPS Version 1.4, which focuses on migration to a .net architecture and rejoins the multi-service enterprise to reduce costs through co-development. JMPS 1.4 will be divided into three builds, numbered 1.4.1 through 1.4.3. As platforms plan their migration to JMPS, the acquisition strategy, plan, and baseline will be updated in order to drive the retirement of legacy mission planning systems.										<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI 287600 TAC A/C Mission Planning Systems (OPN)	8.757	9.484	9.102							Continuing	PE 0208006F Air Force Mission Planning Support System (total)	104.575	97.560	98.574							Continuing
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>To Complete</u>	<u>Total Cost</u>																																
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Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: September 2008				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604231N - TACTICAL COMMAND SYSTEM			2213 Mission Planning						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development/CC	MIPR	USAF, Hanscom AFB, MA	0.001	0.001	12/08	0.001	03/10					
Primary Software Development/FW	MIPR	USAF, Hanscom AFB, MA	17.140	3.400	03/09	0.002	03/10					
Primary Software Dev./JMPS-E	MIPR	USAF, Hanscom AFB, MA	2.365	0.900	02/09	0.310	02/10					
Primary Software Development	SS/CPIF	Northrop Grumman, VA	68.091									
Primary Software Development	VARIOUS	VARIOUS	7.791	2.977	12/08	2.614	12/09					
		FY99-06	15.791									
Subtotal Product Development			111.179	7.278		2.927						
Remarks:												
Integrated Logistics Support	WX	SPAWAR, Phila, PA	10.538	1.000	01/09	0.575	01/10					
Subtotal Support			10.538	1.000		0.575						
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: September 2008				
APPROPRIATION/BUDGET ACTIVITY RDTE&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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Syst Eng Integration & Test	WX	NAWCWD, Pt . Mugu, CA	30.038	8.518	12/08	13.360	12/09					
Test & Evaluation	WX	COTF, Norfolk, VA	0.257	0.260	01/09	0.143	01/10					
Test & Evaluation	WX	MCOTEA, Quantico, VA		0.175	01/09	0.021	01/10					
Subtotal T&E			30.295	8.953		13.524						
Remarks: COTF, Naval Command Operational Test and Evaluation Force MCOTEA, Marine Corps Operational Test & Evaluation Activity												
Program Management Support	WX	NAWCAD, Pax River, MD	25.295	1.357	12/08	1.756	12/09					
Subtotal Management			25.295	1.357		1.756						
Remarks:												
Total Cost			177.307	18.588		18.782					214.677	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:									
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME									
RDT&E, N / BA-5												0604231N - TACTICAL COMMAND SYSTEM												2213 Mission Planning									
Fiscal Year	2008				2009				2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Acquisition Milestones																																	
JMPS V 1.2.4 OTRR			▲																														
JMPS V 1.4 OTRR										△																							
JMPS V 1.2.4 OT				■	■	■																											
JMPS V 1.4 OT											■	■																					
Test & Evaluation Milestones																																	
FW 1.2.3 MPE Integration/Validation		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					
FW 1.2.4 MPE Integration/Validation						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					
JMPS V 1.2.4 Sys Test	■	■	■	■																													
JMPS V 1.4 FQT											△																						
JMPS V 1.4 Sys Test											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					
Production Milestones																																	
JMPS V 1.2.4 IOC											△																						
JMPS V 1.4 IOC														△																			
Production Deliveries																																	

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-4a, Schedule Detail

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009			
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					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost		2.402	8.919	10.897					
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Tactical/Mobile (TacMobile) Systems: The Tactical/Mobile program provides evolutionary systems and equipment upgrades to support Maritime Component Commanders (Expeditionary Ashore) and Maritime Patrol and Reconnaissance Force 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 Operations Centers (TOCs) (formerly Tactical Support Centers (TSCs)), the Mobile Tactical Operations Centers (MTOCs) (formerly 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. Tactical/Mobile Command and Control systems are based on the Global Command and Control System - Maritime (GCCS-M) architecture, which is Defense Information Infrastructure (DII) Common Operating Environment (COE) compliant. TOCs and their equivalents provide Command, Control, Communications, Computers and Intelligence (C4I) capability, air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MTOCs and their equivalents are scalable and mobile versions of the TOC for operations from airfields that do not have TOC support. This program assures that existing ToCs and MTOCs are modernized to fulfill their operational requirements. TOC/MTOC will continue to provide the ground Command and Control capabilities and C4I interfaces for the Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FOS) aircraft and systems evolution including P-3C aircraft updates to sensors and weapons systems, such as the Anti-Surface Warfare Maritime Improvement Program (AMIP), and the Command Control Communications Computers for Anti-Submarine Warfare (C4 for ASW) P-3C aircraft upgrades, as well as development of emergent, ground C4I support capabilities for the P-8A Multi-mission Maritime Aircraft (MMA) and Broad Area Maritime Surveillance Unmanned Aerial System (BAMS UAS). The Joint Mobile Ashore Support Terminal (JMAST) supports the Fleet Commanders, Naval Component Commanders, and other military commanders from forward deployed bases or operational sites ashore that are not equipped with C4I facilities. It provides the Navy Component, and other military commanders with flexible, mobile, organic response, 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 was designated as an Acquisition Category (ACAT) III weapons system program July 2004 by the Program Executive Officer (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, as well as augments improvements in airborne networking. Transformation of the TOC/MTOC Force to a more mobile, scaleable, and network-centric configuration, convergence of TOC, MTOC, and JMAST architectures to a single configuration, and as an integral component of the Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FOS), operational C4I integration support for new and upgraded Maritime Patrol and Reconnaissance Aircraft (MPRA) such as MMA (Multi-mission Maritime Aircraft), AIP, BAM UAS as well as other Command and Control (C2) and fighter aircraft are primary objectives. FY09: Funding increase supports SEA Shield efforts in Anti Submarine Warfare (ASW) planning and Joint Mission Planning System (JMPS) integration efforts with P3, P8A and TacMobile. Funding increase also supports system engineering of networking capabilities and air platform integration. FY10: Funding increase supports TacMobile systems development to achieve increased modularity, enhancing flexibility and mobility, to offset the size/weight/cube of additional required aircraft interfaces that are currently under development. Network-centric and airborne C4I integration efforts continue as improvements to airborne networking technology are matured. Will achieve interoperability with emerging MPRF Aircraft and Sensors while reducing TacMobile footprint enhancing Mobility capability.									

Exhibit R-2a, RDTEN Project Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems		
(U) B. Accomplishments/Planned Program				
Net Ready	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.263	0.864	0.978	
RDT&E Articles Quantity				
FY08 - Communications: Began investigation and evaluation of integration of Wide Band Line Of Sight (LOS) and Beyond LOS (BLOS) Tactical Edge Networking Waveforms, to support Internet Protocol (IP) connected end-to-end Net Centric Undersea Warfare (USW) communications between TacMobile units and Maritime Patrol and Reconnaissance Aircraft (MPRA) to enable networked reach back, data sharing and real time collaborative analysis. Began investigation of requirements to enhance Homeland Defense and Disaster Relief communications capabilities compatibility to support interoperability and information sharing. FY09 - Communications: Integrate Wide Band LOS and BLOS Tactical Edge Networking Waveforms to support IP connected end-to-end Net Centric USW communications between TacMobile units and MPRA enabling networked reach back, data sharing and real time collaborative analysis. Integrate communications capabilities compatible with Federal, State and Local government agencies and Non Government Organizations (NGO) activities to enhance Humanitarian Assistance/Disaster Relief (HADR) and Homeland Defense (HD) interagency interaction. FY10 - Communications: Continue with Integration Wide Band LOS and BLOS Tactical Edge Networking Waveforms to meet migration of Defense Information Systems Agency (DISA) interoperability standards, incorporating Black Core Routing to support IP connected end-to-end Net Centric USW communications between TacMobile units, MPRA and supported commanders and other external agencies. Research and coordinate with appropriate Communities of Interest (COI's) to implement appropriate data strategies (open-source extensible markup language (XML) metadata or schemas) to enable data visibility, accessibility, understanding and trustworthiness.				
FTAS/TACMASS	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.798	0.717	0.951	
RDT&E Articles Quantity				
FY08 - Analysis: Developed Sea Shield USW, FORCEnet Intelligence, Surveillance & Reconnaissance (ISR) & Common Operational/Tactical Picture (COTP) transformation post flight acoustic analysis capabilities, enhancing the detect to engage sequence for P-3 Anti-surface warfare Improvement Program (AIP), Block Modification Update Program (BMUP), Anti-Submarine Warfare (ASW) Maritime Improvement Program (AMIP) and P-8A by utilizing Enhanced Signal Processing, Advanced Sonobuoy Processing and Networked Data to feed Collaborative Planning and expediting Target Confirmation. Began transformation of TacMobile non-acoustic Electro Optic and Infra Red analysis capabilities for P-3 AIP, BMUP, AMIP and P-8A, to incorporate FORCEnet ISR & Common Operational and Tactical Picture (COTP) tenets. FY09 - Analysis: Integrate Acoustic Analysis capabilities to support post-flight Fast Time Acoustic Analysis and intelligence gathering for Operational Plans (OPLANs) execution to include advanced multi-static's and digital capabilities. Integrate advanced Non-Acoustic Electro Optical/Infrared (EO/IR) Analysis capabilities to support emerging and developing Maritime Patrol and Reconnaissance ISR sensor systems. FY10 - Analysis: Develop/Integrate auto detection, tracking and screening capabilities to reduce acoustic analyst workload and increase ASW probability of detection. Develop concurrent processing enhancements to increase processing capacity and reduce processing time to support increased volume of recorded MPRA ASW acoustic data. Integrate advanced Joint and Common display formats to enhance system Operator Machine Interface (OMI).				

Exhibit R-2a, RD TEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems		

(U) B. Accomplishments/Planned Program

Aircraft Interfaces	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.144	0.538	0.864	
RDT&E Articles Quantity				

FY08 - Media: Began transformation of TacMobile Command Control Computers Communications and Intelligence (C4I) ground support to include P-8A Multi-mission Maritime Aircraft (MMA) and Broad Area Maritime Surveillance Unmanned Aerial System (BAMS UAS) to ensure platform Warfighting wholeness. Assessed and analyzed MMA and began assessment of BAMS UAS data, services, Information Assurance (IA), and transport requirements to develop discovery-search and storage services capable of providing persistent and reliable searchable access and storage as a proxy for the P-8A MMA produced data that satisfies the data sharing and data visibility tenets of the Department of Defense (DoD) Net-Centric Data Strategy. Continued to research engineering and design alternatives to read/write shipwreck data, bottom contour data, and training scenarios on to one of the P-3C Anti-Submarine Warfare (ASW) Maritime Improvement Program (AMIP) Data Acquisition Storage Devices (DASDs) (dual load).

FY09 - Media: Continue to develop new ground support capabilities to support capabilities being developed for Maritime Patrol and Reconnaissance Aircraft (MPRA). Continue to transform TacMobile C4I ground support to include P-8A Multi-mission Maritime Aircraft (MMA) and Broad Area Maritime Surveillance Unmanned Aerial System (BAMS UAS), and other Command and Control (C2) and intelligence, Surveillance and Reconnaissance (ISR) platforms, to ensure platform Warfighting wholeness. Integrate and evaluate discovery-search and storage services capable of providing persistent and reliable searchable access and storage as a proxy for the P-8A MMA produced data that satisfies the data sharing and data visibility tenets of the DoD Net-Centric Data Strategy. Design and develop software application that stores shipwreck and bottom contour data for P-3C AMIP and allows the user to segment portions of this for a particular Area of Responsibility (AOR).

FY10 - Media: Integrate new ground support capabilities to support capabilities being developed for Maritime Patrol and Reconnaissance Aircraft (MPRA) incorporating P-8A Multi-mission Maritime Aircraft (MMA). Continue to evaluate and assess those interfaces required to support Broad Area Maritime Surveillance Unmanned Aerial System (BAMS UAS) and other aircraft to ensure platform Warfighting wholeness. Identify, evaluate, and assess interfaces required for network-centric operations with various air platforms involved in airborne networks. Continue development of discovery-search and storage services capable of providing persistent and reliable searchable access and storage as a proxy for the P-8A MMA produced data that satisfies the data sharing and data visibility tenets of the DoD Net-Centric Data Strategy.

Tactical Data Links	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.260	0.161	0.21	
RDT&E Articles Quantity				

FY08 - Tactical Data Links: Began investigation and initiated development to enable TacMobile support for LINK-16 data and other emerging aircraft data transport devices. Investigated and initiated development to leverage multiple communication transport nodes to enable TacMobile to provide interoperable Internet Protocol (IP) addressable high bandwidth data transmission to support persistent Command and Control (C2), P-3 AMIP & P-8 MMA sensor, and interagency information capabilities.

FY09 - Tactical Data Links: Integrate and test software and communications capabilities to provide interoperable IP addressable high bandwidth data transmission to support persistent C2, sensor, and interagency information capabilities. Continue development and begin integration of a portable LINK-16 capability solution.

FY10 - Tactical Data Links: Integrate and test Link-16 portable capability, Begin investigation of future Tactical Data Link (TADIL) requirements that transition from legacy systems to support emerging and evolving MPRA interface requirements while maintaining support for NATO Standardization Agreement (STANAG) defined minimum capabilities.

Enterprise Solutions	FY08	FY09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	0.570	0.979	1.301	
RDT&E Articles Quantity				

FY08 - Enterprise Solutions/Computers: Assessed and Analyzed TacMobile system for compliance to the data, services, Information Assurance (IA), and transport requirements of FORCEnet Architecture and Standards including Net centric Enterprise Solutions for Interoperability (NESI), DoD Metadata Registry, Internet Protocol version 6 (IPv6), and Common Criteria. Analyzed and tested interfaces with other related systems for data schemas, data, Information Assurance (IA), and transport interoperability to ensure horizontal integration. Reviewed previous analysis and design toward defining development of a fully secure, adaptive, and networked end-to-end Service Oriented Architecture (SOA) with seamless access to timely assured, accurate, and complete decision-quality information in a dynamic collaborative, information-sharing environment. Develop and analyze a logical data reference model and support registering of MPRA unique data schemas into the DoD Metadata Registry to support data interoperability. Analyzed MPRA Information Assurance (IA) requirements and began development of adequate IA controls to be interoperable on the Global Information Grid (GiG) with other related systems. Began investigation and performed necessary analysis to identify potential alternatives to implement appropriate integrated Multi-level Security Networking options in TacMobile systems. Analyzed GiG Enterprise Services options and began development of migration plans for integration into the TacMobile architecture. Commenced development of the integration of Tactical Support Center (TSC) and Mobile Operations Control Center (MOCC) configurations. Began design for development of next generation software and hardware that is modular and scalable, surge able and sustainable, promoting responsiveness to mission requirements. Began development of replacement for obsolete, maintenance-intensive hardware, elimination of legacy systems to incorporate technologies that reduce logistics tail and ease training burden.

FY09 - Computers/Knowledge Management: Integrate TSC and MOCC configurations. Develop next generation software and hardware that is modular and scalable, surgeable and sustainable, promoting responsiveness to mission requirements. Develop replacement for obsolete, maintenance-intensive hardware, eliminate legacy systems and technologies to reduce logistics tail and ease training burden. Integrate Distributed Common ground System Navy (DCGS-N) Intelligence Surveillance Reconnaissance (ISR) and Undersea Warfare (USW) Decision Support System (DSS) (USW-DSS) USW Battle Space Characterization capabilities and Global information Grid (GiG) Enterprise Services into TacMobile systems architecture.

FY10 - Begin investigation into modern navy networking infrastructure appropriate for a tactical and mobile environment that comply with net ready, Defense Information Systems Agency (DISA) and Navy Net-Centric Operating standards that support evolutionary transition to a Services Oriented Architecture with Cross Domain accessibility. Design and develop network infrastructure to meet increased ISR data volume, provide redundant back-up and disaster recovery Quality of Service (QOS). Integrate architectural updates to maintain evolving information assurance standards.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0486 Tactical/Mobile (TacMobile) Systems		
(U) B. Accomplishments/Planned Program				
C2	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.367	0.276	0.258	
RDT&E Articles Quantity				
FY08 - Command and Control (C2): Developed guidelines and conducted preparatory planning to enable development of technical documentation, and made necessary preparations to support fielding and evaluation of Global Command and Control System-maritime (GCCS-M) 4.X follow on capability in TacMobile Systems. Investigated use of other applicable C2 components such as Under Sea Warfare Decision Support System (USW DSS), environmental and meteorological components, and Joint C2 applications. FY09 - Command and Control (C2): Investigate, initiate, and implement plans to integrate Intelligence Preparation of the Battle Space capabilities to provide access to Signal Intelligence (SIGINT), Electronic Warfare (EW), and General Military Intelligence database products, into TacMobile systems architecture. Investigate, initiate, and implement transition plans to future release of GCCS or follow on Joint Command and Control capability. FY10 - Command and Control (C2): Identify appropriate C2 GCCS-M 4.0.1 follow on for integration to provide Intelligence Preparation of the Battle Space capabilities to provide access to Signal Intelligence (SIGINT), Electronic Warfare (EW), and General Military Intelligence database products, into TacMobile systems architecture and provides Common Operational Picture (COP) management, display, and processing capabilities that meet information assurance and interoperability standards.				
Mission Planning	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.000	5.384	1.878	
RDT&E Articles Quantity				
FY-08 - For FY-08 and prior, Mission Planning development was conducted as a portion of Fast Time Analysis System (FTAS)/ Tactical Mobile Acoustic Support System (TaCMASS) development. In response to increased warfighter emphasis, and Naval Aviation migration to a common core Mission Planning Environment, development efforts have expanded and warrant increased visibility of separate budgeting, tracking and planning. FY09 - Mission Planning: Analyze Fleet requirement to identify unique Maritime Patrol fixed wing mission planning capabilities for P-3C and its' Command Control Communications Computers Intelligence Surveillance Reconnaissance (C4ISR) Ground Support Systems (Tactical Support Centers (TSC) and Mobile Operations Control Centers (MOCC)). Develop overarching Maritime Patrol Anti Submarine Warfare (ASW) mission planning user environment to operate with Joint Collaborative distributed networks that interface to existing Multistatic, Acoustic and Non Acoustic ASW mission planning Tactical Decision Aids as well as ASW Decision Support Systems and Tactical Decision Aids (TDA) under development. Develop Maritime Patrol weapons planning environment for weapons such as Standoff Land Attack Missile-Extended Range (SLAM-ER). Integrate mission planning outputs to Maritime Patrol and Reconnaissance Aircraft (MPRA) flight, mission, and sensor systems for development of Aircraft Pre-flight Insertion Data (PID) and participation in coordinated ASW mission rehearsal. FY10 - Mission Planning: Integrate overarching Maritime Patrol ASW mission planning user environment to operate with Joint Collaborative distributed networks that interface to existing Multistatic, Acoustic and Non Acoustic ASW mission planning Tactical Decision Aids as well as ASW Decision Support Systems and TDA's under development. Integrate Maritime Patrol weapons planning environment for weapons such as SLAM-ER. Integrate mission planning outputs to MPRA flight, mission, and sensor systems for development of Aircraft Pre-flight Insertion Data and participation in coordinated ASW mission rehearsal.				
MPRF Interoperability/TacMobile Footprint Reduction	FY08	FY09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.457	
RDT&E Articles Quantity				
FY08/09 - For FY-08/09 and prior, Maritime Patrol and Reconnaissance Force (MPRF) Interoperability and TacMobile Footprint (key Mobility Capability driver) issues were considered as a portion of Analysis of Alternatives across all aspects of TacMobile development efforts. As the number of systems and aircraft interfaces required to support Maritime Patrol and Reconnaissance Aircraft (MPRA) continue to grow, combined with fleet requirements to operate from the littorals with increasing flexibility, architectural engineering focus toward Mobility capabilities has taken on increased importance and emphasis. In response to this increased emphasis, development efforts will expand and warrant increased visibility of separate budgeting, tracking and planning. FY10 - Architecture Engineering: Assess and analyze TacMobile systems for opportunities to enhance flexibility and mobility offsetting additional aircraft interface device size/weight/cube by developing and incorporating increased modularity to transition from hardware independent solutions. Analyze convergence of TSC and MOCC architecture toward common baseline to reduce platform unique training requirements and duplicative life cycle logistics costs. Explore automation of system functionality to reduce operator to operator and operator to machine interactions, to offset increasing workload as additional MPRA platforms and capabilities are introduced that require TacMobile systems support. Explore Solutions to minimize/consolidate MPRA media interface devices and streamline data transfer rates.				

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
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:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
MPRF Mission Support Systems (OPN - BLI 2246) Note 1	9.850	25.114	22.464
TacMobile (OPN - BLI 2906)	4.751	5.194	11.820

Note 1: Maritime Patrol & Reconnaissance Force (MPRF) Mission Support Systems formerly Tactical/Mobile Systems (Aircraft Interface).

(U) D. ACQUISITION STRATEGY:
 Evolutionary Acquisition - Increment 2.0 provides enhanced Beyond Line of Site Global Information Grid (GIG) reach back capability, and supports Maritime Situational Awareness connectivity enhancements for data exchange with Maritime Patrol and Reconnaissance Force (MPRF) aircraft and with Coalition data networks. It incorporates Anti Submarine Warfare (ASW) acoustical analysis improvements and new P-3 aircraft ASW interfaces. Increment 2.1 will support migration to a follow on GCCS-M version and introduction of the P-8A Multi-mission Maritime Aircraft (MMA). Future Increments will support introduction of the Broad Area Maritime Surveillance (BAMS) Unmanned Aerial System (UAS) and other Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FOS) Aircraft and Systems.

(U) E. MAJOR PERFORMERS:
 Tactical/Mobile currently leverages Space and Naval Warfare Systems Command (SPAWAR) Systems Center Atlantic (SSC-Atlantic), and SSC-Atlantic omnibus contracts for all design, development, and integration of new capabilities into the TacMobile systems.

(U) G. METRICS:
 The competitive contract under development will specify reporting metrics for cost, schedule, and performance status assessment and risk management.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604231N - Tactical Command System			0486 Tactical/Mobile (TacMobile) Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VARIOUS	VARIOUS	1.226	0.656		1.832	VARIOUS					
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	VARIOUS	VARIOUS	20.212	2.546	VARIOUS	3.030	VARIOUS					
Training Development	VARIOUS	VARIOUS	0.200	0.350		0.427	VARIOUS					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			21.637	3.552		5.289						
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	36.810	4.162	VARIOUS	2.919	VARIOUS					
Integrated Logistics Support						0.125						
Configuration Management						0.100						
Technical Data						0.160						
Studies & Analyses						0.325						
GFE												
Award Fees												
Subtotal Support			36.810	4.162		3.629						
Remarks:												

Exhibit R-3, Project Cost Analysis

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation						0.600						
Operational Test & Evaluation	WX	OPTEVFOR	3.585	0.175	VARIOUS	0.226	VARIOUS					
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			3.585	0.175		0.826						
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS	0.050	0.200		0.210	VARIOUS					
Government Engineering Support	WX	SSC CH	0.200	0.350		0.387	VARIOUS					
Program Management Support	WX	SSC CH	11.641	0.450	VARIOUS	0.519	VARIOUS					
Travel	WX	SSC CH	0.030	0.030		0.037	VARIOUS					
Transportation												
Subtotal Management			11.921	1.030		1.153						
Remarks:												
Total Cost			73.953	8.919		10.897						
Remarks:												

Exhibit R-3, Project Cost Analysis

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: May 2009																				
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																												
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015															
	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	Inc 2.0 MS C TSC/MOCC				Inc 2.0 FRP TSC/MOCC																																							
Prototype Phase																																												
Development/Integration																																												
Delivery									Inc 2.0 IOC																																			
													Tech Refresh																															
Software Deliveries	▲	▲	▲	▲	▲	Quarterly Patches & Updates				▲	▲	▲	▲	▲	▲	▲																												
Test & Evaluation Milestones					Inc 2.0 DT								Inc 2.1 DT																															
Development Test					▲								▲																															
Operational Test	Inc 2.0 OA								Inc 2.0 OT				Tech Refresh OA																															
	▲				▲				▲																																			
Production Milestones																																												
Deliveries																																												

Note: Acquisition strategy is being revised to reflect a tech refresh in lieu of increment 2B.

Exhibit R-4, Schedule Profile

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
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 2008	FY 2009	FY 2010					
Project Cost	3.717	3.803	0.000					
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy's Integrated Imagery and Intelligence Applications (I3 Apps) are an integrated set of applications designed to support tactical intelligence processing and provide a useful integration framework to ensure joint intelligence interoperability across the Global Command and Control System (GCCS) and Distributed Common Ground System (DCGS) enterprise. Development of I3 applications includes end to end intelligence analysis applications that leverage the Modernized Integrated Database (MIDB) and military integration with NGA-provided digital map and imagery systems. I3 imagery applications provide for archiving, viewing and measurement of still and video images. This effort is also continuing the transition to Commercial Off The Shelf (COTS) hardware and software. The Navy's I3 effort is part of the Military Intelligence Program (MIP) program, managed by the Secretary of Defense through the Assistant Secretary of Defense for Command, Control, Communications, Computers and Intel (C4I). Beginning in FY10, I3 Applications funding will be realigned to the Distributed Common Ground System - Navy Program Element 0305208N Project 2174.								

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications		
(U) B. Accomplishments/Planned Program				
C2 Fires Integration	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	1.096	1.017	0	
RDT&E Articles Quantity				
FY08: Conducted operational testing and continued to provide for the technical migration of standardized, linked intelligence and imagery software tools and services from a platform-centric model to a services oriented architecture. FY09: Continue to conduct operational testing, and provide for the technical migration of standardized, linked intelligence and imagery software tools and services from a platform-centric model to a services oriented architecture, ensuring accessibility and analysis / targeting support based on current / next generation sensors and data streams including Moving Target Indicator (MTI), Unmanned Aerial Sensors (UASs), and the Distributed Common Ground Station (DCGS) joint enterprise. FY10: Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10.				
Imagery/Video Processing	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.712	0.852	0	
RDT&E Articles Quantity				
FY08: Imagery Exploitation - Conducted operational testing and conducted new software development to provide the capability for Commanders, their battle staffs, and supporting intelligence analysts to exploit Intelligence, Surveillance and Reconnaissance (ISR) from current/next generation unmanned aerial vehicle (UAV) platforms and national sensors. FY09: Imagery Exploitation - Continue to conduct operational testing and new software development to provide the capability for Commanders, their battle staffs, and supporting intelligence analysts to exploit ISR from current/next generation sensors and data streams including Moving Target Indicator (MTI), Unmanned Aerial Sensors (UASs), and the DCGS joint enterprise. FY10: Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10.				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="padding: 5px;">Threat Order of Battle (OOB)</td> <td style="padding: 5px; text-align: center;">FY08</td> <td style="padding: 5px; text-align: center;">FY09</td> <td style="padding: 5px; text-align: center;">FY10</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px; text-align: center;">1.909</td> <td style="padding: 5px; text-align: center;">1.934</td> <td style="padding: 5px; text-align: center;">0</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table> FY08: Conducted operational testing and began new development to provide intelligence data and tools in a service-oriented architecture including support for maritime interdiction operations FY09: Continue to conduct operational testing and begin new development to provide intelligence data and tools in a service-oriented architecture including support for maritime interdiction operations, Maritime Domain Awareness (MDA), and end to end intelligence analysis tools that leverage Modernized Integrated Database (MIDB), National Geospatial-Intelligence Agency (NGA) related digital mapping and imagery products, and other intelligence support streams, while continuing to ensure joint intelligence interoperability across the Global Command and Control System (GCCS) and Distributed Common Ground Station (DCGS) enterprise. FY10: Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10.					Threat Order of Battle (OOB)	FY08	FY09	FY10		Accomplishments/Effort/Subtotal Cost	1.909	1.934	0		RDT&E Articles Quantity				
Threat Order of Battle (OOB)	FY08	FY09	FY10																
Accomplishments/Effort/Subtotal Cost	1.909	1.934	0																
RDT&E Articles Quantity																			

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTE&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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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	VARIOUS	VARIOUS	20.846	0.858	VARIOUS	0.000						
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			20.846	0.858		0.000						
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	35.421	2.815	VARIOUS	0.000						
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			35.421	2.815		0.000						
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009					
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation	WX	OPTEVFOR	2.056	0.000		0.000						
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			2.056	0.000		0.000						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	2.361	0.130	VARIOUS	0.000						
Travel												
Transportation												
Subtotal Management			2.361	0.130		0.000						
Remarks:												
Total Cost			60.684	3.803		0.000						
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																DATE:																
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																			
RDT&E, N / BA-5					0604231N - Tactical Command System								0521 Shipboard Tactical Intel/GCCS-M Intelligence Applications																			
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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		4.2 MS B					4.2 MS C																									
				4.1 FRP																												
Software Deliveries																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones																																
Deliveries																																

EXHIBIT R-4, Schedule Profile

CLASSIFICATION:

[illegible]

Exhibit R-4a, Schedule Detail

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
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 2008	FY 2009	FY 2010				
Project Cost		13.104	20.726	19.389				
RDT&E Articles Qty								

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

The Global Command and Control System Maritime (GCCS-M) system is the component of GCCS used in the afloat, ashore, and tactical/mobile maritime environments. GCCS-M meets the requirements of the tactical commander for a near real-time, fused common tactical picture with integrated intelligence services and databases. GCCS-M supports the Command, Control, Communication, Computers and Intelligence (C4I) mission requirements of the Chief of Naval Operations (CNO), Fleet Commanders (FLTCDRs), 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 Maritime commanders. It also integrates both joint and service-unique Command and Control systems 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), mission planning and status update tools, and integration of GCCS-M baselines with weapons systems and Combat Direction Systems. These efforts will provide the strike group/force commanders with the information needed to enhance their warfighting capabilities. System scalability is addressed by developing modular capability and application sets that can be deployed based on the mission profile of a particular ship. Continuation of these efforts, especially in the area of undersea superiority, will significantly enhance tactical units' ability to perform precision engagements by consolidating the common operational and undersea tactical pictures into a single comprehensive Command and Control (C2) picture, addressing the requirement of Warfighters and significantly improving interoperability. GCCS-M is also continuing a hardware transition to Common Computing Environments (CCEs) such as Consolidated Afloat Networks and Enterprise Services (CANES) along with a transition of capabilities into a Service Oriented Architecture (SOA). GCCS-M is a key system currently being used to support real world operations afloat, ashore, and with tactical/mobile commanders. Efforts in FY10 will entail preparation for and conduction of Operational Evaluation (OPEVAL), plus software updates to support integration with additional emerging systems such as Net-Enabled Command Capability (NECC).

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Combat Systems Interface</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>0.000</td> <td>0.200</td> <td>0.938</td> <td></td> </tr> <tr> <td>RDTE Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Combat Systems Interface	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.000	0.200	0.938		RDTE Articles Quantity				
Combat Systems Interface	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.000	0.200	0.938																
RDTE Articles Quantity																			
FY 08: Funded with Other Customer Funding (OCF) from Naval Sea System Command (NAVSEA). FY09: Migrate and integrate evolving organic shipboard systems interfaces. GCCS-M RDT&E efforts in FY-09 will focus on ensuring Global COP users have ability to access and share information from organic data sources. FY10: Migrate and integrate shipboard Combat Systems Interfaces from the current point-to-point model (e.g. Tactical Tomahawk Weapons Control System (TTWCS)) to the Consolidated Afloat Network Enterprise System (CANES) Services based approach for each platform class. Investigate and adopt open standards based design and data management methodologies where appropriate. Coordinate with PEO IWS the development of C2/C4I system interfaces and conduct prototype testing. Investigate interfaces to new combat systems such as Ship Self Defense Systems (SSDS) and support developmental testing of these interfaces.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Situational Awareness (formerly JPN)</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>0.000</td> <td>1.678</td> <td>0.000</td> <td></td> </tr> <tr> <td>RDTE Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Situational Awareness (formerly JPN)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.000	1.678	0.000		RDTE Articles Quantity				
Situational Awareness (formerly JPN)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.000	1.678	0.000																
RDTE Articles Quantity																			
FY08: Funded in project 2305. FY09: Situational Awareness, formerly Joint Planning Network (JPN)/Tactical Data Information Links (TADILS)/Broadcasts, provides 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). 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. Leveraged investment in new and upgraded sensors to further develop Situational Awareness and Command and Control throughout the extended Battlespace. Efforts in FY09 also address emergent Fleet requirements, which improve the user's ability to maintain Situational Awareness and reduced system complexity. FY10: N/A																			

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
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

Force Readiness	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.062	1.000	1.000	
RDT&E Articles Quantity				

FY08: Conducted operational testing, and began new development to address emerging Fleet requirements to provide the capability to plan and manage 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.

FY09: Investigate Fleet requirements to provide the capability to plan and manage 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.

FY10: Design and develop an Integrated C2 collaboration methodology based on the Navy Enterprise Data strategy. This will support rapid database/data-source interoperability for seamless data sharing that enables Commanders to expose, manage, and manipulate disparate Force Readiness data. Force Readiness will support operations planning, collaboration, direction and evaluation requirements. Support Navy integration with other Services, Agencies, and traditional and non-traditional partners.

Spectral and Environmental Analysis	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.985	0.482	0.000	
RDT&E Articles Quantity				

FY08: Continued to enhance Emission Control Plan capabilities in order to prevent exploitation of next-generation emitters by emergent/future hostile collection capabilities is successfully integrated and operationally tested for timely Fleet introduction.

FY09: Continue to enhance Emission Control Plan capabilities in order to prevent exploitation of next-generation emitters by emergent/future hostile collection capabilities is successfully integrate and operationally tested for timely Fleet Introduction.

FY10: N/A

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

DATE:

May 2009

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

Warfighter Enhancements	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.868	0.000	0.000	
RDT&E Articles Quantity				

FY08 - Effort provided warfighters with automated tools to inject Automated Identification System (AIS) into GCCS-M, including any software changes required on the DISA-provided baseline software to ensure AIS data is correctly parsed, correlated, and distributed in a net-centric Global COP environment.

FY09-10: N/A

Testing	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.327	3.000	4.211	
RDT&E Articles Quantity				

FY08: Continued to provide for the continued efforts of holistic, end-to-end systems engineering and testing of Maritime C4I capabilities. This included developmental, operational, and interoperability test events for GCCS-M Inc 2 as well as proof-of-concept testing of emergent capabilities and technologies. Testing included an Operational Test of GCCS-M Inc 2 at multiple OT sites to ensure system meets all requirements for Fleet use.

FY09: Continue to provide for the continued efforts of holistic, end-to-end systems engineering and testing of Maritime C4I capabilities. This includes developmental, operational, and interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies. Testing will ensure capabilities transitioned into a Service Oriented Architecture (SOA) environment are effective and suitable for Fleet use.

FY10: Continue to provide holistic, end-to-end systems engineering and testing of Maritime C4I capabilities. This includes two Developmental Tests, Operational Assessment, PEO C4I certification, Navy Interoperability, and Joint Interoperability test events as well as proof-of-concept testing of emergent capabilities and technologies. Testing will ensure capabilities transitioned into a Service Oriented Architecture (SOA) environment are effective and suitable for Fleet use and to satisfy Navy specific pre-production Information Assurance requirements as directed by the Operational Designated Approval Authority (ODAA). This includes preparing System Software Authorization Agreement (SSAA), Security Features Users Guide (SFUG), Certification Test and Evaluation (CT&E), risk mitigation plans and Interim Authority to Operate (IATO).

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications		
(U) B. Accomplishments/Planned Program				
Undersea Superiority/Undersea Forcenet	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	6.862	14.366	11.240	
RDT&E Articles Quantity				
FY08: Effort funded development of Undersea FORCEnet capabilities to support a real-time command and control capability of all USW assets (Maritime Patrol Aircraft (MPA) & Submersible Ship, Nuclear (SSN)). The ASW Commander has a requirement for robust track management capabilities to support contact fusion, correlation and synchronization to improve operators ability to manage contacts on system displays in light of the high density of contacts, latency of reports, lack of filtering and numerous track input option. This effort funded development and integration of USW track correlation and data fusion capabilities into GCCS-M. Efforts will also identified and implemented Human Systems Integration (HSI) and display management improvements within the system. This effort also supported development of low confidence level track types to allow ASW community to share information on possible enemy submarine before elevating to a track in the Common Operational Picture. This effort also supported continued transition of ASW demonstrated capabilities into GCCS-M Program of Record. FY09: Continue the development of effort to fund development of Undersea FORCEnet capabilities to support a real-time command and control capability of all USW assets (Maritime Patrol Aircraft (MPA) & Submersible Ship, Nuclear (SSN)). The ASW (Anti Submarine Warfare) Commander has a requirement for robust track management capabilities to support contact fusion, correlation and synchronization to improve operators ability to manage contacts on system displays in light of the high density of contacts, latency of reports, lack of filtering and numerous track input option. This effort will fund development and integration of USW track correlation and data fusion capabilities into GCCS-M. Efforts will also identify and implement Human Systems Integration (HSI) and display management improvements within the system. This effort will also support development of low confidence level track types to allow ASW community to share information on possible enemy submarine before elevating to a track in the Common Operational Picture. This effort also supports continued transition of ASW demonstrated capabilities into GCCS-M Program of Record. FY10: Finalize and complete Composeable FORCEnet (Cfn) migration to the Consolidated Afloat Network Enterprise System (CANES). Complete the integration of FY08 and FY09 capabilities into the Increment 2 baseline. Minimally, these capabilities will be integrated into the Force Level and Ashore baseline implementations but will be extended to the Group and Unit baselines as dictated by operational requirements.				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 0709 GCCS-M Maritime Applications		
(U) B. Accomplishments/Planned Program				
GCCS-M Increment 2 Integration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.000	
RDT&E Articles Quantity				
FY08-09: Previously funded by Situational Awareness. FY10: Scale integrated, tested, certified, accredited GCCS-J to Navy platform requirements. Incorporate maritime-unique C2 capabilities into GCCS-J and remove capabilities not required by naval forces for operation within the limited footprint available on Naval vessels. Modify GCCS-J installation media and documentation for operation by fleet users.				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			May 2009
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:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
GCCS-M Totals (OPN - BLI 2608)	56.196	23.373	10.952

Note: BLI 2608 controls do not include TIS and GCCS- Joint Funding from FY08-FY10.

(U) D. ACQUISITION STRATEGY:

N/A

(U) F. METRICS:

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

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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	VARIOUS	VARIOUS	21.974	7.446	VARIOUS	6.553	VARIOUS					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			21.974	7.446		6.553						
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	67.590	9.191	VARIOUS	6.648	VARIOUS					
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			67.590	9.191		6.648						
Remarks:												

Exhibit R-3, RDTEN Project Cost Analysis

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009					
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	0.000	0.500		0.500						
Operational Test & Evaluation	VARIOUS	VARIOUS	3.030			1.000						
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			3.030	0.500		1.500						
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS	1.029	0.947	VARIOUS	1.947	VARIOUS					
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	13.598	2.642	VARIOUS	2.742	VARIOUS					
Travel												
Transportation												
Subtotal Management			14.627	3.589		4.689						
Remarks:												
Total Cost			107.221	20.726		19.389					Continuing	Continuing
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: May 2009															
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															
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015						
	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		Inc 2 Gate 6 ▲								Inc 2 MS C ▲																									
Software Deliveries																																			
Increment 1	▲	▲	▲	▲																															
Increment 2			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲																							
Test & Evaluation Milestones																																			
Development Test								Inc 2 DT		▲	Inc 2 DT																								
Operational Test										▲	Inc 2 OT					▲																			
Production Milestones																																			
Deliveries																																			

EXHIBIT R-4, Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE:		
						May 2009		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N /BA-5	0604231N - Tactical Command System				0709 GCCS-M Maritime Applications			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Software Delivery (quarterly)								
Increment 1	Q1-Q4							
Increment 2	Q3-Q4	Q1-Q4	Q1-Q4					
Increment 2 Gate 6	Q2							
Inc 2 DT		Q4	Q1					
Inc 2 MSB								
Inc 2 MS C			Q3					
Inc 2 OT			Q4					
Inc 2.1 MSB								
Inc 2 FRP								
Inc 2.1 MS C								
Inc 2.1 DT								
Inc 2.1 OT								
Inc 2.1 FRP								
Inc 2.2 DT								
Inc 2.2 MSB								
Inc 2.2 MS C								
Inc 2.2 OT								
Inc 2.3 MSB								
Inc 2.2 FRP								
Inc 2.3 MS C								
Inc 2.3 DT								
Inc 2.3 OT								
Inc 2.3 FRP								

Exhibit R-4a, Schedule Detail

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding (\$000)						DATE: May 2009		
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 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
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.								

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding

R-1 Line Item No. 87

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
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 2008	FY 2009	FY 2010					
Project Cost	0.510	1.084	1.311					
RDT&E Articles Qty								

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

Radiant Mercury (RM): Trusted Information System(TIS) Radiant Mercury (RM) is a Multi-Level Security (MLS) system that successfully provides accredited Cross Domain Solutions (CDS) to the Navy, DoD, and intelligence Community. TIS RM is a critical component of network-centric warfare, supporting joint operations and coalition forces. 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 Cross Domain Solution (CDS) systems such as Radiant Mercury. Joint Cross Domain & eXchange (JCDX) has been disinvested.

TIS RM provides automated, bi-directional sanitization, transliteration and guarding capability for formatted and unformatted data between security enclaves. Radiant Mercury helps ensure critical intelligence is provided quickly to operational decision-makers. Trusted Information Systems Radiant Mercury provides the capability to disseminate information for operating forces worldwide, including the operating forces of key allies. 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 Combatant Commanders, Air Force (Shared Early Warning program), Army (Blue Force Tracking program), Navy (Global Command and Control System - Maritime (GCCS-M) and Automatic Identification System (AIS)) and numerous other DoD and Intelligence agencies.

TIS RM provides a mechanism for adding future capabilities and functionality improvement required for the success of Consolidated Afloat Network and Enterprise Services (CANES), Net-Centric Enterprise Services (NCES), Multi-National Information Sharing (MNIS), and Global Information Grid (GIG). These transformational capabilities and functionalities include, but not limited to, web services, eXtensible Markup Language (XML) functionality, Services Oriented Architecture (SOA) environment, operating systems (OS) migration, remote monitoring and maintenance capability in support of Consolidated Afloat Network and Enterprise Services (CANES), Net-Centric Enterprise Services (NCES), Multi-National Information Sharing (MNIS), and Global Information Grid (GIG) architectures.

FY10: Identify and define emerging requirements for RM version 5.X to meet Consolidated Afloat Network and Enterprise Services (CANES) and other Navy and non-Navy CDS requirements. Begin developing capabilities needed in RM version 5.x.

Exhibit R-2a, RDTEN Project Justification Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
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	

(U) B. Accomplishments/Planned Program

Radiant Mercury	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.510	1.084	1.311	
RDT&E Articles Quantity				

FY08: Continued the development, integration and testing of emerging unformatted file types. Commenced investigating technologies related to collaboration (chat, whiteboarding, language translations, etc.). Developed criteria and procedures for system verification and validation in anticipation of updated information assurance and cross-domain policies. Released version 4.5.2 for Secret and Below Interoperability (SABI) customers. Version 4.5 for Top Secret and Below Interoperability (TSABI) customers was released Q2 FY07. Commenced investigating technologies related to collaboration (chat, whiteboarding, language translations, etc.).

FY09: Release version 5.0 on follow-on trusted operating system. Investigate and develop support for emerging communication mechanisms. Continue the development, integration and testing of emerging unformatted file types. Continue to investigate technologies related to collaboration. Continue investigating technologies related to collaboration (chat, whiteboarding, language translations, etc.). Develop criteria and procedures for system verification and validation in anticipation of updated information assurance and cross-domain policies. Conduct version 5.0. Certification, Test and Evaluation (CT&E) . Conduct version 5.0 System Test and Evaluation (ST&E) with Joint Interoperability Test Command (JITC) assessment.

FY10: Investigate a follow-on update to version 5.0 to address emerging Cross Domain Solution requirements. Investigate and develop support for emerging communication mechanisms. Continue the development, integration and testing of emerging unformatted file types. Continue to investigate technologies related to collaboration. Identify new requirements capabilities needed by the Navy programs and non-Navy customers post Radiant Mercury Version 5.0

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:									
			May 2009									
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: <table> <thead> <tr> <th><u>Line Item No. & Name</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>GCCS-M (TIS) (OPN - BLI 2608)</td> <td>0.000</td> <td>0.479</td> <td>0.626</td> </tr> </tbody> </table> (U) D. ACQUISITION STRATEGY: N/A					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	GCCS-M (TIS) (OPN - BLI 2608)	0.000	0.479	0.626
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
GCCS-M (TIS) (OPN - BLI 2608)	0.000	0.479	0.626									

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604231N - TACTICAL COMMAND SYSTEM			2009 TRUSTED INFORMATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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	VARIOUS	VARIOUS	11.357	0.736	VARIOUS	0.892	VARIOUS					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			11.357	0.736		0.892						
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	53.371	0.316	VARIOUS	0.381	VARIOUS					
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			53.371	0.316		0.381						
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009			
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation													
Operational Test & Evaluation	WX	OPTEVFOR	0.680	0.000		0.000							
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Subtotal T&E			0.680	0.000		0.000							
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support	VARIOUS	VARIOUS	2.360	0.032	VARIOUS	0.038	VARIOUS						
Travel			0.010										
Transportation													
Subtotal Management			2.370	0.032		0.038							
Remarks:													
Total Cost			67.778	1.084		1.311							
Remarks:													

Exhibit R-3, Project Cost Analysis

Exhibit R-4a, Schedule Detail

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
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 2008	FY 2009	FY 2010					
Project Cost	4.039	0.000	0.000					
RDT&E Articles Qty								

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

The Global Command and Control System Maritime (GCCS-M) Common Applications program contains the fundamental building blocks and common applications for all fielded GCCS-M 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.

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. 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 Common Operating Environment (COE) continues to grow, resources for rapidly folding them into the service extensions must keep pace with the growing complexity and size of the COE. As a product of evolutionary acquisition, the Navy COE will continue to evolve with the COE, new technology, and Commercial-off-the-shelf (COTS) products. Efforts in FY08 will entail preparation for Operational Evaluation (OPEVAL), and software development to address emerging Fleet requirements in areas such as Maritime Interdiction Operations (MIO). Beginning in FY09, funding will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications		
(U) B. Accomplishments/Planned Program				
Documentation Training	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.737	0.000	0.000	
RDT&E Articles Quantity				
FY08: Ensured the integration and operational testing of web-enabled, task-oriented documentation and help capability emphasizing execution of missions. FY09-10: Funding will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.				
Testing/Usability	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.237	0.000	0.000	
RDT&E Articles Quantity				
FY08: Continued to provide for the continued efforts of holistic, end-to-end systems engineering and testing of Maritime C4I capabilities. This included developmental, operational, and interoperability test events for GCCS-M 4.1 as well as proof-of-concept testing of emergent capabilities and technologies. FY09-10: Funding in FY09-10 will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command System	PROJECT NUMBER AND NAME 2305 GCCS-M Common Applications		
(U) B. Accomplishments/Planned Program				
Combat Systems Interface	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.637	0.000	0.000	
RDT&E Articles Quantity				
FY08: Ensured integration and certification of required organic shipboard systems interfaces. FY09-10: Funding in FY09-10 will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.				
Situational Awareness (formerly JPN)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.298	0.000	0.000	
RDT&E Articles Quantity				
FY08: Provided bi-directional shared situational awareness by integrating and exchanging information with disparate systems, sensors and real time event reporting networks (e.g. AIS weapons/fire control, navigation, cryptologic, tactical data links and broadcasts). This was 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. Leveraged investment in new and upgraded sensors to further develop Situational Awareness and Command and Control throughout the extended Battlespace. FY09-10: Funding in FY09-10 will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.				
Emergent Capabilities	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.130	0.000	0.000	
RDT&E Articles Quantity				
FY08: Continued to ensure emergent and transformational command and control capabilities are successfully integrated and developmentally tested for timely introduction to the Fleet. FY09-10: Funding will be consolidated into GCCS-M Maritime Applications (x0709), to aid in the migration towards Maritime specific Command and Control (C2) capabilities that reside within the Service Oriented Architecture (SOA) environment.				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY RDTE, 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: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010</th> </tr> </thead> <tbody> <tr> <td style="padding-top: 10px;">GCCS-M Totals (OPN - BLI 2608)</td> <td style="text-align: right; padding-top: 10px;">56.196</td> <td style="text-align: right; padding-top: 10px;">23.373</td> <td style="text-align: right; padding-top: 10px;">10.952</td> </tr> </tbody> </table> Note: BLI 2608 controls do not include TIS and GCCS-Joint funding from FY08-FY10. (U) D. ACQUISITION STRATEGY: N/A (U) F. METRICS: Earned Value Management is used for metrics reporting and risk management.				Line Item No. & Name	FY 2008	FY 2009	FY 2010	GCCS-M Totals (OPN - BLI 2608)	56.196	23.373	10.952
Line Item No. & Name	FY 2008	FY 2009	FY 2010								
GCCS-M Totals (OPN - BLI 2608)	56.196	23.373	10.952								

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604231N - Tactical Command System			2305 GCCS-M Common Applications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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	VARIOUS	VARIOUS	13.792									
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			13.792									
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	70.836									
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			70.836									
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	8.711									
Operational Test & Evaluation	VARIOUS	VARIOUS	1.686									
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			10.397									
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	5.531									
Travel												
Transportation												
Subtotal Management			5.531									
Remarks:												
Total Cost			100.556									
Remarks:												

EXHIBIT R-4, Schedule Profile

R-1 Line Item No. 87
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CLASSIFICATION:

[illegible]

Exhibit R-4a, Schedule Detail

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding (\$000)						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&E, N / BA-5 BA-5		0604231N - Tactical Command System				2305 GCCS-M Common Applications		
Program Title	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
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.

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding

R-1 Line Item No. 87

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009			
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			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	12.271	11.284	1.768				
RDT&E Articles Qty							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard LAN / WAN / Integrated Shipboard Network System (ISNS) provides Navy ships, including submarines, and Ashore sites with reliable, high-speed SECRET and UNCLASSIFIED Local Area Networks (LAN)s and wireless network technologies. The LAN provides Basic Network Information Distribution Services (BNIDS) and access to the Defense Information Systems Network (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. Program funding supports the design, development and testing of the ISNS LAN for surface ships, shore sites, and SubLAN for submarines. The ISNS program maximizes the use of both Commercial off the Shelf (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 uses a combination of high speed wired and wireless switches, routers, access points, 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 systems of application configurations including the following: Global Command and Control System Maritime (GCCS-M), Navy Tactical Command Support System (NTCSS), Navy Standard Integrated Personnel System (NSIPS), Theatre Medical Information Program – Maritime (TMIP-M), Defense Messaging System (DMS), Automated Digital Network System (ADNS), Global Broadcasting System (GBS), Tactical Tomahawk Weapons Control System (TTWCS) and Information Security (INFOSEC) programs. The ISNS program provides the infrastructure to support implementation/fielding of these programs. 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. ISNS includes Service Oriented Architecture (SOA) which is the mechanism to deliver the FORCEnet interface to the warfighter. SOA provides a composable warfighting environment enabling dynamic configuration of capabilities tailored to meet specific warfighting missions. As the warfighting mission changes, the capabilities or services can be re-configured on the fly to meet the new warfighting requirement. This dynamic reconfiguration of services also known as "plug and fight" meets the composable services vision of FORCEnet. SOA also provides the common core enterprise services and technical framework to allow organizations ubiquitous access to reliable, decision-quality information through a net-based services infrastructure and applications to bridge real-time and near-real-time communities of interest (COI). SOA will empower the end user to pull information from any available source, with minimal latency, to support the mission. Its capabilities will allow Department of the Navy as well as Global Information Grid (GIG) users to task, post, process, use, store, manage and protect information resources on demand for warfighters, policy makers and support personnel. SOA will utilize a spiral process for delivering capability to the warfighter. The ISNS Inc 1, Sensitive Compartmented Information (SCI) Networks and Combined Enterprise Regional Information Exchange System (CENTRIXS) programs began migration to ISNS Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video and Data; Common Computing Environment (CCE); Service Oriented Architecture (SOA); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). Full transition to CANES Inc 1 occurs in FY 2010.							

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
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
The Combined Enterprise Regional Information Exchange System (CENTRIXS) program provides US Navy ships and submarines with secure, reliable, high-speed Local Area Network (LAN) with access to the Coalition Wide Area Network (WAN) to include CENTRIXS Four-Eyes (CFE), Global Counter Terrorism Task Force (GCTF), NATO Information Data Transfer System (NIDTS), Multinational Coalition Force - Iraq (MCFI), bilateral networks such as CENTRIXS-U.S. Japan (J) and CENTRIXS-U.S. Korea (K), and Communities Of Interest (COI) virtual networks such as Coalition Naval Forces - CENTCOM (CNFC), and Cooperative Maritime Forces - Pacific (CMFP). The CENTRIXS system provides real-time tactical and operational information sharing at the SECRET and SECRET REL (Releasable) level between naval afloat units, Component Commanders, Fleet Commanders, Numbered Fleet Commanders and Coalition Forces/Allies. When the CENTRIXS network is combined with other subsystems (Radio/Satellite Comms), it delivers an end-to-end network centric warfighting capability. CENTRIXS is the primary means for sharing classified, but releasable, data with coalition partners to enable the Navy to mean the National Strategy for Maritime Domain Awareness. The CENTRIXS program is comprised of Block 0, I, and II systems fielded across the Fleet, and Increment 1 which provides a network infrastructure that allows simultaneous access to multiple Coalition Wide Area Networks (WAN) and incorporates the Common PC Operating System Environment (COMPOSE) which provides a server and client operating system environment for other applications and collaborative tools such as Same time Chat, Domino and Command and Control PC (C2PC) as means to share a Common Operational Picture (COP) and exchange information using Collaboration At Sea (CAS). The CENTRIXS program uses both Commercial Off The Shelf (COTS) hardware and software and Open Standards to maximize commercial technology and support. Engineering and technical support ensures existing systems are upgraded and modified to keep pace with current technology and industry. Funding supports the design, development and testing of the CENTRIXS LAN for surface and submarine platforms and the CENTRIXS Network Operations Center (NOC). The goal of the CENTRIXS program is to provide a cost-efficient, operationally effective network that dramatically reduces current infrastructure requirements while maximizing operational flexibility and warfighter utility in a coalition environment. Multi-Level Thin Client (MLTC) architecture supports shipboard Space, Weight and Power (SWAP) reductions and includes initiatives for server virtualization (ability to run multiple servers on a single server), drop scalability leveraging existing SIPRNET drops, remote authentication and remote system management. Additionally, funding will provide design, development and testing for a Unit Level MLTC system (provides a compressed shipboard rack/client footprint) and initiatives to include Language Translation, COI and Network Enclave Agility (ability to dynamically shift between all coalition networks and COIs) and Multi-Level Chat (a Cross Domain Solution (CDS) chat capability). The (CENTRIXS) program began migration to ISNS Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video and Data; Common Computing Environment (CCE); Service Oriented Architecture (SOA); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). 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 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.		

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE&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

(U) B. Accomplishments/Planned Program

ISNS	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	8.166	7.308	0.855
RDTE&E Articles Quantity			

FY08: Completed development of COMPOSE 3.5. Continued to develop and integrate ISNS Increment 2/CANES capabilities. Investigated software management including distribution, license management, and inventory management. Performed network consolidation and network capacity studies. Developed and integrated Expanded Maritime Intercept Operation (EMIO) and increased security. Continued development of the Cost Analysis Requirements Document (CARD). Continued development of the Life Cycle Cost Estimate (LCCE). Began development of the Clinger Cohen Act (CCA) and Acquisition Strategy documentation for ISNS Incr 2/CANES.

Performed developmental testing and at sea demonstrations on the following ISNS Increment 2 technologies:

1. Identity Management/Service Security, including Authentication, Authorization, and Auditing.
2. Collaboration, including Text Collaboration.
3. Messaging, including Java Messaging Service
4. Service Oriented Architecture (SOA)
5. Multi-Level Security (MLS) / Cross Domain Solutions (CDS)

FY09: Continue to develop ISNS Increment 2/CANES capabilities which will begin to consolidate the afloat networks and enterprise services aboard ships. These capabilities include increased availability to mission critical level ships, multiple security enclaves, application hosting, and collaboration services. Support studies for an Ashore ISNS variant in support of the Maritime Operations Center (MOC) requirement.

Continue with at sea demonstrations for the following technologies:

1. Identity Management/Service Security, including Entity Management & Credential Management.
2. Collaboration, including Session Management and Presence & Awareness.
3. Discovery, including Content/Device/People Discovery.
4. Cross Domain Solutions (CDS)
5. Afloat Core Services (ACS)

Complete acquisition documentation required for ISNS Inc 1 and 2/CANES. Award the prototype development contract for ISNS Incr 1. Set up lab for applicable Early Adopter testing. Perform Developmental and Operational Testing (DT/OT) on Increment 1 Wireless (MOD2), COMPOSE 3.5 (MOD3), Common Computing Environment (CCE) (MOD4), and Afloat Core Services (ACS) 1.0 as needed.

FY10: Complete development of the ISNS Increment 1and 2/CANES capabilities consolidating Afloat LANs and Enterprise Services aboard ships and Ashore sites. These capabilities include increased availability to mission critical level systems, multiple security enclaves, and application hosting, ACS, and collaboration services. Develop replacement solutions for End of Life (EOL) equipment as EOL occurs.

Continue support of sea demonstrations for the following technologies:

1. Identity Management/Service Security, including Entity Management & Credential Management.
2. Collaboration, including Session Management and Presence & Awareness.
3. Discovery, including Content/Device/People Discovery.
4. Cross Domain Solutions (CDS)
5. Secure classified wireless
6. ACS

Continue working with ISNS labs on Early Adopter and ACS testing and integration. Investigate new technology associated with classified wireless LANs. Support Trident warrior exercises. Support Compose 4.0 DT & OT events. Program transitions from ISNS Inc 2/CANES to CANES Inc 1. Continue support for wireless initiatives towards a more interoperable and secure wireless network infrastructure. Support Certification and Accreditation activities for efforts under development.

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009													
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													
(U) B. Accomplishments/Planned Program															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">SubLAN</td> <td style="width: 12.5%;">FY08</td> <td style="width: 12.5%;">FY09</td> <td style="width: 12.5%;">FY10</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>2.105</td> <td>1.252</td> <td>0.615</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table> FY08 - Investigated, developed, and tested cross domain solution architecture enabling capability for other submarine programs such as Sensitive Compartmented Information (SCI), Joint Worldwide Intelligence Communications System (JWICS), and Combined Enterprise Regional Information Exchange System (CENTRIXS). Investigated, developed, tested server architecture in support of Commercial off the Shelf (COTS) End-of-Life (EOL) and enablement of Consolidated Afloat Networks and Enterprise Services (CANES) functionality. FY09 - Test and integrate follow-on COMPOSE software package in support of Consolidated Afloat Networks and Enterprise Services (CANES) migration strategy. Perform Operational Test Readiness Review (OTRR) and Follow-On Operational Test & Evaluation (FOT&E) of Inc 1. Demonstration of Cross Domain Solution architecture with compose software packages enabling capability for SCI, JWICS, and CENTRIXS in support of CANES migration strategy rescheduled for Trident Warrior (TW). FY10 - Perform OTRR and Operational Test & Evaluation of Cross Domain Solution.				SubLAN	FY08	FY09	FY10	Accomplishments/Effort/Subtotal Cost	2.105	1.252	0.615	RDT&E Articles Quantity			
SubLAN	FY08	FY09	FY10												
Accomplishments/Effort/Subtotal Cost	2.105	1.252	0.615												
RDT&E Articles Quantity															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">CENTRIXS</td> <td style="width: 12.5%;">FY08</td> <td style="width: 12.5%;">FY09</td> <td style="width: 12.5%;">FY10</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>2.000</td> <td>2.724</td> <td>0.298</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table> FY08 - Continued to design the INC 1 Unit Level (UL) and evaluate dynamic COI capability, patch management capability, and client-loadable software capability in coordination with the CDS. Performed Environmental Testing for FL Blk 2 w/ Engineering Change Order (ECO). FY09 - Obtain MS C Decision and Low Rate Initial Production (LRIP) for Inc 1. MS C for INC 1 slip to 3QFY09 due to approval delays of the Capabilities Production Document (CPD). Utilize existing Q-70 contract for LRIP. Perform Operational Assessment (OA) on Force Level (FL) Block II. Begin migration to ISNS Inc 2/CANES. Develop CENTRIXS capability on submarines. FY10 - Perform environmental testing for UL Inc 1. Conduct a combined Development Test / Operational Test (DT/OT) for Inc 1 with COMPOSE 3.0. Support Inc I unit level DT/OT transition to Canes Inc I. Program transitions from ISNS Inc 2/CANES to CANES Inc 1.				CENTRIXS	FY08	FY09	FY10	Accomplishments/Effort/Subtotal Cost	2.000	2.724	0.298	RDT&E Articles Quantity			
CENTRIXS	FY08	FY09	FY10												
Accomplishments/Effort/Subtotal Cost	2.000	2.724	0.298												
RDT&E Articles Quantity															

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																																					
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																																					
(U) C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;"><u>Line Item No. & Name</u></th> <th style="text-align: right; width: 15%;"><u>FY 2008</u></th> <th style="text-align: right; width: 15%;"><u>FY 2009</u></th> <th style="text-align: right; width: 15%;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>OPN 3050</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">ISNS</td> <td style="text-align: right;">151.971</td> <td style="text-align: right;">135.745</td> <td style="text-align: right;">158.124</td> </tr> <tr> <td style="padding-left: 20px;">CENTRIXS</td> <td style="text-align: right;">18.261</td> <td style="text-align: right;">29.399</td> <td style="text-align: right;">14.757</td> </tr> <tr> <td style="padding-left: 20px;">SubLAN</td> <td style="text-align: right;">20.611</td> <td style="text-align: right;">32.861</td> <td style="text-align: right;">30.006</td> </tr> <tr> <td style="padding-left: 20px;">Total:</td> <td style="text-align: right; border-top: 1px solid black;">190.843</td> <td style="text-align: right; border-top: 1px solid black;">198.005</td> <td style="text-align: right; border-top: 1px solid black;">202.887</td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;"><u>Line Item No. & Name</u></th> <th style="text-align: right; width: 15%;"><u>FY 2008</u></th> <th style="text-align: right; width: 15%;"><u>FY 2009</u></th> <th style="text-align: right; width: 15%;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>OPN 3051</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">CENTRIXS-M MDA</td> <td></td> <td></td> <td style="text-align: right;">4.913</td> </tr> </tbody> </table> (U) D. ACQUISITION STRATEGY: Procurement and integration efforts for ISNS, CENTRIXS, and SubLAN are accomplished through various contracts. Procurement and integration efforts for CANES will be accomplished through various contracts. (U) F. METRICS:				<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	OPN 3050				ISNS	151.971	135.745	158.124	CENTRIXS	18.261	29.399	14.757	SubLAN	20.611	32.861	30.006	Total:	190.843	198.005	202.887	<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	OPN 3051				CENTRIXS-M MDA			4.913
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OPN 3051																																							
CENTRIXS-M MDA			4.913																																				

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

Exhibit R-3, RDT&E Cost Analysis (page 1)								DATE: May 2009				
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						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	Titan	0.336	0.858	VARIOUS	0.000						
Integration & Test	WX	SSC SD	0.964	0.985	12/08	0.075	12/09					
Systems Engineering	VARIOUS	VARIOUS	3.459	0.684	VARIOUS	0.000						
Systems Engineering	WX	SSC SD	1.364	0.892	12/08	0.344	12/09					
Systems Engineering	CPAF	SAIC	0.334	0.049	12/08	0.000						
Systems Engineering	WX	SSC CH	1.618	1.012	01/09	0.201	01/10					
Systems Engineering	CPIF	TBD				0.000						
Subtotal Product Development			8.075	4.480		0.620						
Remarks:												
Software Development	TBD	TBD	0.400	0.325	TBD	0.173	12/09					
Software Development	CPAF	Titan	0.043	0.026	01/09	0.000						
Subtotal Support			0.443	0.351		0.173						
Remarks:												

Exhibit R-3, RDT&E Cost Analysis

CLASSIFICATION:

Exhibit R-3, RDT&E Cost Analysis (page 2)										DATE: May 2009		
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					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC	5.994	1.610	12/08	0.240	12/09					
Developmental Test & Evaluation	WX	NIOC	0.035	0.018	01/09	0.000						
Developmental Test & Evaluation	MP	JITC	0.143	0.166	12/08	0.000						
Developmental Test & Evaluation	VARIOUS	NSMA	0.389	0.418	VARIOUS	0.125	VARIOUS					
Developmental Test & Evaluation	CPAF	NAVSEA/LM	0.350	0.000		0.000						
Developmental Test & Evaluation	VARIOUS	VARIOUS	0.357	0.226	VARIOUS	0.113	VARIOUS					
Operational Test & Evaluation	WX	COMOPTEVFOR	0.802	0.360	12/08	0.075	12/09					
Operational Test & Evaluation	WX	SSC	0.612	0.569	TBD	0.000						
Subtotal T&E			8.682	3.367		0.553						
Remarks:												
Program Management Support	WX	SSC SD	1.446	0.193	12/08	0.252	12/09					
Program Management Support	VARIOUS	VARIOUS	1.607	2.394	VARIOUS	0.170	12/09					
Program Management Support	CPAF	Booz Allen Hamilton	1.432	0.499	01/09	0.000						
Subtotal Management			4.485	3.086		0.422						
Remarks:												
Total Cost			21.685	11.284		1.768						
Remarks:												

Exhibit R-3, RDT&E Cost Analysis

CLASSIFICATION:

EXHIBIT R4, RDT&E Schedule Profile																DATE: May 2009															
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															
Fiscal Year	2008				2009				2010																						
Quarter	1	2	3	4	1	2	3	4	1	2	3	4																			
Acquisition Milestones FD D(V) X (Note 3) Inc 1 Wireless ISNS Inc2/CANES MDD ISNS Inc 2/CANES to CANES Inc 1 (Note 4)		FD C(V)X △				FD D(V)X △	Inc 1 Wireless △																								
Prototype Phase Demonstrations (Trident Warrior)			TW △				TW △																								
Software Deliveries (Note 2)		COMPOSE 3.0.1 △			COMPOSE 3.5 △	ACS 1.0 △			COMPOSE 4.0 △																						
Test & Evaluation Milestones Development Test Operational Test																															
Production Milestones LRIP FRP																															
Deliveries																															

NOTES:

- Events added for follow on increments reflecting migration to ISNS Inc 2/CANES.
- Software release versions and delivery dates updated to reflect current software fielding schedule.
- Acquisition Milestone - FD D(V)X added on 2nd quarter of FY09
- FY10 Program transitions from ISNS Inc 2/CANES to CANES Inc 1.
- Material Development Decision (MDD) per DoD 5000.2.

EXHIBIT R4, RDT&E Schedule Profile

CLASSIFICATION:

Exhibit R-4a, RDT&E Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
	0604231N - Tactical Command System			2307 - Shipboard LAN / WAN / Integrated Shipboard Network System				
Schedule Profile	FY 2008	FY 2009	FY 2010					
Acquisition Milestone - FD C(V)X	2Q							
Acquisition Milestone - FD D(V)X (Note 3)		2Q						
Acquisition Milestone - Inc 1 Wireless		3Q						
Acquisition Milestone - MDD ISNS Inc 2/CANES (Note 5)		1Q						
Acquisition Milestone - ISNS Inc 2/CANES to CANES Inc 1(Note 4)			1Q					
Prototype Phase - TW Demonstration	3Q							
Prototype Phase - TW Demonstration		3Q						
Prototype Phase - TW Demonstration			3Q					
Prototype Phase - TW Demonstration								
Prototype Phase - TW Demonstration								
Prototype Phase - TW Demonstration								
Software Delivery - 3.0.1	2Q							
Software Delivery - 3.5		1Q						
Software Delivery - CS 1.0		4Q						
Software Delivery - 4.0			1Q					
(Note 2)								
Development Test - Inc 1 Wireless/3.5		2Q						
Development Test - ACS 1.0		3Q						
Development Test - 4.0			1Q					
Operational Test - Inc 1 Wireless/3.5		2Q						
Operational Test - ACS 1.0		2Q						
Operational Test - 4.0			1Q					
Production Milestone - Inc 1 Wireless/3.5 FRP		3Q						

Exhibit R-4a, RDT&E Schedule Detail

NOTES:

1. Events added for follow on increments reflecting migration to ISNS Inc 2/CANES.
2. Software release versions and delivery dates updated to reflect current software fielding schedule.
3. Acquisition Milestone - FD D(V)X added on 2nd quarter of FY09.
4. FY10 Program transitions from ISNS Inc 2/CANES to CANES Inc 1.
5. Material Development Decision (MDD) per DoD 5000.2.

CLASSIFICATION:

EXHIBIT R4, RDT&E Schedule Profile																	DATE:		May 2009									
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 (CENTRIXS)													
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones CENTRIXS MSC and FRP (Inc 1) (Note 1) ISNS Inc2/CANES MDD (Notes 4, 5) CANES Transition																												
Prototype Phase																												
System Development																												
Software Delivery																												
Test & Evaluation Milestones (Notes 2,3)																												
Block II w/ ECO (Inc 1 FL) Development Test																												
Operational Test																												
Inc 1 Unit Level Development Test																												
Operational Test																												
Production Milestones																												
Inc 1																												
Deliveries																												

EXHIBIT R4, RDT&E Schedule Profile

NOTES:

1. CENTRIXS MS C and FRP (Inc 1) slip due to Capabilities Production Document (CPD) approval delays.
2. DT/OT slip due to the MS C slip, addition of EQT, and delays in the accreditation process. IOC and FRP shifted as a result.
3. Block II with the Engineering Change Order (ECO) is equivalent to the Increment 1 Force Level (FL).
4. FY10 Program transitions from ISNS Inc2/CANES to CANES Inc1.
5. Material Development Decision (MDD) per DoD 5000.2.

CLASSIFICATION:

Exhibit R-4a, RDT&E Schedule Detail						DATE:		
						May 2009		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDT&E, BA-5	0604231N Tactical Command System			2307 - Shipboard LAN / WAN / Integrated Shipboard Network System (CENTRIXS)				
Schedule Profile	FY 2008	FY 2009	FY 2010					
Acquisition Milestone - CENTRIXS Inc 1 MS C (Note 1)		4Q						
Acquisition Milestone - ISNS Inc 2/ CANES MDD (Note 5)		1Q						
Acquisition Milestone - ISNS Inc2/CANES to CANES Inc1 (Note 4)			1Q					
System Development - Inc 1	1Q-4Q	1Q-2Q						
Software Delivery - COMPOSE 3.0		2Q						
Software Delivery - COMPOSE 4.0								
Operational Test - Blk II EQT (Note 2,3)		1Q						
Operational Test - Blk II OA		2Q						
Operational/Developmental Test - Inc 1 FL			4Q					
Operational Test - Inc 1 UL EQT			3Q					
Production Milestone - Inc 1 LRIP		3Q-4Q						
Production Milestone - Inc 1 FL IOC			1Q					
Production Milestone - Inc 1 FL FRP			2Q					
Production Milestone - Inc 1 UL IOC			4Q					
Production Milestone - Inc 1 UL FRP								
Deliveries - Block II	3Q							
Deliveries - Inc 1 LRIP			1Q					
Deliveries - Inc 1 FL FRP			2Q					
Deliveries - Inc 1 UL FRP								

Exhibit R-4a, RDT&E Schedule Detail

NOTES:

1. CENTRIXS MS C and FRP (Inc 1) slip due to Capabilities Production Document (CPD) approval delays.
2. DT/OT slip due to the MS C slip, addition of EQT, and delays in the accreditation process. IOC and FRP shifted as a result.
3. Block II with Engineering Change Order (ECO) is equivalent to the Increment 1 Force Level (FL).
4. FY10 Program transitions from ISNS Inc2/CANES to CANES Inc1.
5. Material Development Decision (MDD) per DoD 5000.2.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile														DATE: May 2009																		
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 (SubLAN)																			
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones				CDR △																												
SubLAN Incr 1 (Note 1)																																
System Development (e.g., Radar System dev.)																																
Software Deliveries COMPOSE				3.0.1 △																												
Test & Evaluation Milestones																																
Development Test																																
Operational Test				OTRR △																												
Production Milestones																																
Deliveries																																

EXHIBIT R4, Schedule Profile

NOTES:

(1) Rebaseline to single increment shifts FOC to FY17.

Exhibit R-4a, RDT&E Schedule Detail

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System			PROJECT NUMBER AND NAME 2351 - Maritime Domain Awareness (MDA)			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		0.000	0.000	21.199				
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Maritime Domain Awareness (MDA): Maritime Domain Awareness is the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy or environment. MDA objectives include the persistent monitoring of and ability to access and maintain data on vessels, cargo, people, and infrastructure; and the ability to collect, fuse, analyze, and disseminate information to decision makers to facilitate effective understanding. This initiative will identify, develop and transition data fusion and mining, replication, sharing and assessment tools to achieve MDA across the non-classified, unclassified and classified enclaves. This warfighting enhancement is designed to achieve an all-source MDA capability, leveraging existing MDA initiatives in the developmental phase and ensuring the best products transition to strategic, operational and tactical users as well as further development of MDA prototypes. The products will support all-source data fusion, replication of MDA related data gathered in various operations such as expanded-maritime interdiction operations (E-MIO), sharing information with allies, and developing subject matter expertise and assessment tools to achieve MDA and enhance operational decision making. This MDA focused Deep Lightning Bolt (DLB) warfighting enhancements are designed to achieve an all-source distributed MDA capability, leveraging existing MDA Navy and Non-Navy initiatives in the developmental phase and ensuring the best products transition to strategic, operational and tactical users as well as further development of MDA prototypes. The products will support all-source data fusion and mining, replication of MDA related data gathered in various operations such as Expanded-Maritime Interdiction Operations (E-MIO), sharing information with allies, and developing subject matter expertise and assessment tools to achieve MDA and enhance operational decision making. FY08 and FY09 funding is located in Project Unit 9123. Funds realigned from Project Unit 9123 beginning in FY2010.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																	
RDT&E, N / BA-5	0604231N Tactical Command System	2351 -MDA																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;">FORCEnet</td> <td style="width: 15%; padding: 5px;">FY08</td> <td style="width: 15%; padding: 5px;">FY09</td> <td style="width: 15%; padding: 5px;">FY10</td> <td style="width: 15%; padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;">0.000</td> <td style="padding: 5px;">0.000</td> <td style="padding: 5px;">21.199</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E,N Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table>					FORCEnet	FY08	FY09	FY10		Accomplishments/Effort/Subtotal Cost	0.000	0.000	21.199		RDT&E,N Articles Quantity				
FORCEnet	FY08	FY09	FY10																
Accomplishments/Effort/Subtotal Cost	0.000	0.000	21.199																
RDT&E,N Articles Quantity																			
FY08-09: Funds previously located in PE 0604231N (Project Unit - 9123)																			
FY10: Maritime Domain Awareness (MDA): \$14.287M Spiral 1 Prototype (SP1P): Provides program management support and continued prototype integration for SP1P. Supports corrective and adaptive system engineering activities as the Joint Capability Technology Demonstration (JCTD) prototype transitions to operational capability in FY10. Ensures that issues identified during the Joint and Navy Operational Assessments are resolved, and that SP1P maintains interoperability with Joint and Naval Systems as Joint and Navy SOA frameworks are established. Supports verification and validation (V&V), and developmental regression and acceptance testing for baseline changes required for systems engineering activities. Provides hardware, software and other technical support for components deployed at Command 2nd Fleet - C2F, C3F, C4F, C5F and C7F as well as PACFLT, U.S. Fleet Forces Command (USFF), National Maritime Intelligence Center (NMIC), Maritime Intelligence Fusion Center (MIFC) MIFCLANT, MIFCPAC, NAVCENT, NAVEUR and the MDA Enterprise Node. Supports the NMIC and MIFC LANT/PAC to facilitate data integration with the Intelligence Community systems, DHS (Department of Homeland Security) and DOJ (Department of Justice). Continued support of the Maritime Information Exchange Model (MIEM) to promote interagency and coalition data sharing. Ensures capabilities are projected through non-classified, unclassified and classified networks.																			
Fusion and Analysis Services (FAS) Increment and Information Sharing End to End (IS E2E) Increment : The Navy's Resources, Requirements, Review Board (R3B) approved the MDA Capabilities Based Assessment (CBA) as briefed in January 2009. The MDA CBA identified capability gaps that will be resolved through non-materiel and materiel solutions. Pre-acquisition activities such as the development of an IS E2E Initial Capabilities Document (ICD) and the completion of FAS and IS E2E Analysis of Alternatives (AoA), will identify potential materiel solutions and form the requirements basis for the development of the FAS and IS E2E increments.																			
Deep Lightning Bolt / Rapid Capability Development (DLB/RCD): \$6.912M A transformational initiative for the Navy with two key objectives focused on the introduction of technologies that can immediately enhance the Navy's Sea Power 21 objectives: (1) the introduction of technology (that will transition into programs of record) that will push the evolution of doctrine, tactics, training and procedures to support network centric warfare and operations; and (2) to support the acceleration of acquisition of key capabilities to support the global war on terrorism and sustained military operations.																			

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE:

May 2009**APPROPRIATION/BUDGET ACTIVITY****PROGRAM ELEMENT****PROJECT NUMBER AND NAME****RDT&E, N / BA- 5**

0604231N Tactical Command System

2351 - MDA

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev - MDA	Various	Various										
Primary Hardware Dev - DLB/RCD						1.670	Various					
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration	Various	Various										
Shore Integration												
Systems Engineering -MDA						2.291	Various					
Systems Engineering - DLB/RCD	Various	TBD				0.721	Various					
Systems Engineering	Various	Various										
Award Fees												
Subtotal Product Development			0.000	0.000		4.682						

Remarks:

Development Support -MDA	Various	Various				1.013	Various					
Software Development-MDA	Various	Various										
Integrated Logistics Support - MDA												
Integrated Logistics Support - DLB/RCD	TBD	TBD				0.297	Various					
Configuration Management - MDA						0.145	Various					
Configuration Management - DLB/RCD	TBD	TBD				0.196	Various					
Development Support - DLB/RCD	TBD	TBD				0.297	Various					
Sys Req Analysis/Sys Eng-MDA	Various	Various				1.323	Various					
Software Development - DLB/RCD	TBD	TBD				2.639	Various					
Software Develop, Integrate, Demonstrate, Field - MDA Prototypes	TBD	TBD										
Subtotal Support			0.000	0.000		5.910						

Remarks:

Exhibit R-3, Project Cost Analysis

CLASSIFICATION:

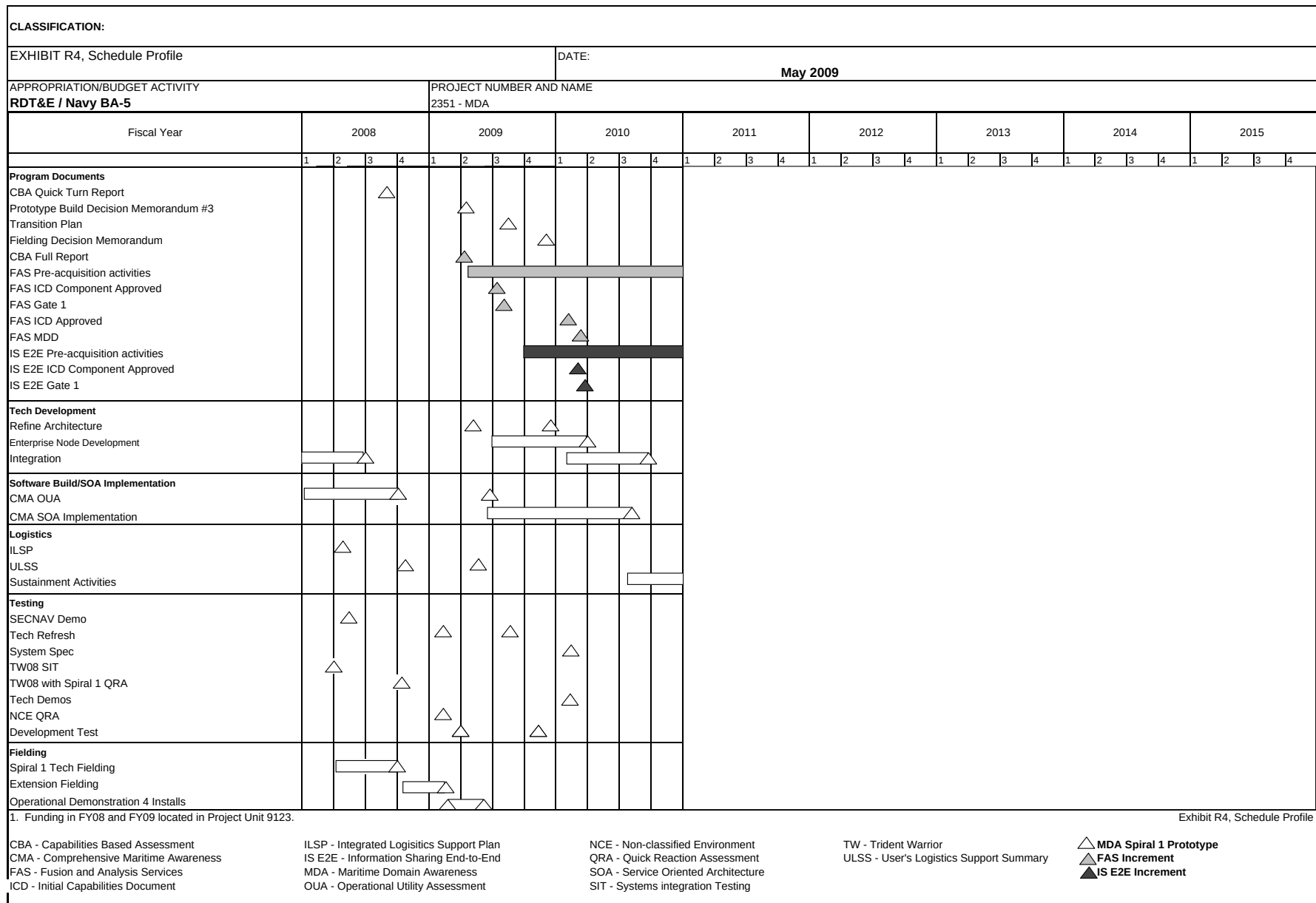
Exhibit R-3 Cost Analysis (page 2)

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604231N Tactical Command System			2351 - MDA						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Evaluation-MDA	Various	Various			10/08	3.401	Various					
Accelerating Joint Warfighting Capability	Various	Various										
Imp FORCEnet Req (Fn Comp)												
DoN Transformation (Strategic Planning)												
Developmental Test & Evaluation - DLB/RCD	TBD	TBD	0.000	0.000	Various	0.593	Various					
GFE												
Subtotal T&E			0.000	0.000		3.994						
Remarks:												
Acquisition Managment						3.377	Various					
Government Engineering Support												
Program Management Support - DLB/RCD						0.297	Various					
Travel - DLB/RCD						0.172	Various					
Program Management Support-MDA						2.717	Various					
Travel-MDA						0.050						
Subtotal Management			0.000	0.000		6.613						
Remarks:												
Total Cost			0.000	0.000		21.199						
Remarks:												

Exhibit R-3, Project Cost Analysis



CLASSIFICATION:

Exhibit R-4a, Schedule Detail							DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROJECT NUMBER AND NAME						
RDT&E / Navy BA-5	2351 - MDA						
Schedule Profile	FY 2008	FY 2009	FY 2010				
Program Documents							
CBA Quick Turn Report	3Q						
Prototype Build Decision Memorandum #3		2Q					
Transition Plan		3Q					
Fielding Decision Memorandum		4Q					
CBA Full Report		2Q					
FAS Pre-acquisition activities		2Q-4Q	1Q-4Q				
FAS ICD Component Approved		3Q					
FAS Gate 1		3Q					
FAS ICD JROC Approved			1Q				
FAS MDD			1Q				
IS E2E Pre-acquisition activities		4Q	1Q-4Q				
IS E2E ICD Component Approved			1Q				
IS E2E Gate 1			1Q				
Tech Development							
Refine Architecture		2Q & 4Q					
Enterprise Node Development		3Q-4Q	1Q				
Integration	1Q-2Q		1Q-3Q				
Software Build/SOA Implementation							
CMA OUA	1Q-3Q	2Q					
CMA SOA Implementation		2Q-4Q	1Q-3Q				
Logistics							
ILSP	2Q						
ULSS	4Q	2Q					
Sustainment Activities			3Q-4Q				
Testing							
SECNAV Demo	2Q						
Tech Refresh		1Q & 3Q					
System Spec			1Q				
TW08 SIT	2Q						
TW08 with Spiral 1 QRA	4Q						
Tech Demos			1Q				
NCE QRA		1Q					
Development Test		1Q & 4Q					
Fielding							
Spiral 1 Tech Fielding	2Q-3Q						
Extension Fielding	4Q	1Q					
Operational Demonstration 4 Installs		1Q-2Q					

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
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 2008	FY 2009	FY 2010					
Project Cost	0.049	0.050	6.358					
RDT&E Articles Qty								

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

The development of an enterprise database for the Naval Tactical Command Support System (NTCSS) application suite will place all NTCSS databases into a similar structure and single location, allowing for greater asset visibility and management. Maritime Logistics Data Network (MLDN) will facilitate the movement of administrative workload from ships to shore. Funding supports design, development, and testing of enterprise database and MLDN technologies for two components of NTCSS mission requirements: maintenance management and supply chain management. FY2008 and FY2009 funding supports program management and system engineering efforts for the transition of prior fiscal years' developments in NTCSS enterprise database and MLDN technologies. Those technologies include a single database for organizational maintenance activities in Navy/Marine Corps aviation and single direction replication of shipboard data to an ashore activity. FY2010 funding supports the design, development, and testing of One NALCOMIS (Naval Aviation Logistics Command/Management Information System), which will consolidate organizational and depot level aviation maintenance into a single system and aviation enterprise database. This will provide for streamlined maintenance management for the Navy and Marine Corps aviation. FY2010 funding also supports the development of acquisition documents for the Multi-UIC (Unit Identification Code) Milestone B decision. Multi-UIC will provide a consolidated database by combining logistics data from multiple fleet operational platforms into a single database ashore with bi-directional, transactional MLDN capabilities.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

DATE:

May 2009

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

Maintenance Management Capability	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.024	0.025	4.900	
RDT&E Articles Quantity				

FY08 Accomplishments: Conducted program management and system engineering efforts for the transition of prior fiscal years' developments in NTCSS (Naval Tactical Command Support System) enterprise database and MLDN (Maritime Logistics Data Network) technologies to One NALCOMIS (Naval Aviation Logistics Command/Management Information System).

FY09: Continue program management and system engineering efforts for the transition of prior fiscal years' developments in NTCSS enterprise database and MLDN technologies to One NALCOMIS.

FY10: Design and development efforts for NTCSS One NALCOMIS to consolidate unit and depot level aviation maintenance into a single system that will provide for streamlined maintenance management for the Navy and Marine Corps aviation. The current system and database structure for the NALCOMIS unit level application is different from the depot level one. The One NALCOMIS design and development efforts will leverage the best from each system into a single aviation maintenance system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

DATE:

May 2009

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

Supply Chain Management Capability	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.025	0.025	1.458	
RDT&E Articles Quantity				

FY08 Accomplishments: Conducted program management and system engineering efforts for the transition of prior fiscal years' developments in NTCSS (Naval Tactical Command Support System) enterprise database and MLDN (Maritime Logistics Data Network) technologies.

FY09: Continue program management and system engineering efforts for the transition of prior fiscal years' developments in NTCSS enterprise database and MLDN technologies.

FY10: Develop acquisition documents in accordance with revised DoD 5000 for Multi-UIC Milestone B decision. Acquisition documents include Analysis of Alternatives (AoA), Program Life Cycle Cost Estimate (PLCCE), Concept of Operations (CONOPS), Capability Development Document (CDD), and Information Support Plan (ISP).

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009		
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VARIOUS	VARIOUS	0.668									
Ancillary Hardware Development												
Systems Engineering	VARIOUS	VARIOUS	1.000	0.050	VARIOUS	0.150	VARIOUS					
Licenses	VARIOUS	VARIOUS	0.700									
Tooling												
GFE												
Award Fees												
Subtotal Product Development			2.368	0.050		0.150						
Remarks:												
Development Support												
Software Development	VARIOUS	VARIOUS	10.716			6.008	VARIOUS					
Training Development												
Integrated Logistics Support	VARIOUS	VARIOUS	0.000			0.100	VARIOUS					
Configuration Management	VARIOUS	VARIOUS	0.460									
Technical Data	VARIOUS	VARIOUS	0.200									
GFE												
Subtotal Support			11.376	0.000		6.108						
Remarks:												

Exhibit R-3, RD TEN Cost Analysis

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: May 2009			
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	0.000									
Operational Test & Evaluation	WX	NAWC-AD	0.585									
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Subtotal T&E			0.585	0.000		0.000						
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS	0.896									
Government Engineering Support	VARIOUS	VARIOUS	0.279									
Program Management Support	VARIOUS	VARIOUS	0.000			0.100	VARIOUS					
Travel												
Subtotal Management			1.175	0.000		0.100						
Remarks:												
Total Cost			15.504	0.050		6.358						
Remarks												

Exhibit R-3, RD TEN Cost Analysis

EXHIBIT R4, Schedule Profile																									DATE: May 2009							
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							
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Milestones												INC 1 MS B ▲																				
One-NALCOMIS																																
Multi-UIC																																
Engineering Milestones									INC 1 SCR ▲																							
One-NALCOMIS																																
Multi-UIC																																
Test & Evaluation Milestones																																
One-NALCOMIS																																
Multi-UIC																																
Product Deliveries																																
One-NALCOMIS																																
Multi-UIC																																

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail						DATE:		
APPROPRIATION/BUDGET ACTIVITY						May 2009		
RDT&E,N/BA-5						PROJECT NUMBER AND NAME		
0604231N - Tactical Command System						3032 NTCSS Enterprise Database and MLDN		
Schedule Profile	FY 2008	FY 2009	FY 2010					
One NALCOMIS								
Increment 1								
Milestone B			Q4					
Milestone C								
SCR			Q1					
TRR								
RRR								
DT								
OT								
Delivery								
Increment 2								
Milestone B								
Milestone C								
SCR								
TRR								
RRR								
DT								
OT								
Delivery								
Multi-UIC								
Increment 1								
Milestone B								
Milestone C								
SCR								
TRR								
RRR								
DT								
OT								
Delivery								
Increment 2								
Milestone B								
Milestone C								
SCR								
TRR								
RRR								
DT								
OT								
Delivery								

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System			PROJECT NUMBER AND NAME 9123 FORCEnet				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost		19.108	33.721	6.758					
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: FORCEnet is the Navy and Marine Corps initiative to achieve Department of Navy (DoN)/Department of Defense (DoD) Transformation, Joint/Allied/Coalition Interoperability, implementing Maritime Domain Awareness (MDA), and Net-Centric Operations/Warfare (NCO/W). FORCEnet is the driver of Sea Power 21, Naval Power 21, the Naval Operating Concept for Joint Operations, and the Department of the Navy's Naval Transformation Roadmap. The FORCEnet project line funds the following efforts: (1) Department of Navy (DoN) C4ISR Transformation/Strategic Planning within DoN/Joint/Department of Defense (DoD) Framework: Assesses existing and emerging capabilities, develops and evaluates Navy-wide policies, plans, requirements, and compliance; develops integration and investment strategies; and accelerates innovation, testing, assessment and fielding of material and non-material solutions for enhanced operational capability, Joint/Allied/Coalition interoperability and application/enforcement of enterprise requirements/architectures/standards toward greater NCO/W capability. Supports Navy implementation of Maritime Domain Awareness (MDA) capability, Maritime Operations Centers (MOC), and enterprise network efforts. (2) Accelerating Joint Warfighting Capability (Trident Warrior): Enables early delivery of NCO/W capabilities to the warfighter via Fleet-directed Trident Warrior operational events with a strong emphasis on delivering Maritime Domain Awareness (MDA) and Maritime Headquarters (MHQ) with Maritime Operations Center (MOC) capability. 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. Develops supporting concepts/Concept of Operations (CONOPS) to improve warfighting effectiveness. Coordinates FORCEnet efforts with other Service/Joint/DoD/National efforts to ensure Joint/Interagency/Allied/Coalition applicability and interoperability. (3) Implementing Sea Power-21 /FORCEnet Requirements: Implements and assesses FORCEnet requirements in DoN acquisition programs. Develops supporting architectures/standards and data strategies. Develops FORCEnet Implementation Tool Suite (FITS). Develops FORCEnet compliance services. Develops FORCEnet compliance test procedures and test methodologies. Refines FORCEnet compliance and defines levels of compliance. Conducts compliance testing reviews and reports on compliance adherence to Office of the Chief of Naval Operations (OPNAV), Naval Network Warfare Command (NETWARCOM), Assistant Secretary of the Navy Research, Development and Acquisition (ASN RDA) and the FORCEnet Coordination Council. Execute Systems Engineering Technical Authority and process implementation including execution of Systems Engineering Technical Reviews throughout all Navy POR lifecycles in the FORCEnet domain. (4) Systems Requirements Analysis / Systems Engineering (formerly Osprey Hawksbill): Supports requirements analysis and systems engineering of systems under development by DoN/DoD. Funding supports the technical and systems engineering expertise required for C4ISR systems technical requirements generation, requirements tracking, architecture development, and detailed analyses on various warfare systems under development to determine if the required C4 infrastructure, resources, and other capabilities are aligned and synchronized. The funding also supports the systems engineering for the synthesis of current network-centric, C4ISR programs of record with existing/emerging capabilities. (5) Maritime Domain Awareness (MDA): Maritime Domain Awareness is the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy or environment. MDA objectives include the persistent monitoring of and ability to access and maintain data on vessels, cargo, people, and infrastructure; and the ability to collect, fuse, analyze, and disseminate information to decision makers to facilitate effective understanding. This initiative will identify, develop and transition data fusion, replication, sharing and assessment tools to achieve MDA. The initiative extends the reach of MDA tools and capabilities to include the Atlantic approaches to the United States and the European Area of Responsibility (AOR). This MDA focused Deep Lightning Bolt (DLB) warfighting enhancements are designed to achieve an all-source distributed MDA capability, leveraging existing MDA Navy and Non-Navy initiatives in the developmental phase and ensuring the best products transition to strategic, operational and tactical users as well as further development of MDA prototypes. The products will support all-source data fusion and mining, replication of MDA related data gathered in various operations such as expanded-maritime interdiction operations (E-MIO), sharing information with allies, and developing subject matter expertise and assessment tools to achieve MDA and enhance operational decision making.									

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
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			
FORCEnet	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	12.084	14.399	6.758
RDT&E,N Articles Quantity			
FY08 Accomplishments: 1) DoN Transformation within Joint/DoD Framework (Strategic Planning): Refined expanded Joint/Interagency/Allied/Coalition coordination/policy/planning. Convened the fourth annual FORCEnet Requirements/Capabilities and Compliance (FRCC) Review Board and FRCC Flag Board. Validated FORCEnet Requirements/Architectures/Standards Spiral/Iteration. Updated integrated FORCEnet Consolidated Compliance Checklist (FCCC) and continued to refine/expand DoN-wide implementation of FORCEnet/FCCC compliance under SECNAVINST 5000.2D. 2) Accelerating Joint Warfighting Capability (Trident Warrior): Explored Trident Warrior 08 (TW08) in Commander Third Fleet (C3F)/Commander Seventh Fleet (C7F) Area of Responsibility (AOR) using Carrier Strike Group/Expeditionary Strike Group (CSG/ESG) units with continued Coalition presence. Investigated operational level implementation of Maritime Domain Awareness (MDA), Maritime Headquarters (MHQ) Maritime Operations Center (MOC), Coalition, Global Information Grid (GIG) and Network Centric Enterprise Services (NCES) technologies and associated Tactics, Techniques, and Procedures (TTPs) and Concept of Operations (CONOPS). Provided support for the spiral development of programs of record. Planned and executed TW08 operational events to accelerate transition of FORCEnet capability to the Fleet. Provided leave-behind capability for one deployment cycle of successful technologies for extended operational assessment. Completed analysis of TW08 experiment results and deliver Military Utility Assessment to Naval Network Warfare Command (NETWARCOM), Commander Fleet Forces Command (CFFC) and the Sea Trial ESG. Began planning for Trident Warrior 09. Developed FY 09-10 FORCEnet Sea Trial Plan. 3) Implementing FORCEnet Requirements: Performed Program of Records compliance reviews using validated assessment tools, compliance test procedures/methodologies. Reported Program of Record level of FORCEnet compliance to OPNAV, NETWARCOM, ASN(RD&A) and the FORCEnet Coordination Council. Delivered two FORCEnet Implementation Tool Suite Spirals. Continued to refine/expand the FORCEnet Capabilities Development Process, integrated FORCEnet Compliance into the DoN Planning/Programming/Budgeting/Execution (PPBE) and Joint Capabilities Integration and Development System processes. Implemented Netcentric Data Strategy across all Navy led Communities of Interest. 4) Osprey Hawksbill - This is a classified program.			

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME 9123 FORCEnet
(U) B. Accomplishments/Planned Program (Continued)		
FY09 Plans:		
1) DoN Transformation within Joint/DoD Framework (Strategic Planning): Refine expanded Joint/Interagency/Allied/Coalition coordination/policy/planning. Convene the fifth annual FRCC Review Board and FRCC Flag Board. Validate FORCEnet Requirements/Architectures/Standards Spiral/Iteration. Update integrated FORCEnet Consolidated Compliance Checklist (FCCC) and continue to refine/expand DoN-wide implementation of FORCEnet/FCCC compliance under SECNAVINST 5000.2D . 2) Accelerating Joint Warfighting Capability (Trident Warrior): Explore Trident Warrior 09 (TW09) in Commander Second Fleet (C2F)/Commander Sixth Fleet (C6F) Area of Responsibility (AOR) using Carrier Strike Group/Expeditionary Strike Group (CSG/ESG) units with continued Coalition presence. Investigate operational level implementation of Maritime Domain Awareness (MDA), Maritime Headquarters (MHQ) Maritime Operations Center (MOC), Coalition, Global Information Grid (GIG) and Network Centric Enterprise Services (NCES) technologies and associated Tactics, Techniques, and Procedures (TTPs) and Concept of Operations (CONOPS). Provide support for the spiral development of programs of record. Support MDA Spiral 2 testing. Plan and execute TW09 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. Complete analysis of TW09 experiment results and deliver Military Utility Assessment to Naval Network Warfare Command (NETWARCOM), Commander Fleet Forces Command (CFFC) and the Sea Trial ESG. Begin planning for Trident Warrior 10. Develop FY 10-11 FORCEnet Sea Trial Plan. 3) Implementing FORCEnet Requirements: 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 Coordination Council. Deliver two FORCEnet Implementation Tool Suite Spirals. Continue to refine/expand the FORCEnet Capabilities Development Process, integrating FORCEnet Compliance into the DoN Planning/Programming/Budgeting/Execution (PPBE) and JCIDS processes. Implement Netcentric Data Strategy across all Navy led Communities of Interest. 4) Systems Requirements Analysis / Systems Engineering (formerly Osprey Hawksbill): Conducts requirements analysis and systems engineering of systems under development by DoN/DoD. Provides technical and systems engineering expertise required for C4ISR systems technical requirements generation and tracking, architecture development, systems analysis to evaluate alignment and synchronization of infrastructure, resources and other existing/developing systems. Funding also supports the systems engineering for the synthesis of current net-centric C4ISR systems with existing and emerging C4ISR systems.		

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME 9123 FORCEnet
(U) B. Accomplishments/Planned Program (Continued)		
FY10 Plans: 1) Department of the Navy (DON) C4ISR Transformation: Within the Department of Defense (DOD), Joint Staff (JS), and Combatant Commander management of Joint Capability Portfolios, assesses existing and emerging capabilities in selected operating environments, develops integration plans, execute systems engineering reviews and investment strategies, and accelerates innovation, technology insertion and incorporation of material and non-material solutions for enhanced, Joint operational capabilities in Net-Centric Operations Warfare (NCOW). Supports Navy implementation of Maritime Domain Awareness (MDA), Standing Joint Force Headquarters, Maritime Operations Centers (MOC) and coalition/Allied operations. (Portion realigned to Program Element 0604707N, Project 02144 SPACE AND ELECTRONIC WARFARE ENGINEERING starting in FY10.) 2) Accelerating Joint Warfighting Capability (Trident Warrior): Finalize analysis of TW09 experiment to result in delivery of Military Utility Assessment to Naval Network Warfare Command (NETWARCOM), Commander Fleet Forces Command (CFFC) and the Sea Trial ESG. Explore Trident Warrior 10 (TW10) in Commander Third Fleet (C3F)/Commander Seventh Fleet (C7F) Area of Responsibility (AOR) using Carrier Strike Group/Expeditionary Strike Group (CSG/ESG) units with continued Coalition presence. For TW10 direct, coordinate, assist and supervise participant compliance with specific goal identification, risk identification, and experiment plan including data requirements and collection on schedule and in accordance with standardized procedures derived from experimentation best practices. Assist participants to achieve required installation and security certifications, accreditations and approvals. Conduct Risk Reduction Limited Objective Experiment in a lab environment to ensure systems will have no negative impact on operational unit readiness and that systems provide valid data to support analysis and subsequent decisions. Assist in installation of experimental systems including conduct of a groom of ship operational systems to ensure they are operating as designed to support acquisition of valid data, providing subject matter experts (SMEs) to maintain core ship services during the experiment period. Provide independent experts in experimentation to coordinate the establishment and compliance with experiment plans and to lead analysis effort and provide unbiased assessment to decision makers. Provide results to government sponsors to support the program's Planning, Programming, and Budgeting System (PPBS) and engineering decisions. Anticipate some areas of investigation to be operational level implementation of Maritime Domain Awareness (MDA), Maritime Headquarters (MHQ) Maritime Operations Center (MOC), Coalition, Global Information Grid (GIG) and Network Centric Enterprise Services (NCES) technologies and associated Tactics, Techniques, and Procedures (TTPs) and Concept of Operations (CONOPS). Plan and execute TW10 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 11: Solicit participation of government sponsored and industry sponsored technologies responsive to identified Naval capability gaps. Select technologies for participation in numbers supportable within resources, approximately 100 initiatives. Develop FY 11-12 FORCEnet Sea Trial Plan. 3) Implementing FORCEnet Requirements: Realigned to Program Element 0604707N, Project 02144 Space and Electronic Warfare Engineering starting in FY10. 4) Systems Requirements Analysis / Systems Engineering (formerly Osprey Hawksbill): Conducts requirements analysis and systems engineering of systems under development by DoN/DoD. Provides technical and systems engineering expertise required for C4ISR systems technical requirements generation and tracking, architecture development, systems analysis to evaluate alignment and synchronization of infrastructure, resources and other existing/developing systems. Funding also supports the systems engineering for the synthesis of current net-centric C4ISR systems with existing and emerging C4ISR systems.		

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
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				
Maritime Domain Awareness (MDA)	FY08	FY09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	7.024	19.322	0.000	
RDT&E,N Articles Quantity				
FY08 Accomplishments: Leveraged Comprehensive Maritime Awareness (CMA) Joint Capabilities Technology Demonstration's (JCTD) results and technologies and other MDA related initiatives to provide baseline capabilities for all-source data fusion and mining, sharing information with allies, and developing subject matter expertise and assessment tools to achieve MDA and enhance operational decision making. Based on OPNAV N6/N2 requirements determinations, conducted systems engineering, test and evaluation, fielding and training activities in support of MDA Prototype delivery. MDA Prototype Nodes were fielded at PACFLT, NAVCENT and NAVEUR/C6F and provided access to enhanced vessel tracking and long term storage and access to historical vessel tracking data to include Automatic Identification System (AIS) unclassified data sharing for greater fidelity in automated anomaly detection and enhanced pattern recognition, trend analysis. Culmination of efforts was successful Quick Reaction Assessment (QRA) conducted by OPTEVFOR on MDA Prototype. FY09 Plans: MDA The MDA Prototype, including the Non-Classified Enclave (NCE), delivers enhanced vessel tracking, anomaly detection, threat detection, expanded maritime interdiction capabilities and improved access to national databases for Naval and Coast Guard activities supporting National Maritime Security. Specific planned activities for FY09 that support the MDA prototype include; implementing the FY08 QRA findings and recommendations, systems engineering and test and evaluation activities, deploying Forward System Engineering Teams (FSETS) to maintain prototype capabilities at fielded sites; delivering enhanced training materials, refresher training and long-term training development, logistics support and other program management support. Conduct CMA JCTD Operational Utility Assessment (OUA). Based on OUA findings, technology maturity, adaptability and expansion potential, Assistant Secretary of the Navy for Research Development and Acquisition (ASNRDA) will determine final Fielding Decision. Conduct successful Quick Reaction Assessment (QRA) on Non-Classified Enclave (NCE). Deployed NCE to Africa Partnership Station onboard USS Nashville. Plan to relocate NCE hosting facility to SOUTHCOM. Deep Lightning Bolt / Rapid Capability Development (DLB/RCD) The DLB/RCD is a transformational initiative for the Navy with two key objectives focused on the introduction of technologies that can immediately enhance the Navy's Sea Power 21 objectives: (1) the introduction of technology (that will transition into programs of record) that will push the evolution of doctrine, tactics, training and procedures to support network centric warfare and operations; and (2) the introduction of OPNAV and SECNAV instructions to support the acceleration of acquisition of key capabilities to support the global war on terrorism and sustained military operations.) FY10 Plans: Funds realigned to Project Unit 2351.				

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA- 5	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME 9123 FORCEnet
(U) C. OTHER PROGRAM FUNDING SUMMARY: <u>Line Item No. & Name</u> Not Applicable (U) D. ACQUISITION STRATEGY: Not Applicable		

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE:

May 2009

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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev - DLB/RCD	Various	Various	0.000	1.421	Various							
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration	Various	Various	0.935									
Shore Integration												
Systems Engineering - DLB/RCD	Various	Various	0.000	0.650	Various							
Systems Engineering	Various	Various	1.600									
Award Fees												
Subtotal Product Development			2.535	2.071		0.000						

Remarks: Funding for DLB/RCD for FY10 and FY11 realigned to Project Unit 2351.

Development Support	Various	Various		2.700								
Software Development	Various	Various		2.900								
Integrated Logistics Support - DLB/RCD	Various	Various		0.000	0.250	Various	0.000	Various				
Configuration Management - DLB/RCD	Various	Various		0.000	0.165	Various	0.000	Various				
Development Support - DLB/RCD	Various	Various		0.000	0.250	Various	0.000	Various				
Sys Req Analysis/Sys Eng	Various	Various		12.062	1.948	Various	1.101	Various				
Software Development - DLB/RCD	Various	Various		0.000	2.250	Various	0.000	Various				
Software Develop, Integrate, Demonstrate, Field - MDA Prototypes	Various	Various			13.441	Various						
Subtotal Support				17.662	18.304		1.101					

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE:

May 2009**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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.300									
Accelerating Joint Warfighting Capability	Various	Various	21.754	5.315	Various	4.616	Various					
Imp FORCEnet Req (Fn Comp)	Various	Various	13.571	3.867	Various		Various					
DoN Transformation (Strategic Planning)	Various	Various	16.427	3.269	Various	1.041	Various					
Developmental Test & Evaluation - DLB/RCD	Various	Various	0.000	0.500	Various	0.000	Various					
GFE												
Subtotal T&E			53.052	12.951		5.657						

Remarks: Funding for DLB/RCD for FY10 and FY11 realigned to Project Unit 2351.

Technical Support	Various	Various	2.124									
Government Engineering Support	Various	Various	3.899									
Program Management Support - DLB/RCD	Various	Various	0.000	0.250	Various		Various					
Travel - DLB/RCD	Various	Various	0.000	0.145	Various		Various					
Program Management Support	Various	Various	0.800									
Travel	Various	Various	0.299									
Subtotal Management			7.122	0.395		0.000						

Remarks:

Total Cost			80.371	33.721		6.758						

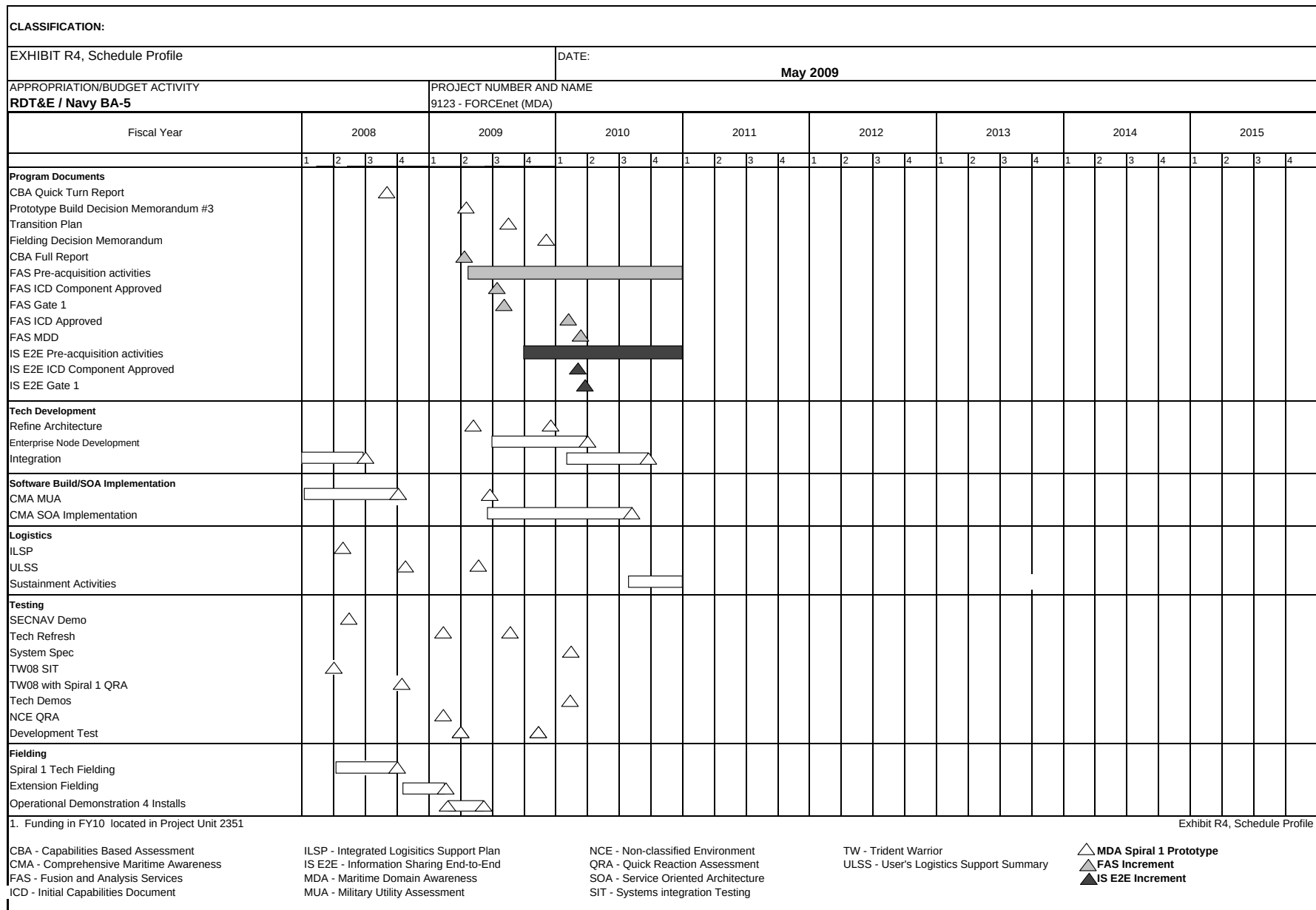
Remarks:

Exhibit R-3, Project Cost Analysis

CLASSIFICATION:																																		
EXHIBIT R4, Schedule Profile												DATE: May 2009																						
APPROPRIATION/BUDGET ACTIVITY					PROJECT NUMBER AND NAME																													
RDT&E / Navy BA-5					9123 FORCEnet																													
Fiscal Year		2008			2009				2010				2011				2012				2013				2014				2015					
QTR		6.24	12.5	12	19.4	19.8	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
TRIDENT WARRIOR																																		
TW[CFY-1] Military Utility Assessment																																		
TW [CFY] Execution			△	△				△	△			△	△																					
TW[CFY+1] Concept Development Conferences			△	△				△	△			△	△																					
TW[CFY+1] Data Calls & CAA			△	△				△	△			△	△																					
TW[CFY+1] Initial Planning Conferences					△					△																								
TW[CFY] Mid-Term Planning Conferences		△				△					△																							
TW[CFY] Final Planning Conferences			△				△					△																						
TW [CFY] Military Utility Assessment					△				△				△																					
STRATEGIC PLANNING																																		
NNFE CFT Participation																																		
Interoperability across Navy Report		△																																
Interoperability across Joint Report		△																																
Implementing FORCEnet Requirements (FORCEnet Compliance)																																		
MS Reviews		△																																
ISP Review																																		
C5I Mod Inputs		△																																
NCIDS Profiles		△																																
Verification/Validation Assessments		△																																
NNFE Mod/LCS & Certs/Test		△																																
Imp/SETR		△																																
FITS **																																		
FITS OIPT			△		△			△		△																								
S/W Test																																		
FITS IOC																																		
FITS FOC		△																																
Data Refresh																																		
FITS Spiral Delivery			△		△			△				△																						
DLB/RCD																																		
Planning Conference						△			△	FY 10 Funding realigned to Project Unit 2351.																								
Program/Project Review						△		△																										
Project Testing																																		

** FITS and Strategic Planning efforts realigned to Program Element 0604707N, Project 02144 SPACE AND ELECTRONIC WARFARE ENGINEERING starting in FY10

Exhibit R-4, Schedule Profile



CLASSIFICATION:								
Exhibit R-4a, Schedule Detail							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E / Navy BA-5		PROJECT NUMBER AND NAME 9123 FORCEnet						
Schedule Profile	FY 2008	FY 2009	FY 2010					
TRIDENT WARRIOR [CFY = Current Fiscal Year]								
TW[CFY-1] Military Utility Assessment								
TW[CFY] Execution	2Q/3Q	2Q/3Q	2Q/3Q					
TW[CFY+1] Concept Development Conferences	2Q	2Q	2Q					
TW[CFY+1] Data Calls & CAA	2Q	2Q	2Q					
TW[CFY+1] Initial Planning Conferences	4Q	4Q	4Q					
TW[CFY] Mid-Term Planning Conferences	1Q	1Q	1Q					
TW[CFY] Final Planning Conferences	2Q	2Q	2Q					
TW[CFY] Military Utility Assessment	4Q	4Q	4Q					
STRATEGIC PLANNING								
NNFE CFT Participation	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Interoperability across Navy Report	2Q	2Q						
Interoperability across Joint Report	4Q	4Q						
Implementing FORCENet Requirements (FORCENet Compliance)								
MS Reviews	1Q - 4Q	1Q - 4Q	1Q - 4Q					
ISP Review	1Q - 4Q	1Q - 4Q	1Q - 4Q					
C5I Mod Inputs	1Q - 4Q	1Q - 4Q	1Q - 4Q					
NCIDS Profiles	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Verification/Validation Assessments	1Q - 4Q	1Q - 4Q	1Q - 4Q					
NNFE Mod/LCS & Certs/Test	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Imp/SETR	1Q - 4Q	1Q - 4Q	1Q - 4Q					
FITS **								
FITS OIPT	2Q/4Q	2Q/4Q						
S/W Test	1Q/3Q	1Q/3Q						
FITS IOC								
FITS FOC	1Q							
Data Refresh	4Q	4Q						
FITS Spiral Delivery	2Q/4Q	2Q/4Q	2Q/4Q					
DLB/RCD								
Planning Conference		Q1, Q4						
Program/Project Review		1Q - 4Q		FY 10 to FY 11 Funding realigned to Project Unit 2351.				
Project Testing		Q4						

** FITS and Strategic Planning efforts realigned to Program Element 0604707N, Project 02144 SPACE AND ELECTRONIC WARFARE ENGINEERING starting in FY10

Exhibit R-4a, Schedule Detail

CLASSIFICATION:

Exhibit R-4a, Schedule Detail							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROJECT NUMBER AND NAME							
RDT&E / Navy BA-5	9123 - FORCEnet (MDA)							
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Program Documents								
CBA Quick Turn Report	3Q							
Prototype Build Decision Memorandum #3		2Q						
Transition Plan		3Q						
Fielding Decision Memorandum		4Q						
CBA Full Report		2Q						
FAS Pre-acquisition activities		2Q-4Q	1Q-4Q					
FAS ICD Component Approved		3Q						
FAS Gate 1		3Q						
FAS ICD JROC Approved			1Q					
FAS MDD			1Q					
IS E2E Pre-acquisition activities		4Q	1Q-4Q					
IS E2E ICD Component Approved			1Q					
IS E2E Gate 1			1Q					
Tech Development								
Refine Architecture		2Q & 4Q						
Enterprise Node Development		3Q-4Q	1Q					
Integration	1Q-2Q		1Q-3Q					
Software Build/SOA Implementation								
CMA OUA	1Q-3Q	2Q						
CMA SOA Implementation		2Q-4Q	1Q-3Q					
Logistics								
ILSP	2Q							
ULSS	4Q	2Q						
Sustainment Activities			3Q-4Q					
Testing								
SECNAV Demo	2Q							
Tech Refresh		1Q & 3Q						
System Spec			1Q					
TW08 SIT	2Q							
TW08 with Spiral 1 QRA	4Q							
Tech Demos			1Q					
NCE QRA		1Q						
Development Test		1Q & 4Q						
Fielding								
Spiral 1 Tech Fielding	2Q-3Q							
Extension Fielding	4Q	1Q						
Operational Demonstration 4 Installs		1Q-2Q						

Exhibit R-4a, Schedule Detail

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604231N - Tactical Command System	9999 Various Congressional Increases		

(U) B. Accomplishments/Planned Program

09C06 Distributed Multi-Platform Sensor Support System	FY08	FY09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	2.410	0.000	0.000	0.000
RDT&E Articles Quantity				

FY08: Anti-submarine warfare (ASW) combat and weapon systems were platform-centric and had limited capability in leveraging and utilizing other ASW sensors and weapon systems. A Detect-to-Engage architecture that integrated battle group sensors, data, control systems, weapons and platforms into a Sensor Grid, USW Control Grid and Weapon Grid is required. This project tied together the network efforts developed by AAC and MSU with the tactical shipboard sonar systems, thereby provided sensor data into the Global Command and Control System-Maritime (GCCS-M) Common Operational Picture.

09D68 Intelligence, Surveillance, and Reconnaissance Enhancements	FY08	FY09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	0.000	3.989	0.000	0.000
RDT&E Articles Quantity				

FY09:
Funding is for analysis, development of architectural alternatives, use case generation, CONOPS development, system engineering and prototyping activities necessary to incorporate multiple security enclaves (projected Objective requirement for Increment 2.1 and Threshold requirement for Increment 3.0) into Tactical Operation Centers (TOCs) and Mobile Tactical Operations Systems (MTOCs) to support the enhanced ISR capabilities of new and upgraded Maritime Patrol and Reconnaissance Aircraft (MPRA).

EXHIBIT R-2, RDT&E Budget Item Justification

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604234N, ADVANCED HAWKEYE			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	785.792	482.355	364.557					
3051 E-2C RMP	785.792	482.355	364.557					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2D Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components including Cooperative Engagement Capability Pre-Planned Product Improvement (CEC P3I) and Dual Transmit Satellite Communications (SATCOM) that modernize the E-2 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. Mode 5/S is an upgrade to the existing IFF System providing the warfighter positive, secure and reliable identification of friendly aircraft, surface and sub-surface platforms. Mode 5/S replaces the National Security Administration (NSA) de-certified Mode 4 IFF capability, which is no longer effective or suitable for modern military operations. Mode 5/S will support the Joint Initial Operational Capability (IOC) as defined by the Joint Requirements Oversight Council (JROC). This Program Element was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D), followed by SD&D. Major activities in FY 2009 included continued subsystem and weapon system verification testing, discrepancy report and yellow sheet resolution and on going risk reduction efforts on the two SDD aircraft. The three pilot production aircraft continue being manufactured on the production line, and Milestone C approval will give authority to enter the production and deployment phase and to procure Low Rate Initial Production lot aircraft. A second Operational Assessment on SDD aircraft will be conducted in FY 2010, with Initial Operational Test and Evaluation scheduled for FY 2012. IOC is planned for FY 2015.								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604234N, ADVANCED HAWKEYE																																																	
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 35%;"></th> <th style="text-align: right; width: 15%;">FY08</th> <th style="text-align: right; width: 15%;">FY09</th> <th style="text-align: right; width: 15%;">FY10</th> </tr> </thead> <tbody> <tr> <td>Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">791.707</td> <td style="text-align: right;">484.159</td> <td style="text-align: right;">213.613</td> </tr> <tr> <td>Current President's Budget:</td> <td style="text-align: right;">785.792</td> <td style="text-align: right;">482.355</td> <td style="text-align: right;">364.557</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-5.915</td> <td style="text-align: right; border-top: 1px solid black;">-1.804</td> <td style="text-align: right; border-top: 1px solid black;">150.944</td> </tr> <tr> <td colspan="4" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td> Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Congressional Adjustments</td> <td></td> <td style="text-align: right;">-0.493</td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td style="text-align: right;">-5.915</td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">150.957</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-1.311</td> <td style="text-align: right;">-0.013</td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-5.915</td> <td style="text-align: right; border-top: 1px solid black;">-1.804</td> <td style="text-align: right; border-top: 1px solid black;">150.944</td> </tr> </tbody> </table> Schedule: Extend DT/DT Assist to correlate with Pilot Production DT/DT Assist. Corrected dates for LRIP I contract award. Milestone C decision was postponed from 2Q FY 2009 to 3Q FY 2009, awaiting confirmation of USD (AT&L). An OIPT and Operational Assessment #2 were added to support a new DAB decision for approval of LRIP III and IV. Technical: Not Applicable.				FY08	FY09	FY10	Funding:				Previous President's Budget:	791.707	484.159	213.613	Current President's Budget:	785.792	482.355	364.557	Total Adjustments	-5.915	-1.804	150.944	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments		-0.493		SBIR/STTR/FTT Assessments	-5.915			Program Adjustments			150.957	Rate/Misc Adjustments		-1.311	-0.013	Subtotal	-5.915	-1.804	150.944
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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, ADVANCED HAWKEYE				PROJECT NUMBER AND NAME 3051, E-2C RMP			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	785.792	482.355	364.557					
RDT&E Articles Qty	3							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2D Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components including Cooperative Engagement Capability Pre-Planned Product Improvement (CEC P3I) and Dual Transmit Satellite Communications (SATCOM) that modernize the E-2 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. Mode 5/S is an upgrade to the existing IFF System providing the warfighter positive, secure and reliable identification of friendly aircraft, surface and sub-surface platforms. Mode 5/S replaces the National Security Administration (NSA) de-certified Mode 4 IFF capability, which is no longer effective or suitable for modern military operations. Mode 5/S will support the Joint Initial Operational Capability (IOC) as defined by the Joint Requirements Oversight Council (JROC). 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 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 program element was utilized for AHE (Radar Modernization Program (RMP)) pre-System Development and Demonstration (Pre-SD&D), followed by SD&D. Major activities in FY 2009 include continued subsystem and weapon system verification testing, discrepancy report and yellow sheet resolution and on going risk reduction efforts on the two SDD aircraft. The three pilot production aircraft continue being manufactured on the production line, and Milestone C approval will give authority to enter the production and deployment phase and to procure Low Rate Initial Production lot aircraft. A second Operational Assessment on SDD aircraft will be conducted in FY 2010, with Initial Operational Test and Evaluation scheduled for FY 2012. IOC is planned for FY 2015.								

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, ADVANCED HAWKEYE	PROJECT NUMBER AND NAME 3051, E-2C RMP		
B. Accomplishments/Planned Program				
System Development and Demonstration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	612.774	327.518	213.523	
RDT&E Articles Quantity	3			
Awarded System Development and Demonstration (SD&D) Contract with Northrop Grumman Corporation. Entered into SD&D for E-2D AHE program. Conduct engineering and development efforts for weapon system and SD&D pilot production. Continue SD&D, Pilot Production, Cooperative Engagement Capability Pre-Planned Product Improvement (CEC P3I), and Dual Transmit SATCOM efforts. Conduct System Functional Qualification Testing, Phase D Testing and Production Validation, Weapon System functional and physical configuration audits of Pilot Production aircraft.				
Government Furnished Equipment	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	19.210			
RDT&E Articles Quantity				
Funded Government Furnished Equipment (GFE) Pilot Production aircraft through FY 2008.				
NAWCAD Engineering and Test Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	56.115	45.082	35.749	
RDT&E Articles Quantity				
Fund Government Engineering, Contractor Engineering, and Classified Engineering Support. Perform Government oversight. Execute test program risk reduction efforts. FY 2008 and FY 2009 fund flight test activities in St. Augustine, FL, and Patuxent River, MD, development of CEC P3I and Dual Transmit SATCOM capabilities, and provide engineering oversight for production related activities for pilot production aircraft. FY 2010 funds the continuation of developmental testing including radar performance testing and remaining full system integration testing. Continue Weapon System Specification Verification for resolution of deficiencies prior to Operational Evaluation (OPEVAL).				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, ADVANCED HAWKEYE	PROJECT NUMBER AND NAME 3051, E-2C RMP		
B. Accomplishments/Planned Program (Cont.)				
NC-130H/E-2D Classified Programs	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	63.733	67.723	45.312	
RDT&E Articles Quantity				
Provide support for the NC-130H engineering risk reduction efforts. Fund E-2D Classified Development efforts. Fund NC-130H AHE Advanced Development Model system flight test and test analysis.				
Trainers	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	33.960	42.032	45.528	
RDT&E Articles Quantity				
Fund Weapons System Trainers, Operational Flight Trainers and Simulated Maintenance Trainers.				
Mode 5/S	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			24.445	
RDT&E Articles Quantity				
Mode 5/S is the replacement/upgrade to the existing Identification Friend or Foe (IFF) system. This funding is for system development, integration and testing to support the incorporation of Identification Friend or Foe (IFF) Mode 5/S technology into the E-2D IFF Interrogator mission equipment. Emphasis will be on software development for both the IFF Enclosure and the Mission Computer. Integration testing will include laboratory, ground and flight tests.				

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, ADVANCED HAWKEYE	PROJECT NUMBER AND NAME 3051, E-2C RMP
C. OTHER PROGRAM FUNDING SUMMARY:		
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u> <u>FY 2010</u>
APN-1/E-2C/D (LI# 18 & 19)	52.220	384.559 606.169
APN-6/E-2C/D (LI# 57)	0.970	34.735 53.047
 D. ACQUISITION STRATEGY:		
Acquisition Strategy was signed by Milestone Decision Authority (MDA), USD (AT&L) on 13 May 2003. Milestone B approval to proceed with System Development and Demonstration was given June 2003 by the Defense Acquisition Board (DAB).		

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Exhibit R-3 Cost Analysis								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N / BA-5			0604234N, ADVANCED HAWKEYE			3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Award Fees	SS-CPAF	NGC NY	80.519	21.112	06/09	34.358	06/10					
GFE	C-CPIF	NAVSEA, WNY DC	12.371									
GFE	VARIOUS	VARIOUS	18.848									
Primary Hdw Development	SS-CPAF	NGC NY	2,325.058	299.603	10/08	177.978	10/09					
Primary Hdw Development	SS-FFP	STICHTING D, NEDERLANDS	4.482									
Primary Hdw Development	SS-FFP	ROLLS-ROYCE, IN	0.016									
Primary Hdw Development Training	VARIOUS	VARIOUS	10.078									
Primary Hdw Development Training	C-CPIF	ROCKWELL COLLINS, IA	20.770	14.671	01/09	33.500	01/10					
Primary Hdw Development Training	TBD	TBD	0.000	24.803	06/09	9.219	05/10					
Primary Hdw Development Training	SS-CPAF	NGC NY	3.900									
Systems Engineering	RX	NAVY SYST MGT ACT, VA	69.731	67.724	03/09	45.312	03/10					
All Product Dev cost from program implementation thru FY04			128.796									

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Exhibit R-3 Cost Analysis								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N / BA-5			0604234N, ADVANCED HAWKEYE			3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Contractor Eng Sup ETS	VARIOUS	VARIOUS	6.236	1.945	12/08	1.503	12/09					
Contractor Eng Sup ETS	C-CPFF	WYLE LABS, AL	15.832	3.412	12/08	3.256	12/09					
Contractor Eng Sup ETS	C-CPFF	BEARING POINT, MD	2.105	0.737	12/08	0.856	12/09					
Development Support	RX	NAVY SYST MGT ACT, VA	10.267									
Development Support	VARIOUS	VARIOUS	8.125	0.256	VARIOUS	0.375	VARIOUS					
Government Eng Sup	WX	NAWCAD, PAX RIVER MD	57.353	16.942	11/08	9.169	11/09					
Government Eng Sup	WX	NAWCTSD, ORLANDO FL	4.993	1.507	11/08	1.908	11/09					
Government Eng Sup	VARIOUS	VARIOUS	7.004	1.832	VARIOUS	1.549	VARIOUS					
Government Eng Sup	WX	NAWCAD, LAKEHURST NJ	1.587	1.027	11/08	0.856	11/09					
Software Development	WX	NAWCAD, PAX RIVER MD	1.087									
Software Development	SS-CPAF	NGC NY				16.167	05/10					
Integrated Logistics Sup	MIPR	DEFENSE TECH INFO CTR	0.087									
Integrated Logistics Sup	VARIOUS	VARIOUS	1.876	3.000	VARIOUS	1.759	VARIOUS					
Studies & Analyses	RX	NAVY SYST MGT ACT, VA	2.518									
Technical Data	VARIOUS	VARIOUS	0.133									
All Support cost from program implementation thru FY04			5.806									
Subtotal Support			125.009	30.658		37.398						
Remarks: Totals may not add due to rounding.												

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Exhibit R-3 Cost Analysis							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N / BA-5			0604234N, ADVANCED HAWKEYE			3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER MD	17.054	13.015	11/08	11.250	11/09					
Developmental Test & Evaluation	VARIOUS	VARIOUS	13.884	4.707	VARIOUS	3.526	VARIOUS					
Developmental Test & Evaluation	SS-FFP	STICHTING D, NEDERLANDSE	4.657									
Developmental Test & Evaluation	TBD	TBD				3.493	VARIOUS					
Developmental T&E ETS	C-CPFF	WYLE LABS, AL	4.380	2.176	12/08	1.985	12/09					
Developmental T&E ETS	VARIOUS	VARIOUS	0.614									
Developmental T&E ETS	C-FFP	L-3 COMMUNICATIONS, VA	2.482	0.356	12/08	0.423	12/09					
Oper Test & Eval	WX	NAWCAD, PAX RIVER MD	0.146									
Oper Test & Eval	VARIOUS	VARIOUS	1.217	0.350	VARIOUS	0.350	VARIOUS					
Test Assets	SS-CPAF	NGC NY	3.900									
All T&E cost from program implementation thru FY04			3.208									
Subtotal T&E			51.542	20.604		21.027						
Remarks: Totals may not add due to rounding.												
Contractor Engineering Support	VARIOUS	VARIOUS	12.188									
Contractor Engineering Spt NSMA	RX	NAVY SYST MGT ACT, VA	3.327									
Contractor Eng Support MSS	VARIOUS	VARIOUS	1.289	0.207	12/08	0.209	12/09					
Contractor Eng Support MSS	C-CPFF	WYLE LABS, AL	8.050	0.871	12/08	0.858	12/09					
Government Eng Support	WX	NAWCAD, PAX RIVER MD	8.303	0.918	11/08	2.932	11/09					
Government Eng Support	VARIOUS	VARIOUS	13.456	0.572	11/08	0.416	11/09					
Program Mgmt Support	VARIOUS	VARIOUS	0.273	0.312	11/08	1.060	11/09					
Travel	VARIOUS	VARIOUS	1.554	0.300	10/08	0.290	10/09					
All Mgmt cost from program implementation thru FY04			10.659									
Subtotal Management			59.099	3.180		5.765						
Remarks: Totals may not add due to rounding.												
Total Cost			2,910.219	482.355		364.557						
Remarks: Totals may not add due to rounding.												

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EXHIBIT R4, Schedule Profile													DATE:										
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME										
RDT&E,N / BA-5								0604234N, ADVANCED HAWKEYE					3051, E-2C RMP										
Fiscal Year	2008				2009				2010														
	1	2	3	4	1	2	3	4	1	2	3	4											
Acquisition Milestones							MSC △				OIPT △												
AHE System Development																							
SDD AHE Systems Installation																							
Test & Evaluation Milestones											DT/DT Assist - Pilot Production												
Development Test							DT/DT																
Operational Test		Operational Assessment #1									Operational Assessment #2												
Production Milestones							LRIP I CA △				LRIP II CA △												
Production Deliveries											2 a/c PP												

- DT/DT Assist in FY09 included efforts for weapon system development and air vehicle testing on SD&D #1 and SD&D #2 aircraft.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604245N, H-1 UPGRADES			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	4.452	3.772	32.830					
2279 4BW / 4BN Upgrade	4.452	3.772	32.830					
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, survivability enhancements, 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 include 168 AH-1W's converted to AH-1Z's, build 58 new AH-1Z's, remanufacture ten (10) H-1N helicopters and build 113 new UH-1Y models. Upgrades include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This upgrade 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 upgrade maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.								

R-1 SHOPPING LIST - Item No. 89

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604245N, H-1 UPGRADES

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
FY09 President's Budget:	3.531	3.795	3.955
FY10 President's Budget:	4.452	3.772	32.830
Total Adjustments	0.921	-0.023	28.875
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.013	
SBIR/STTR/FTT Assessments	0.021		
Program Adjustments	0.900		28.876
Rate/Misc Adjustments		-0.010	-0.001
Subtotal	0.921	-0.023	28.875

Schedule:

OPEVAL phase II completed May 2008 and was necessary due to technical issues with the Helmet Mounted Sight Display (HMSD) system and transitioning of EMD aircraft to the operational configuration. The OPEVAL Phase II test report was completed August 2008 and supported the 4Q FY08 MS-III decision on the UH-1Y and an additional phase of OPEVAL for the AH-1Z. A third phase of OPEVAL is planned for March 2010 to complete IOT&E on the AH-1Z. In addition, H-1 will begin a correction of deficiencies program in FY10. The correction of deficiencies will attempt to address issues discovered during OT and follow-on testing including improved TSS performance, structural life improvements to cuff/yokes, blade/fold improvements, survivability enhancements, and ship envelope expansion. Bi-annual System Configuration Set (SCS)

Technical:

Not applicable.

R-1 SHOPPING LIST - Item No. 89

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604245N, H-1 UPGRADES			PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	4.452	3.722	32.830					
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, survivability enhancements, 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 include 168 AH-1W's converted to AH-1Z's, build 58 new AH-1Z's, remanufacture ten (10) H-1N helicopters and build 113 new UH-1Y models. Upgrades include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This upgrade 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 upgrade maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604245N, H-1 UPGRADES	PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade		
B. Accomplishments/Planned Program				
Product Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	18.466	
RDT&E Articles Quantity				
Prime Contractor will perform product development efforts including survivability enhancements, completion and fatigue testing. Additional FY10 funding is for improvements to cuff/yokes, bladefold, and avionics upgrades.				
Support Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.463	1.022	5.991	
RDT&E Articles Quantity				
Conduct software development efforts to support development testing and address operational testing results.				
Test and Evaluation	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.540	0.100	2.928	
RDT&E Articles Quantity				
Conduct software development efforts to support design, development, integration of sensor processing technologies, and tactical decision tools to expand hardware and software capabilities.				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604245N, H-1 UPGRADES	PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade		
B. Accomplishments/Planned Program (Cont.)				
Program Management Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.589	0.650	2.295	
RDT&E Articles Quantity				
Software Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.860	2.000	3.150	
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 89

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME									
RDT&E, N / BA-5	0604245N, H-1 UPGRADES	2279 4BW / 4BN Upgrade									
C. OTHER PROGRAM FUNDING SUMMARY: <table> <thead> <tr> <th><u>Line Item No. & Name</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>BLI 017800, UH-1Y/AH-1Z</td> <td>416.824</td> <td>534.463</td> <td>835.357</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The USMC H-1 Upgrades is an ACAT 1D program which encompasses Engineering and Manufacturing Development of the new end-items prior to a production approval decision. The prime contract is a sole source to Bell Helicopter Textron, Inc.				<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	BLI 017800, UH-1Y/AH-1Z	416.824	534.463	835.357
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>								
BLI 017800, UH-1Y/AH-1Z	416.824	534.463	835.357								

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604245N, H-1 UPGRADES			2279 4BW / 4BN Upgrade							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
PRODUCT DEVELOPMENT													
GFE	SS-CPFF	Bell Helicopter Textron Inc.	24.708										
Primary Hardware Development	SS-CPFF	Bell Helicopter Textron Inc.	1,110.307			18.466	12/09						
Systems Engineering	VARIOUS	Various	3.810										
Systems Engineering	WX/PX	Various	74.674										
Primary Hardware Development	SS-CPFF	Various											
Subtotal Product Development			1,213.499	0.000		18.466							
Remarks:													
SUPPORT													
Development Support	WX/PX	Various	0.463	1.022	12/08	1.010	12/09						
Development Support	WX/PX	Various	14.487										
Integrated Logistics Support	WX/PX	Various	27.653										
Software Dev. Wpns Integration	WX/PX	NAWCAD, Pax River MD				0.900	12/09						
Software Dev. Wpns Integration	WX/PX	NAWCWD, China Lake CA	5.742	2.000	03/09	3.150	12/09						
Subtotal Support			48.345	3.022		5.060							
Remarks:													

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE, BA-5				PROGRAM ELEMENT 0604245N, H-1 UPGRADES				PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TEST AND EVALUATION														
Developmental Test & Evaluation	WX/PX	NAWCAD, Pax River MD		35.252	0.100	12/08	2.928	12/09						
Developmental Test & Evaluation	VARIOUS	Various		14.906										
Operational Test & Evaluation	WX/PX	Various		19.744			4.081	12/09						
Operational Test & Evaluation	WX/PX	Various		2.406										
Subtotal T&E							7.009							
Remarks:														
MANAGEMENT														
Contractor Engineering Support	C-FFP	Various		5.992	0.180	10/08	1.180	10/09						
Procurement Fees	VARIOUS	Various		0.005										
Program Management Support	C-FFP	Various		9.469	0.180	10/08	0.775	10/09						
SBIR Assessment	IPR/MIPR	DEF Contractor MGT CMD		0.072										
Travel	WX/PX	Various		3.630	0.290	10/08	0.340	10/09						
Subtotal Management							2.295							
Remarks:														
Total Cost							32.830							
Remarks:														

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EXHIBIT R4, Schedule Profile														DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME									
RDT&E, N / BA-5									0604245N, H-1 UPGRADES					2279 4BW / 4BN Upgrade									
Fiscal Year	2008				2009				2010														
	1	2	3	4	1	2	3	4	1	2	3	4					4	1	2	3	4	1	2
Acquisition Milestones				▲ MS III UH-1Y ★ IOC UH-1Y							MS III AH-1Z	△											
Test & Evaluation Milestones											OPEVAL Phase III												
Operational Test																							
Production Milestones																							
LRIP I FY 04																							
LRIP II FY 05																							
LRIP III FY 06																							
LRIP IV FY07																							
FRP FY08 / LRIP Z				▲ FRP (Lot 5)																			
FRP FY09 / LRIP Z					▲ FRP (Lot 6)																		
FRP FY10 / LRIP Z												△ FRP (Lot 7)											
Production Deliveries																							
																					</		

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT 0604245N, H-1 UPGRADES			PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Full Rate Production (FRP) Milestone III UH-1Y		4Q UH-1Y		4Q AH-1Z				
IOC		4Q UH-1Y						
Operational Evaluation (OPEVAL PHASE II)		2Q-4Q						
Operational Evaluation (OPEVAL PHASE III)				2Q-4Q				
Low-Rate Initial Production I Delivery		1Q						
Low-Rate Initial Production II Delivery		1Q-3Q						
Low-Rate Initial Production III Delivery		3Q-4Q	1Q					
Low-Rate Initial Production IV Delivery			2Q-4Q					
Full Rate Production Start		4Q	2Q	2Q				
Full Rate Production (FRP) Delivery				1Q-4Q				

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY							May 2009	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5							R-1 ITEM NOMENCLATURE	
							0604261N, ACOUSTIC SEARCH SENSORS	
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Total PE Cost		18.742	39.345	56.369				
0480 ASW SENSORS & PROC		17.957	39.345	41.101				
3224 HIGH ALTITUDE ASW FOR P-8				15.268				
9999 CONGRESSIONAL ADDS		.785						

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

0480. The ASW Sensors and Processing project provides the tools and methods necessary to maintain naval 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) phase and the follow on increment of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) platforms in 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 overcome the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project 0480 provides funding to the Extended Echo Ranging (EER) family of multi-static active ASW systems for the engineering development of solutions that detect, classify, and track threat submarines. Efforts funded during the period identified are for the Advanced EER (AEER) program which started in FY08, including the development of an active coherent (electronic) source sonobuoy, ECP modifications to the existing Air Deployable Active Receiver (ADAR) sonobuoy, development, integration, and test of aircraft avionics software, and upgrades to the multi-static mission planning tool, the Tactical Operational Readiness Trainer (TORT) and the Tactical Ground Replay System. AEER provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training, and Rules of Engagement restrictions. Project 0480 also provides funding for the Advanced Processing Builds (APB) which provide signal processing improvements to achieve increased target detection and classification capabilities. APB also includes efforts for providing common software and hardware solutions across all ASW platforms. Also included in this project is funding to conduct testing for safe carriage and release for P-3 flight certification of the Acoustic to RF (A2RF) Air variant communications buoy in support of the PMW-770 Communications at Speed and Depth (CSD) program for underwater communications with a submerged submarine.

3224. The objective of this project is for the engineering development and integration of sensor system improvements along with expanded environmental sensing and mission planning tools enabling ASW aircraft greater operational flexibility and effectiveness at high altitudes. Efforts being funded during the period identified for system development and integration are GPS and Digital Uplink modifications to current sonobuoys and a tactical atmospheric sensor (dropsonde) along with additions to current mission planning tools (MPTs). The GPS in Buoy modification will provide precise sonobuoy location regardless of aircraft altitude/location to enhance tracking, fixing and targeting. The Digital Uplink modification will improve sonobuoy communications performance at altitude in high Radio Frequency Interference (RFI) littoral environments, increase channel availability, and provide NATO compatibility. The tactical dropsonde development will provide the capability to conduct real time measurement of in situ atmospheric data (wind, speed, direction, temperature, humidity, etc.) that will be linked real time to the aircraft. The modified MPT software will use this in situ data to provide more accurate tactical decision aids to the operators to optimize high altitude sensor and weapon employment. The lead platform for integration is the P-8A.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		May 2009
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0604261N, ACOUSTIC SEARCH SENSORS

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2008	FY 2009	FY 2010
Previous President's Budget	18.658	45.790	39.042
Current BES Budget	18.742	39.345	56.369
Total Adjustments	0.084	-6.445	17.327

Summary of Adjustments			
Congressional Recissions			
Congressional Adjustments		-6.337	
SBIR/STTR/FTT Assessments	0.121		
Program Adjustments	-0.037		17.340
Rate/Misc Adjustments		-0.108	-0.013
Subtotal	0.084	-6.445	17.327

Schedule: 0480 - Multi Static Active (Impulsive). For clarification, renamed MSA Integration Contract to MSA Increment 1 Fleet Release and moved from 1Q/08 to 3Q/08 due to delays experienced during DT and OT. Renamed APB (1), APB (2), APB (3) and APB (4) Integration Contract to Fleet Release. Moved APB (1) SQT from 2Q/08 to 4Q/08, APB (1) S/W Release from 4Q/08 to 2Q/09, and APB (1) Fleet Release from 1Q/09 to 3Q/09 due to delays experienced during MSA DT & OT. Due to a \$6.0M reduction in Software Development Phase II for Program Growth (Issue 74056), the APB (1) software was tested and released as scheduled, however, it did not include software development, integration, testing, and training for MSA (Impulsive) increment 2 as planned.

Multi-Static Active (Coherent). Moved Commence S/W and H/W Integration Flt Test (Inc 1) from 4Q/10 to 3Q/10 and removed MS B (Inc 2) to match the approved Acquisition Strategy Review (ASR). In the note section of R4, changed Block builds to Incremental builds. Changed Block 1 to Increment 1 and Block 2 to Increment 2.

Communications at Speed and Depth (CSD) - A2RF - Air. Schedule added to reflect P-3 participation in CSD Increment 1 program (PMW-770) DT/OT.

3224. Schedule added for Sonobuoy GPS and Digital Uplink Mods and Dropsonde and Mission Planning Tools (MPT) to reflect development and

Technical:
0480 - N/A
3224 - N/A

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EXHIBIT R-2a, RDT&E Project Justification							DATE:		
							May 2009		
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 2008	FY 2009	FY 2010					
0480 ASW SENSORS & PROC		17.957	39.345	41.101					
RDT&E Articles Qty				1530					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The ASW Sensors and Processing project provides the tools and methods necessary to maintain naval 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) phase and the follow on increment of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) platforms in 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 overcome the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project 0480 provides funding to the Extended Echo Ranging (EER) family of multi-static active ASW systems for the engineering development of solutions that detect, classify, and track threat submarines. Efforts funded during the period identified are for the Advanced EER (AEER) program which started in FY08, including the development of an active coherent (electronic) source sonobuoy, ECP modifications to the existing Air Deployable Active Receiver (ADAR) sonobuoy, development, integration, and test of aircraft avionics software, and upgrades to the multi-static mission planning tool, the Tactical Operational Readiness Trainer (TORT) and the Tactical Ground Replay System. AEER provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training, and Rules of Engagement restrictions. Project 0480 also provides funding for the Advanced Processing Builds (APB) which provide signal processing improvements to achieve increased target detection and classification capabilities. APB also includes efforts for providing common software and hardware solutions across all ASW platforms. The 1530 sonobuoy test articles in FY10 will support software and hardware integration flight tests and Technical Evaluation (TECHEVAL)/Operational Evaluation (OPEVAL) for AEER Phase 1 and Phase 2 respectively. Also included in this project is funding to conduct testing for safe carriage and release for P-3 flight certification of the Acoustic to RF (A2RF) Air variant communications buoy in support of the PMW-770 Communications at Speed and Depth (CSD) program for underwater

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
			May 2009
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	

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Completed MSA DT & OT / Deliver IEER (2)	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost	7.957	2.060	9.049
RDT&E Articles Qty			

APB funds for software development, integration, and test for Multi-Static ASW (MSA) sensor systems. Provides P-3 platform integration of multi-static technology improvements allowing increased weapon system efficiency and decreased fleet operator workload in the littoral ASW mission. Due to a \$6.0M reduction in Software Development Phase II for Program Growth (Issue 74056), the APB (1) software was tested and released as scheduled, however, it did not include software development, integration, test, and training for MSA (Impulsive) increment 2 as planned.

Commence AEER / Deliver AEER Phase 1	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost	10.000	37.285	29.052
RDT&E Articles Qty			1500

Continue to develop a coherent source that will satisfy the search and localization requirement in the harsh, shallow water littorals.

Comms at Speed and Depth/DT/OT Support	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost			3.000
RDT&E Articles Qty			30

A2RF-Air Variant test articles, and support during DT/OT. P-3 participation in the CSD Increment 1 Program (PMW-770) for flight hour cost,

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		May 2009
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. OTHER PROGRAM FUNDING SUMMARY: FY 2008 FY 2009 FY 2010

(U) OPN (404800) AN/SSQ-125

D. ACQUISITION STRATEGY:

The development and integration of Multi-Static ASW (MSA) using coherent source technology into the P-3 Aircraft. Various alternatives of MSA implementation are also being investigated that could require Full and Open competition.

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Exhibit R-3 Cost Analysis (page 1)									DATE: May 2009				
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 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
PRODUCT DEVELOPMENT													
Primary Hdw Development	VARIOUS	VARIOUS	4.500	7.500	10/08	4.900	10/09						
SUBTOTAL PRODUCT DEVELOPMENT			4.500	7.500		4.900							

Remarks:

SUPPORT												
Software Development (Phase II)	WX	NAWCAD, PATUXENT RIVER, MD	8.795	1.473	10/08	3.315	10/09					
Software Development (Phase II)	VARIOUS	VARIOUS		4.055	10/08	6.302	10/09					
Studies & Analyses	WX	NAWCAD, PATUXENT RIVER, MD	4.931	4.524	10/08	3.919	10/09					
Technical Data	WX	NAWCAD, PATUXENT RIVER, MD	8.229	.500	10/08	1.000	10/09					
SUBTOTAL SUPPORT			21.955	10.552		14.536						

Remarks:

TEST & EVALUATION												
Dev Test & Eval		NAWCAD, PATUXENT RIVER, MD	6.100	3.500	11/08	5.000	11/09					
SUBTOTAL TEST & EVALUATION			6.100	3.500		5.000						

Remarks:

MANAGEMENT												
Contractor Eng Sup (APB)	VARIOUS	VARIOUS	13.809	6.290	11/08	4.908	11/09					
ENG & TECH SUPPT SRVC (NON-FFRDC)	VARIOUS	VARIOUS	42.873	1.285	11/08	1.074	11/09					
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER, MD	69.610	10.118	10/08	10.583	10/09					
MGT & PROF SUPPT SRVC (FFRDC)	VARIOUS	VARIOUS	8.864	.100	11/08	.100	11/09					
SUBTOTAL MANAGEMENT			135.156	17.793		16.665						

Remarks:

Total Cost			167.711	39.345		41.101						

Remarks:

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EXHIBIT R4, Schedule Profile Multi-Static Active (Impulsive)											DATE: May 2009																	
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														
Fiscal Year	FY 2008				FY 2009				FY 2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones	MSA Increment 1 Fleet Release								APB (1) Fleet Release																			
Prototype Phase																												
System Development																												
EDM Delivery																												
Software Development/Integration				APB (1) S/W release								APB (2) S/W RELEASE																
Test & Evaluation Milestones	APB (1) SQT																								APB (2) SQT			
Development Test																												
Operational Test																												
Production Milestones																												
Deliveries																												

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EXHIBIT R4, Schedule Profile Multi-Static Active (Coherent)												DATE: May 2009													
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															
Fiscal Year	FY 2008				FY 2009				FY 2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
Acquisition Milestones					MS B △								MS C △												
	Pre MS B Prep																								
System Development Localization									CDR (Inc 1) △																
EDM Delivery											H/W EDM (Inc 1) △														
Software Integration						Integration S/W Delivery (Inc 1)									△										
Test & Evaluation Milestones																									
														Commence S/W and H/W Integrated Flt Test (Inc 1) △											
Development Test																									
Operational Test																									
Production Milestones																									

Note: AEER, is a spiral upgrade development effort that commenced in 1Q/08 consisting of two incremental builds. Increment 1 is to develop and produce a Coherent Source buoy to provide a multi-static active localization system capability. Increment 2 will increase the source level and provide a large area search capability.

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EXHIBIT R4, Schedule Profile Communications at Speed and Depth (CSD) - A2RF - Air												DATE: May 2009				
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				
Fiscal Year	FY 2008				FY 2009				FY 2010							
	1	2	3	4	1	2	3	4	1	2	3	4				
Test & Evaluation A2RF - Air										DT △	OA △					

Note: A2RF-Air Variant test articles, and support during DT/OT. P-3 participation in the CSD Increment 1 Program (PMW-770) for flight hour cost,

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS			PROJECT NUMBER AND NAME 3224, HIGH ALTITUDE ASW FOR P-8				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
3224 HIGH ALTITUDE ASW FOR P-8				15.268					
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The objective of this project is for the engineering development and integration of sensor system improvements along with expanded environmental sensing and mission planning tools enabling ASW aircraft greater operational flexibility and effectiveness at high altitudes. Efforts being funded during the period identified for system development and integration are GPS and Digital Uplink modifications to current sonobuoys and a tactical atmospheric sensor (dropsonde) along with additions to current mission planning tools (MPTs). The GPS in Buoy modification will provide precise sonobuoy location regardless of aircraft altitude/location to enhance tracking, fixing, and targeting. The Digital Uplink modification will improve sonobuoy communications performance at altitude in high Radio Frequency Interference (RFI) littoral environments, increase channel availability, and provide NATO compatibility. The tactical dropsonde development will provide the capability to conduct real time measurement of in situ atmospheric data (wind, speed, direction, temperature, humidity, etc) that will be linked real time to the aircraft. The modified MPT software will use this in situ data to provide more accurate tactical decision aids to the operators to optimize high altitude sensor and weapons employment. The lead platform for integration is the P-8A.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-5	0604261N, ACOUSTIC SEARCH SENSORS	3224, HIGH ALTITUDE ASW FOR P-8

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Provide precision delivery of sonobuoys	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost			15.268
RDT&E Articles Qty			

This effort supports development of modifications to current production sonobuoys, development of a tactical dropsonde capability, and development of mission planning tools software to enhance the P-8A high altitude ASW capability.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS	PROJECT NUMBER AND NAME 3224, HIGH ALTITUDE ASW FOR P-8	

C. OTHER PROGRAM FUNDING SUMMARY:

Not Applicable.

D. ACQUISITION STRATEGY:

Various sole source and/or competitive contracts to sonobuoy vendors to develop modifications to existing sonobuoys for incorporation of GPS and Digital Uplink capabilities. Various sole source and/or competitive contracts to develop tactical dropsonde expendable hardware, software, and link to aircraft. P-8A prime integrator will perform aircraft software integration to implement new sonobuoy capabilities and real time use of dropsonde environmental information.

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E,N / BA-5		0604261N, ACOUSTIC SEARCH SENSORS				3224, HIGH ALTITUDE ASW FOR P-8					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date				
PRODUCT DEVELOPMENT											
Primary Hdw Development	VARIOUS	VARIOUS				9.035	Various				
SUBTOTAL PRODUCT DEVELOPMENT						9.035					

Remarks:

SUPPORT											
Program Documentation	VARIOUS	VARIOUS				.295	Various				
Studies and Analysis	VARIOUS	VARIOUS				1.150	Various				
A/C Software Integration	VARIOUS	VARIOUS				3.000	Various				
Tech Data	WX	NAWCAD, PATUXENT RIVER, MD									
SUBTOTAL SUPPORT						4.445					

Remarks:

TEST & EVALUATION											
Dev Test & Eval	VARIOUS	VARIOUS				.100	Various				
SUBTOTAL TEST & EVALUATION						.100					

Remarks:

MANAGEMENT											
Contractor Eng Sup	VARIOUS	VARIOUS				.500	10/09				
ENG & TECH SRVC (NON-FFRDC)	VARIOUS	VARIOUS				.140	10/09				
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER, MD				.818	10/09				
Travel	T0	TBD				.230	10/09				
SUBTOTAL MANAGEMENT						1.688					

Remarks:

Total Cost						15.268					

Remarks:

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EXHIBIT R4, Schedule Profile HAASW (Sonobuoy GPS and Digital Uplink Mods)												DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5						PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS						PROJECT NUMBER AND NAME 3224, HIGH ALTITUDE ASW FOR P-8
Fiscal Year	FY 2008				FY 2009				FY 2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones Sonobuoy GPS/Digital Uplink Mods											△ MS-B	
System Development Sonobuoy GPS/Digital Uplink Mods											H/W Sys Dev △ GPS/Uplink Sonobuoy Modification Contract	
Test Article Delivery Sonobuoy GPS/Digital Uplink Mods												
Software Development/Integration Sonobuoy GPS/Digital Uplink Mods									A/C S/W Dev/Int		△	
Test & Evaluation Sonobuoy GPS/Digital Uplink Mods									GPS/Uplink Sonobuoy Modification Contract			
Production Sonobuoy GPS/Digital Uplink Mods												
Deliveries Sonobuoy GPS/Digital Uplink Mods												

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Exhibit R-4a

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile HAASW (Dropsonde and MPT)												DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5						PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS						PROJECT NUMBER AND NAME 3224, HIGH ALTITUDE ASW FOR P-8	
Fiscal Year	FY 2008				FY 2009				FY 2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones Dropsonde and MPT											△ MS-B		
System Development Dropsonde and MPT					Dropsonde Hardware System Development						△		
											Dropsonde H/W Contract		
Test Article Delivery Dropsonde and MPT													
Software Development/Integration Dropsonde and MPT													
Test & Evaluation Dropsonde and MPT													
Production Contract Award Dropsonde and MPT													
Deliveries Dropsonde and MPT													

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009													
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 2008	FY 2009	FY 2010															
9999 Congressional Adds			.785																	
RDT&E Articles Qty																				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 9999. Congressional Adds.																				
B. ACCOMPLISHMENTS / PLANNED PROGRAM: Evaluate the ASW capability of the Deep Extended Echo Ranging System <table border="1"> <tr> <td>9C07A</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>.785</td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </table> Deep Extended Echo Ranging (DEER) system. Evaluate the Anti-Submarine Warfare (ASW) capability of the Deep Extended Echo Ranging system which is employed in deep water environments where the Reliable Acoustic Path is present. This effort is consistent with the Navy's objective to provide a rapid search and area clearance capability.									9C07A	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	.785			RDT&E Articles Qty			
9C07A	FY 2008	FY 2009	FY 2010																	
Accomplishments / Effort / Sub-total Cost	.785																			
RDT&E Articles Qty																				

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:		May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604262N, V-22A				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	
Total PE Cost	125.157	71.948	89.512						
1425 V-22	125.157	71.948	89.512						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development (EMD) for correction of deficiencies and includes Block A and Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision. Block C suitability and effectiveness development upgrades began in FY06. The FY08 OCO funding provided is for the initial development of an all quadrant Defensive Weapons System (DWS). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. The funding presented represents the cost to begin development of this issue and will be executed in fiscal year 2009. The FY09 OCO funding provided is for the development of the Landing Gear Bay Fire Suppression System. The additional funding provided in FY10 addresses Capability Development Document (CDD) interoperability requirements through a spiral upgrade acquisition strategy. These funds are the first spiral that provides Key Enabling DoD mandated open systems architecture (MOSA) upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Development efforts include Mission System Upgrade, Midwing Processing Unit and ARC 210 Generation 5 Radio.									

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604262N, V-22A																																													
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Funding:</th> <th style="text-align: right; width: 15%;">FY08</th> <th style="text-align: right; width: 15%;">FY09</th> <th style="text-align: right; width: 15%;">FY10</th> </tr> </thead> <tbody> <tr> <td>FY09 President's Budget:</td> <td style="text-align: right;">115.477</td> <td style="text-align: right;">68.763</td> <td style="text-align: right;">26.652</td> </tr> <tr> <td>FY10 President's Budget:</td> <td style="text-align: right;">125.157</td> <td style="text-align: right;">71.948</td> <td style="text-align: right;">89.512</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">9.680</td> <td style="text-align: right; border-top: 1px solid black;">3.185</td> <td style="text-align: right; border-top: 1px solid black;">62.860</td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left; padding-left: 20px;">Summary of Adjustments</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Adjustments</td> <td style="text-align: right;">12.901</td> <td style="text-align: right;">3.371</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">SBIR/STTR/FTT Assessments</td> <td style="text-align: right;">-0.985</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Program Adjustments</td> <td style="text-align: right;">-2.236</td> <td></td> <td style="text-align: right;">62.863</td> </tr> <tr> <td style="padding-left: 20px;">Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-0.186</td> <td style="text-align: right;">-0.003</td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">9.680</td> <td style="text-align: right; border-top: 1px solid black;">3.185</td> <td style="text-align: right; border-top: 1px solid black;">62.860</td> </tr> </tbody> </table> Schedule: The R-4 reflects updates made to the Integrated Master Schedule as a result of adjustments to contract award dates for the Block C development efforts. Block C Increment III was awarded in January 2008. Technical evaluations and flight test periods for this effort were also annotated. Technical: Not applicable			Funding:	FY08	FY09	FY10	FY09 President's Budget:	115.477	68.763	26.652	FY10 President's Budget:	125.157	71.948	89.512	Total Adjustments	9.680	3.185	62.860	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments	12.901	3.371		SBIR/STTR/FTT Assessments	-0.985			Program Adjustments	-2.236		62.863	Rate/Misc Adjustments		-0.186	-0.003	Subtotal	9.680	3.185	62.860
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R-1 SHOPPING LIST - Item No. 91

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22A			PROJECT NUMBER AND NAME 1425 / V-22			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	125.157	71.948	89.512					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development (EMD) for correction of deficiencies and includes Block A and Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision. Block C suitability and effectiveness development upgrades began in FY06. The FY08 OCO funding provided is for the initial development of an all quadrant Defensive Weapons System (DWS). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. The funding presented represents the cost to begin development of this issue and will be executed in fiscal year 2009. The FY09 OCO funding provided is for the development of the Landing Gear Bay Fire Suppression System. The additional funding provided i FY10 addresses Capability Development Document (CDD) interoperability requirements through a spiral upgrade acquisition strategy. These funds are the first spiral that provides Key Enabling DoD mandated open systems architecture (MOSA) upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Development efforts include Mission System Upgrade, Midwing Processing Unit and ARC 210 Generation 5 Radio.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22A	PROJECT NUMBER AND NAME 1425 / V-22	
B. Accomplishments/Planned Program			
Continued development of Blocks B/C	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	94.707	48.906	82.214
RDT&E Articles Quantity			
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, maintenance and flight training equipment, Weapons Repairable Assembly (WRA) and Test Program Set (TPS) development. Continue engineering, logistics, flight test, flight test support, address correction of deficiencies. Continue contracted development efforts on aircraft #8. Block C suitability and effectiveness upgrades began in FY06. The major components of Block C development are Forward Firing ALE-47 (Increment I), Environmental Control System (ECS) Upgrade (Increment II), and Weather Radar (Increment III). FY08 OCO funding will be placed on contract in FY 2009 for the development of a mission configurable, crew-served all quadrant Defensive Weapon System (DWS) as required in accordance with the programs Capabilities Development Document (CDD). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. FY09 OCO funding is for the development of the Landing Gear Bay Fire Suppression System. Planned development efforts for the provided interoperability funding in FY10 includes Mid-Wing Process Unit (MPU) , Mission System Upgrade to Advanced Mission Computer with a common Integrated Core Avionics Processor (ICAP), and the ARC-210 Generation 5 Radio. These development efforts address V-22 Net-Ready Key Performance Parameters (KPP) and CDD interoperability requirements while simultaneously addressing current avionics obsolescence issues.			
Continued support of Blocks B/C	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	30.450	23.042	7.298
RDT&E Articles Quantity			
Continue in-house field activity support of Integrated Test Team (ITT), Integrated Product Teams (IPT), engineering, 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, 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, power and propulsion, V-22 avionics, facilities management, structures, communications, Small Business Innovative Research, etc. Continue engineering, logistics, flight test, and flight test support, and addressed correction of deficiencies as required in support of the Flight Test Program, Block C and overall V-22 development upgrades. R&D support and planning for the Block C suitability and effectiveness upgrade which began in FY 06. Block C is the first post-full rate production decision upgrade to be executed. R&D support and planning for the DWS development and the interoperability development efforts begin in FY09.			

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																																					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME																																				
RDT&E, N / BA-5		0604262N / V-22A		1425 / V-22																																				
C. OTHER PROGRAM FUNDING SUMMARY: <table border="1"> <thead> <tr> <th><u>Line Item No. & Name</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>164000 / V-22</td> <td></td> <td></td> <td></td> </tr> <tr> <td>V-22 APN-1</td> <td>2,070.635</td> <td>2,213.853</td> <td>2,300.171</td> </tr> <tr> <td>V-22 APN-6 Spares</td> <td>53.799</td> <td>39.650</td> <td>35.475</td> </tr> <tr> <td>59000 / V-22</td> <td></td> <td></td> <td></td> </tr> <tr> <td>V-22 APN-5</td> <td>114.921</td> <td>43.181</td> <td>78.002</td> </tr> <tr> <td>Related RDT&E:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>0401318F CV-22</td> <td>23.417</td> <td>18.512</td> <td>19.640</td> </tr> <tr> <td>1160421BB CV-22</td> <td>22.739</td> <td>39.117</td> <td>12.687</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The MV-22 is currently in a post Milestone III ACAT-ID program. 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 cabin effectiveness suitability improvements, i.e., ECS and Forward Firing ALE-47. 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 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 terrain following radar, additional fuel tanks, additional radios, and Block 20 includes capabilities such as radio frequency and infrared countermeasures improvements. Additional Blocks are in planning to continue the growth process throughout the operational life of the weapon system.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	164000 / V-22				V-22 APN-1	2,070.635	2,213.853	2,300.171	V-22 APN-6 Spares	53.799	39.650	35.475	59000 / V-22				V-22 APN-5	114.921	43.181	78.002	Related RDT&E:				0401318F CV-22	23.417	18.512	19.640	1160421BB CV-22	22.739	39.117	12.687
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604262N, V-22A			1425, V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
PRODUCT DEVELOPMENT												
CV-22 Develop Support Equipment	Various	Various	13.563									
CV-22 Hardware Dev Airframe	SS-CPAF	Boeing Co., Ridley Park, PA	916.978									
CV-22 Hardware Dev Propulsion	C-CPIF	Rolls-Royce Corp., Indy, IN	12.391									
MV-22 Develop Support Equipment	Various	NAWCAD, Lakehurst, NJ	5.691									
MV-22 Develop Support Equipment	C-CPIF	Boeing Co., Ridley Park, PA	43.924									
MV-22 Hardware Dev Airframe	SS-CPAF	Boeing Co., Ridley Park, PA	3,899.446	47.985	01/09	79.894	01/10					
MV-22 Hardware Dev Propulsion	C-CPIF	Rolls-Royce Corp., Indy, IN	192.435	0.921	01/09	2.320	01/10					
MV-22 Training Development	Various	Various	23.538									
Subtotal Product Development			5,107.966	48.906		82.214						
Remarks: Total award fee pool available for MV and CV combined is \$231,581,626. To date \$209,053,038 has been awarded for a percentage of 90.3 percent. Award Fee included in MV-22 Primary Hardware Development Airframe line. Dollars may not add due to rounding.												
SUPPORT												
CV-22 Gov't Engineering Sppt	WX	NAWCAD, Pax River, MD	21.803									
CV-22 Integrated Log Sppt	Various	Various	8.395									
CV-22 Technical Data	C-CPIF	Boeing Co., Ridley Park, PA	8.035									
CV-22 Technical Data	WX	NATEC, San Diego, CA	6.131									
MV-22 Gov't Engineering Sppt	WX	NAWCAD, Pax River, MD	1,097.678	1.918	11/08	0.092	11/09					
MV-22 Integrated Log Sppt	Various	Various	28.818									
MV-22 Technical Data	C-CPIF	Boeing Co., Ridley Park, PA	116.536									
Subtotal Support			1,287.396	1.918		0.092						
Remarks: Dollars may not add due to rounding.												

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604262N, V-22A			1425, V-22							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TEST & EVALUATION													
CV-22 Dev Test & Evaluation	MIPR	Edwards AFB, CA	46.564										
MV-22 Dev Test & Evaluation	WX	NAWCAD, Pax River, MD	961.431	14.813	11/08	5.395	11/09						
MV-22 Live Fire Test & Evaluation	WX	NAWCWD, China Lake, CA	1.636										
MV-22 Operational Test & Evaluation	WX	OT&E Force, Norfolk, VA	41.192	1.850	11/08	0.517	11/09						
Subtotal T&E			1,050.823	16.663		5.912							
Remarks: Dollars may not add due to rounding.													
MANAGEMENT													
CV-22 Engineering Tech Sppt	Various	Various	12.489										
CV-22 Management Sppt Serv	Various	Various	12.511										
CV-22 Program Mgmt Support	WX	NAWCAD, Pax River, MD	9.830										
CV-22 Travel	WX	NAWCAD, Pax River, MD	4.682										
MV-22 Engineering Tech Sppt	Various	Various	1,044.355	0.822	11/08	0.736	11/09						
MV-22 Management Sppt Serv	Various	Various	151.955	1.976	11/08	0.325	11/09						
MV-22 Studies and Analysis	Various	Various	1.244										
MV-22 Program Mgmt Support	WX	NAWCAD, Pax River, MD	52.860	1.038	11/08	0.010	11/09						
MV-22 Travel	WX	NAWCAD, Pax River, MD	14.453	0.625	11/08	0.224	11/09						
Subtotal Management			1,304.380	4.461		1.295							
Remarks: Dollars may not add due to rounding.													
Total Cost			8,750.565	71.948		89.512							
Remarks: Dollars may not add due to rounding.													

R-1 SHOPPING LIST - Item No. 91

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5						PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22						PROJECT NUMBER AND NAME H1425, V-22	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones					CV-22 IOC ★								
Engineering Milestones													
Block C Increments I & II				PDR ▲		CDR ▲							
Block C Increments III				SRR ▲		PDR ▲		CDR △					
Test & Evaluation Milestones													
Development Test	CV-22 IOT&E								Block C Increments I, II, and III Development Flight Test				
Operational Test													
Production Deliveries													

R-1 SHOPPING LIST - Item No. 91

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 91

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604264N AIRCREW SYSTEMS DEVELOPMENT			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	23.272	15.985	14.265					
0606 AIRCREW SYSTEMS DEVELOPMENT	23.272	15.985	14.265					

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: night vision capability, head protection, communications, clothing, 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-2, RDT&E Budget Item Justification

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5

0604264N, AIRCREW SYSTEMS DEVELOPMENT

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	23.749	16.192	13.630
Current BES Budget	23.272	15.985	14.265
Total Adjustments	-0.477	-0.207	0.635

Summary of Adjustments

Congressional Recissions			
Congressional Adjustments		-0.163	
SBIR/STTR/FTT Assessments	-0.194		
Program Adjustments	-0.283		0.642
Rate/Misc Adjustments		-0.044	-0.007
Subtotal	-0.477	-0.207	0.635

Schedule:

Minor programs with small amounts of funding were deleted from schedule for clarity. Important changes are as follows:

	FROM	TO	REASON
1. Acquisition Milestone Changes:			
a. AE - MS B	1Q08	4Q08	Delay in Acquisition Decision due to awaiting requirements letter.
b. AE - CDR	3Q09	4Q09	Delay in Acquisition Decision due to awaiting requirements letter.
c. AE - MSC	4Q09	1Q11	Delay in Acquisition Decision due to awaiting requirements letter.
d. AE - FRP	4Q10	1Q11	Delay in Acquisition Decision due to awaiting requirements letter.
e. CMARS - MSB	2Q08	3Q09	Aligned to coincide with current acquisition strategy
f. CMARS - PDR	3Q08	1Q10	Aligned to coincide with current acquisition strategy
g. CMARS - CDR	2Q09	1Q10	Aligned to coincide with current acquisition strategy
2. Test and Evaluation Changes:			
a. AE - DT	2Q08 - 3Q10	3Q08 - 3Q10	Delay in Acquisition Decision for contract award.
b. CMARS - DT/OT	4Q08-1Q10	3Q10-4Q10	Aligned to coincide with current acquisition strategy and refinement of T&E requirements.
c. JHMCS NVCD - DT/OT	1Q07 - 4Q09	1Q07 - 2Q11	Aligned JHMCS NVCD with JHMCS JPO program slip.
d. LEP - DT	2Q08 - 3Q09	3Q09 - 1Q10	Delay in Acquisition Decision for contract award.
e. FDC - DT	1Q09 - 3Q09	4Q08 - 4Q09	Realigned component and system level test requirements.
3. Production Milestone Changes:			
a. AE - DEL	2Q09 - 4Q12	2Q09 - 4Q15	Delay in Acquisition Decision for contract award and product requirements.
b. CMARS - DEL	4Q11 - 4Q13	3Q09 - 4Q15	Realigned with multiple platforms modification schedule.
c. JHMCS NVCD - DEL	4Q08-4Q13	1Q11-4Q15	Delay in Acquisition Decision for contract award.

Technical: N/A

EXHIBIT R-2a, RDT&E Project Justification							DATE:		May 2009	
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 2008	FY 2009	FY 2010					
0606 AIRCREW SYSTEMS DEVELOPMENT			23.272	15.985	14.265					
RDT&E Articles Qty			N/A							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
AIRCREW SYSTEMS: Aircrew Endurance (AE), Laser Eye Protection (LEP), Flight Deck Cranial (FDC), Joint Helment Mounted Cueing System (JHMCS), Night Vision Cueing and Display (NVCD), Wide Field of View (WFOV), Aircrew Systems (AS),

AIRCREW SYSTEMS: AE includes Survival Vests & Armor, and Universal Camouflage. LEP includes Joint Service Advanced Aircrew Laser Eye Protection Visor (JALEPV), Agile Frequency Laser Eye Protection (AFLEP), and Laser Eye Protection Improvement Program (LEPIP). FDC includes Improved Hearing Protection. JHMCS NVCD includes JHMCS Night Attack. WFOV includes Ejection (Non-JHMCS) WFOV Night Vision Goggles (NVG), and Non-Ejection WFOV NVG. AS includes State of the Art (SOA), Waste Management, Hydration, Common Helmet, Advanced Helmet Vision System, Hearing Protection, and Hypoxia Awareness.

AIRCRAFT SYSTEMS: Escape System Injury Reduction Program (ESIRP), Common Mobile Aircrew Restraint System (CMARS), and Aircraft Systems (ACS)

AIRCRAFT SYSTEMS: ESIRP includes aircrew endurance modifications for F/A-18 aircraft. CMARS includes a retractor system for rotary wing aircraft. Aircraft Systems include studies for Advanced Crash Protection (ACP), Crashworthy Troop Seats (CWTS), and Seat Endurance (SE) for non-ejection seat aircraft.

B. Accomplishments/Planned Program

IMPROVED AIRCREW ENDURANCE	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	9.321	12.285	11.672	
RDT&E Articles Quantity	N/A			

AIRCREW MOUNTED SYSTEMS:

AE: Survival Vest and Armor - Upgrading the vest and armor to reduce weight and bulk through new materials, revised design, new survival items, updating survival items carried for improved capability in current theaters of operations

AE: Universal Camouflage - Development and approval of a universal color for ALSS equipment that allows mission deployment to multiple terrain conditions without the need to obtain equipment in different colors.

LEP: JALEPV - Develop and procure LEP that provides fixed wavelength self/hazard and/or threat protection. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation.

LEP: AFLEP - Develop and procure LEP that provides frequency agile wavelength self/hazard and threat protection. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation.

LEP: LEPIP - Develop and procure LEP Spirals that provides self/hazard and/or threat protection. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation.

FDC - Develop and procure an integrated modular FDC that provides improved impact protection, hearing, communications, and speech intelligibility. Units will be used to conduct laboratory/flight deck testing, fleet verification, and system evaluation.

FDC: Improved Hearing Protection - Develop and procure improved hearing protection for aircrew and flight deck personnel. Units will be used to conduct laboratory/flight deck testing, fleet verification, and system evaluation.

JHMCS NVCD - Continue the joint USAF/USN developmental flight test of the JHMCS NVCD system. Conduct laboratory testing, development testing, aircraft system integration testing, and operational test and evaluation.

WFOV: Non-JHMCS WFOV NVG - Develop and procure WFOV NVG for ejection seat NVG platforms that are non-JHMCS equipped. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation.

WFOV: Non-Ejection WFOV NVG - Develop and procure WFOV NVG for non-ejection seat NVG platforms. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation.

AS: SOA - Continued evaluation and authorization of state of the art survival and clothing items.

AS: Waste Management - Testing and approval of Mission Extender Device to allow bladder relief without removal of seat safety harness and equipment.

AS: Hydration - Integration of water reservoirs and filtration systems with ALSS equipment.

AS: Common Helmet - Develop and procure a common aircrew integrated day/night all weather modular helmet system. Units will be used to conduct laboratory/ground/aircraft testing, fleet verification, and system evaluation

AS: Advanced Helmet Vision System: Develop Advanced Helmet Vision System incorporating displays, night vision, and cueing

AS: Hypoxia Awareness: Develop and procure integrated Hypoxia awareness capability alerting aircrew. Units will be used to conduct laboratory/ground/aircraft testing and system evaluation

CLASSIFICATION:**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
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 (Cont.)

ENHANCED AIRCRAFT SAFETY SYSTEMS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	13.951	3.700	2.593	
RDT&E Articles Quantity	N/A			

AIRCRAFT SYSTEMS:

ESIRP: Continuing fleet assessment of aircrew endurance modifications for F/A-18 aircraft and develop ECP.

CMARS: Leverages existing technology and integrates webbing retractor system into all front line rotary wing aircraft. Design also includes new AIRSAVE aircrew interface. Developmental testing continues for new aircrew mounted interface.

ACS: Seat Endurance: New generation of endurance systems to be retrofit in front line "non-ejection seat" equipped aircraft.

ACS: Advanced Crash Protection-continue studies and development on advanced crash protection.

ACS: Crashworthy Troop Seats: continue feasibility study and development of improving crashworthiness of troop seats on rotary aircraft

ACS: Oxygen Systems: system development and improvement

C. OTHER PROGRAM FUNDING SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Aviation Life Support - OPN 424400	17.912	21.609	45.250
Aviation Life Support Mods - APN 057500	4.132	1.984	5.594

D. ACQUISITION STRATEGY:

Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts. Majority of programs non-Acat programs.

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CLASSIFICATION:

UNCLASSIFIED

DATE:

May 2009

Exhibit R-3 Cost Analysis (page 1)

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 09	FY 09 Award	FY 10	FY 10 Award					
Systems Eng AIRCREW ENDURANCE	WX	VARIOUS	1.876	1.870	12/08	1.920	03/10					
Systems Eng LEP	WX	NAWCAD, PAX RIVER	1.250	1.450	12/08	1.157	03/10					
Systems Eng LEP	TBD	TBD	0.647	0.600	12/08	0.575	03/10					
Systems Eng FLIGHT DECK CRANIAL	WX	NAWCAD, PAX RIVER	1.100	0.600	12/08	1.000	03/10					
Systems Eng FLIGHT DECK CRANIAL	TBD	TBD	0.250	1.800	12/08	2.112	03/10					
Systems Eng JHMCS NVCD	WX	VARIOUS	4.151	1.388	12/08	0.762	03/10					
Systems Eng JHMCS NVCD	TBD	TBD		1.014	12/08	0.343	03/10					
Systems Eng WFOV	WX	VARIOUS		0.437	12/08	0.312	03/10					
Systems Eng WFOV	TBD	TBD		0.300	12/08	0.604	03/10					
Systems Eng AIRCREW SYSTEMS	WX	VARIOUS	2.080	1.145	12/08	1.560	03/10					
Systems Eng CMARS	TBD	TBD	5.127	0.849	06/09							
Systems Eng CMARS	WX	VARIOUS	3.217	1.157	12/08	1.720	03/10					
Systems Eng AIRCRAFT SYSTEMS	WX	VARIOUS	36.633	1.694	12/08	0.873	03/10					
Subtotal Product Development			56.331	14.304		12.938						
Program Management Support												
Contractor ETS	C/CPFF	VARIOUS	6.691	1.406	12/08	1.052	12/09					
Contractor MSS	C/CPFF	MCR	0.600	0.150	12/08	0.150	12/09					
Travel	WX	VARIOUS	0.615	0.125	12/08	0.125	12/09					
Subtotal Management			7.906	1.681		1.327						
Test & Evaluation												
Subtotal T&E												
Test & Evaluation												
Subtotal T&E												
Total Cost			64.237	15.985		14.265						

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EXHIBIT R4, Schedule Profile												DATE:	May 2009
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	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
AIRCREW ENDURANCE				MSB/ADR/AM AD				CDR					
CMARS							MS B		PDR/CDR				
Test & Evaluation Milestones													
AIRCREW ENDURANCE													
CMARS												DT/OT	
JHMCS NCVD													
LEP													
FLIGHT DECK CRANIAL													
Production Milestones													
Production Deliveries													
AIRCREW ENDURANCE													
CMARS													

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5	PROGRAM ELEMENT 0604264N, AIRCREW SYSTEMS DEVELOPMENT				PROJECT NUMBER AND NAME 0606, AIRCREW SYSTEMS DEVELOPMENT			
Schedule Profile	FY 2008	FY 2009	FY 2010					
AIRCREW ENDURANCE: MS B/ADR for AMXD	4Q							
AIRCREW ENDURANCE: CDR		4Q						
CMARS: MS B		3Q						
CMARS: PDR/CDR			1Q					
AIRCREW ENDURANCE: DT	3Q - 4Q	1Q - 4Q	1Q - 3Q					
CMARS DT			3Q-4Q					
JHMCS NVCD: DT	1Q - 4Q	1Q - 4Q	1Q-4Q					
LEP: DT		3Q - 4Q	1Q					
FLIGHT DECK CRANIAL: DT	4Q	1Q - 4Q						
AIRCREW ENDURANCE: DELIVERABLES		2Q - 4Q	1Q - 4Q					
CMARS DELIVERABLES		3Q-4Q	1Q - 4Q					

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604269N EA-18G			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	269.379	128.689	55.446					
3063 EA-18G Development	267.837	127.492	55.446					
9999 Next Generation Electronic Warfare Simulator	1.542	1.197						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The EA-18G is replacing the EA-6B aircraft. The EA-18G's electronic attack upgrades 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 weapon, High-speed Anti-Radiation Missile (HARM) family of weapons, to fulfill operational requirements. 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. The EA-18G has the capability to operate autonomously or as a major node in a network-centric operation and is being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently.

Congressional Add:
9A33A Next Generation Electronic Warfare Simulator. Provides Radio Frequency (RF) threat generation capabilities for the EA-18G Advanced Weapons Laboratory team to validate and verify the performance of mission critical Electronic Warfare systems.

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	278.469	128.906	48.394
Current President's Budget:	269.379	128.689	55.446
Total Adjustments	-9.090	-0.217	7.052

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments	-4.268	0.135	
SBIR/STTR/FTT Assessments	0.553		
Program Adjustments	-5.375		7.060
Rate/Misc Adjustments		-0.352	-0.008
Subtotal	-9.090	-0.217	7.052

Schedule:
 Operation and Evaluation (OPEVAL) was supposed to be complete in the 2nd quarter FY09, but has slid to 3rd quarter FY09 due to technical issues related to software development. As a result, the Full Rate Production (FRP) contract award has been delayed until 4th quarter FY09

Technical:
 N / A

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RD BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604269N EA-18G			PROJECT NUMBER AND NAME 3063 EA-18G Development		
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010			
Project Cost			267.837	127.492	55.446			
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 The EA-18G is replacing the EA-6B aircraft. The EA-18G's electronic attack upgrades 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 weapon, High-speed Anti-Radiation Missile (HARM) family of weapons, to fulfill operational requirements. 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. The EA-18G has the capability to operate autonomously or as a major node in a network-centric operation and is being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently.

B. Accomplishments/Planned Program

EA-18G Design and Avionics Integration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	159.480	101.003	13.526	
RDT&E Articles Quantity				

Continue Air Vehicle design and integration of avionics into the EA-18G.

EA-18G Software Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	25.804	9.202	30.993	
RDT&E Articles Quantity				

Continue software development of the EA-18G.

EA-18G Developmental & Operational Testin	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	82.553	17.287	10.927	
RDT&E Articles Quantity				

Continue and complete developmental testing associated with System Design & Development. Begin and complete operational test planning. Begin and complete Operational Evaluation (OPEVAL).

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604269N EA-18G	PROJECT NUMBER AND NAME 3063 EA-18G Development																
C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>EA-18G APN-1 (P-1 Item No 2)</td> <td style="text-align: right;">1,474.596</td> <td style="text-align: right;">1,547.224</td> <td style="text-align: right;">1,611.837</td> </tr> <tr> <td>EA-18G Adv. Procurement (P-1 Item No 3)</td> <td style="text-align: right;">50.771</td> <td style="text-align: right;">46.693</td> <td style="text-align: right;">20.559</td> </tr> <tr> <td>EA-18G APN-5 (P-1 Item No 33) OSIP (011-10)</td> <td></td> <td></td> <td style="text-align: right;">2.552</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: A sole source contract was awarded to Boeing (the platform manufacturer) for system design and development (SDD) under a Cost-Plus Incentive Fee/Award Fee (CPIF/AF) contract arrangement that provides incentives based on cost, schedule, and technical performance. Boeing has a subcontract 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. In FY05, two F/A-18F's began modification with RDT&E funds to incorporate the Electronic Warfare/Electronic Attack systems for further development, integration, and testing. In FY06, an Engineering Change Proposal (using procurement funds) was incorporated into the SDD contract to procure the EA-18G unique airframe changes and Airborne Electronic Attack kits, respectively, for the 4 SDD aircraft. Also during FY06, groundwork for the eight (8) Low Rate Initial Production (LRIP) aircraft was initiated and a Request For Proposal (RFP) was released prior to the Milestone C authorization and awarded in the fourth quarter FY07. During FY08, a Request For Proposal (RFP) was generated and released prior to LRIP II Decision (Defense Acquisition Board (DAB) scheduled for 30 April 08). OPEVAL is scheduled to be complete in fourth quarter FY09. FY09 will be the last year for the SDD contract. The Full Rate Production (FRP) decision is scheduled for fourth quarter FY09. Contractual studies are underway for Operational Requirement Document core block II activities and those efforts will be integrated into the overall EA-18G plan/roadmap as resources permit.			Line Item No. & Name	FY 2008	FY 2009	FY 2010	EA-18G APN-1 (P-1 Item No 2)	1,474.596	1,547.224	1,611.837	EA-18G Adv. Procurement (P-1 Item No 3)	50.771	46.693	20.559	EA-18G APN-5 (P-1 Item No 33) OSIP (011-10)			2.552
Line Item No. & Name	FY 2008	FY 2009	FY 2010															
EA-18G APN-1 (P-1 Item No 2)	1,474.596	1,547.224	1,611.837															
EA-18G Adv. Procurement (P-1 Item No 3)	50.771	46.693	20.559															
EA-18G APN-5 (P-1 Item No 33) OSIP (011-10)			2.552															

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604269N EA-18G			3063 EA-18G Development							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
GFE	VARIOUS	VARIOUS	2.008	0.064	VARIOUS	0.008	VARIOUS						
Primary Hdw Dev (ALQ-99)	WX	NSWC DET, CRANE IN	24.489	0.525	11/08								
Primary Hdw Dev (Aircraft)	SS/CPAF	BOEING, ST LOUIS, MO	900.870	49.003	10/08	4.300	10/09						
Primary Hdw Dev (Aircraft)	VARIOUS	VARIOUS	2.934	0.125	VARIOUS	0.056	VARIOUS						
SDD Award Fee	SS/CPAF	BOEING, ST LOUIS, MO	70.514	17.983	11/08								
Systems Engineering	WX	NAWCAD, LAKEHURST NJ	5.708	0.250	11/08	0.151	11/09						
Systems Engineering	WX	NAWCAD, PAX RIVER MD	24.790	2.822	11/08	1.615	11/09						
Systems Engineering	WX	NAWCWD, CHINA LAKE CA	72.941	9.382	11/08	1.724	11/09						
Systems Engineering	WX	NAWCWD, PT MUGU CA	43.035	5.668	11/08	0.880	11/09						
Systems Engineering	WX	NSWC DET, CRANE IN	11.081	1.490	11/08	0.418	11/09						
Subtotal Product Development			1,158.370	87.312		9.152							
Remarks: Primary Hardware development is based on the current value of the SDD contract plus a projection of additional future planned requirements. To date, 100% of the award fee has been awarded.													
Integrated Logistics Support	WX	VARIOUS	3.818	0.136	11/08	0.272	11/09						
Software Development	SS/CPFF	BOEING, ST LOUIS, MO	181.235	9.202	11/08	30.993	11/09						
Subtotal Support			185.053	9.338		31.265							
Remarks: Target values of contract includes current items on contract and projected additions.													

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604269N EA-18G			3063 EA-18G Development							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Dev Test & Eval	MIPR	NASA AMES	3.016										
Dev Test & Eval	MIPR	VARIOUS	2.235	0.147	11/08								
Developmental Test & Eval	WX	NAWCAD, PAX RIVER MD	105.306	3.677	11/08	2.645	11/09						
Developmental Test & Eval	WX	NAWCWD, CHINA LAKE	70.409	12.622	11/08	7.841	11/09						
Operational Test & Evaluation	WX	COTF, NORFOLK VA	3.990	10.115	11/08	0.441	11/09						
Subtotal T&E			184.956	26.561		10.927							
Remarks:													
Contractor Engineering Support	VARIOUS	VARIOUS	10.693	1.703	11/08	0.698	11/09						
Government Engineering Support	WX	NAWCAD, PAX RIVER MD	27.497	1.561	11/08	1.235	11/09						
Government Engineering Support	WX	VARIOUS	1.191										
Program Management Support	WX	NAWCAD, PAX RIVER MD	19.461	0.904	11/08	1.957	11/09						
Travel	WX	VARIOUS	1.758	0.113	VARIOUS	0.212	VARIOUS						
Subtotal Management			60.600	4.281		4.102							
Remarks:													
Total Cost			1,588.979	127.492		55.446							
Remarks:													

EXHIBIT R4, Schedule Profile													DATE:				May 2009																							
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME																										
RDT&E, N / BA-5					0604269N EA-18G									3063 EA-18G Development																										
Fiscal Year	2008				2009				2010																															
	1	2	3	4	1	2	3	4	1	2	3	4																												
Acquisition Milestones								IOC ★																																
							FRP △																																	
Development Phases	SD												Full Rate Production																											
	Integrated Broadcast System (IBS) Development & Demonstration																																							
Test & Evaluation Milestones																																								
Development Test					IBS DT																																			
Operational Test	IT-C1 ▲				SDD OPEVAL								IBS OT																											
Production Milestones	SDD Aircraft Contract Award																																							
SDD FY 06	AEA Kit Award																																							
LRIP I FY 07	LRIP I AEA Kit Award																																							
LRIP II FY 08	LRIP II																																							
FRP FY 09	▲	LRIP II AEA KIT AWARD																																						
					▲ FRP A/C Award				△ FRP AEA Kit Award																															
Deliveries	SDD (4)				LRIP I Deliveries				LRIP II (18) Deliveries																															

UNCLASSIFIED

[illegible]

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604269N EA-18G			PROJECT NUMBER AND NAME 9999 Congressional Add																		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010																				
Project Cost	1.542	1.197																					
RDT&E Articles Qty																							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>9A33A: Next Generation Electronic Warfare Simulatio</td> <td>FY 08</td> <td>FY 09</td> <td></td> <td></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>1.542</td> <td>1.197</td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> Provides Radio Frequency (RF) threat generation capabilities for the EA-18G Advanced Weapons Laboratory team to validate and verify the performance of mission critical Electronic Warfare systems.									9A33A: Next Generation Electronic Warfare Simulatio	FY 08	FY 09			Accomplishments/Effort/Subtotal Cost	1.542	1.197			RDT&E Articles Quantity				
9A33A: Next Generation Electronic Warfare Simulatio	FY 08	FY 09																					
Accomplishments/Effort/Subtotal Cost	1.542	1.197																					
RDT&E Articles Quantity																							

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604270N, EW DEVELOPMENT			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	50.900	90.476	97.635					
0556 / EW COUNTER RESPONSE	31.563	68.971	26.486					
1742/ EW TECHNICAL DEVELOPMENT & T&E	7.661	5.426	4.991					
2175 / TACTICAL AIR ELECTRONIC WARFARE	8.008	10.419	65.465					
2260/ SPECIFIC EMITTER ID	0.744	0.674	0.693					
9999 / CONGRESSIONAL ADD	2.924	4.986						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This element includes development of Electronic Warfare (EW) systems for United States Navy (USN), United States Marine Corps (USMC), and United States Army tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USN and USMC radio frequency jammers, and development and testing of electronic warfare devices for emerging threats and emergency contingencies.								

R-1 SHOPPING LIST - Item No. 94

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604270N, EW DEVELOPMENT

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	43.179	106.932	193.770
Current President's Budget:	50.900	90.476	97.635
Total Adjustments	7.721	-16.456	-96.135

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments	7.995	-16.210	
SBIR/STTR/FTT Assessments	-0.274		
Program Adjustments			-96.169
Rate/Misc Adjustments		-0.246	0.034
Subtotal	7.721	-16.456	-96.135

Schedule:

Project Unit 0556 / EW COUNTER RESPONSE: The ICAP II schedule change is based on actual execution and testing adjustments that more accurately reflects current testing status, and accounts for future test planning requirements. The delay in the ICAP III Block 3 DT test schedule was a result of software deficiencies not easily replicated in the lab, which required corrections prior to continuing test. Other follow-on software corrections were made to the test configuration and limited T&E resources were managed. This resulted in a shift in the OT schedule as well as a related OT delay due to conflicts with T&E resources. ICAP III Blocks 4 and 5 were realigned to more accurately capture the impacts of the Block 3 delays, as well as the funding and warfighter upgrades aligned with the Blocks. The resulting Fleet Releases were realigned and the titles (fleet release vs. IOC) more accurately reflects the nature of the Block products. LBT program has been in the Low Rate Initial Program (LRIP) phase since second quarter FY05, operating without RDT&E funding. LBT MS III/FRP/IOC information has been shown in recent RDT&E budget schedules for historical purposes and subsequently removed after the successful completion of MS III in April 2008 as well as FRP and IOC in third quarter FY08.

Project Unit 1742 / EW TECHNICAL DEVELOPMENT & T&E: Funding realigned to appropriate PE in FY10 and FY11 in support of on-going Offensive Information Operations Compute Network Operations efforts.

Project Unit 2175 / TACTICAL AIR ELECTRONIC WARFARE: Integrated Defensive Electronic Countermeasures (IDECM) Block 3: Shortly after IDECM Block 3 entered Integrated Developmental and Operational Testing (DT/OT), significant anomalies were reported by the operational test squadron. The program de-certified from OT in order to address the reported anomalies. The anomaly investigation was completed February 2008. The identified corrective actions was incorporated and verified through development lab and flight test. The program has re-certified and re-entered OT. The program schedule has been changed to reflect the impact of the reported anomalies on completion of OT and associated program milestones. IDECM Block 4: The Digital Radio Frequency Memory (DRFM) schedule has been adjusted to reflect the results of the Analysis of Alternatives (AoA) briefed to N88 in January 2008 and N88 action memo provided in March 2008. The direction provided by N88 requires that an IDECM Block 4 solution provide a common On-Board Jammer (OBJ) for the F/A-18C/D and E/F aircraft with an Initial Operational Capability (IOC) of 2014 and Full Operational Capability (FOC) of 2018. The BOL schedule was deleted as a result of the same AoA.

Technical:

Project Unit 0556 / EW COUNTER RESPONSE: Not Applicable

Project Unit 1742 / EW TECHNICAL DEVELOPMENT & T&E: IDECM Block 3: Corrective actions, developed to address anomalies reported during OT, have been incorporated and successfully demonstrated in development lab and flight testing. The program has re-certified and re-entered OT. IDECM Block 4: The performance requirement for an ALQ-126B replacement originally contemplated for DRFM has been replaced with the requirement for a common On-Board Jammer (OBJ) for both the F/A-18C/D and E/F aircraft. The common jammer must meet the requirements of the OBJ Block 2 Operational Requirements Document (ORD) and remain backwards compatible with IDECM Block 2 and 3 when installed in an F/A-18E/F.

Project Unit 2175 / TACTICAL AIR ELECTRONIC WARFARE: Not Applicable

Project Unit 2260 / SPECIFIC EMITTER ID: Not Applicable

Project Unit 9999 / CONGRESSIONAL ADD: Not Applicable

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
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 2008	FY 2009	FY 2010				
Project Cost		31.563	68.971	26.486				
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) This project develops upgrades to cope with the increasingly complex and dense Electronice Warfare (EW) threat environment. The required improvements in airborne electronic attack (EA) will be achieved by applying state-of-the-art signal exploitation/processing/display techniques, improved tactics and jamming capabilities. These efforts include the continued development of Force Protection/Overseas Contingency Operations (OCO) (classified discussion upon request) Navigation (NAV) and Information Operations (I/O) applications and enhanced communications jamming. The efforts under this project provide for the electronic countermeasures response to advanced threat weapon systems and C3 networks that are expanding in density and technical complexity. This project funds the continuing development and integration of all EW and EA systems for the US Navy electronic attack aircraft including improvements within precision Direction of Arrival (DOA), geo-location, Specific Emitter Identification (SEI), auto-Electronic Support Measures (ESM), and selective reactive jamming. The ICAP III test articles begun in FY 1999 were two EA-6B aircraft modified to support the Improved Capability (ICAP) III program and Low Band Transmitter (LBT) Engineering Development Models (EDMs). An EA-6B ICAP III aircraft will continue to be used as a test article during government test and evaluation of MIDS/Link-16, LBT and other EW improvements. 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 Enemy Air Defenses, 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. All efforts and system upgrades include the conversion of and transition from the Tactical EA-6B Mission Planning System (TEAMS) to the Joint Mission Planning System (JMPS), including development of EA-6B Unique Planning Modules. The ALQ-99 Low Band Transmitter (LBT) system provides an expanded war fighting capability against the early warning/acquisition radars and communication links of modern integrated air defense systems. The LBT entered Engineering and Manufacturing Development (E&MD) in September 1996, followed by Low Rate Initial Production (LRIP) in FY 2005 and Full Rate Production (FRP Milestone III) was approved in FY 2008. Electronic Attack Jammer Techniques Optimization (JATO) and test support is required to address and counter new and evolving radar and communications threats in support of existing and emerging systems such as the EA-6B and EA-18G. JATO will continue to generate techniques, tactics, and procedures that will help to optimize the capabilities of existing weapon systems, and to assist in requirements definitions of emerging AEA systems. A Next Generation Jammer (NGJ) capability to replace the ALQ-99 system is required to keep pace with advances in threat weapons systems and continual expansion of AEA systems. NGJ capabilities will address AEA capability gaps, AEA sufficiency gaps and ALQ-99 availability gaps. Beginning in FY10, Airborne Electronic Attack (AEA) efforts are budgeted in PE 0604274N Project 0557 Next Generation Jammer. Prior to FY10 AEA was budgeted for in PE 0604270N 0556 EW Counter Response.								

R-1 SHOPPING LIST - Item No.94

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE		
B. Accomplishments/Planned Program				
ICAP III UPDATE	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	7.833	7.888	8.420	
RDT&E Articles Quantity				
(U) Efforts will concentrate on completing the integration and enhancement of LINK-16 and ALQ-218 capabilities into the ICAP III aircraft as well as resolving the OPEVAL/Verification of Correction of FOT&E related deficiencies. ICAP III Block 3 includes the integration of Low Band Transmitter (LBT) and correction of software deficiencies. Block 3 is currently in operational testing with Fleet release scheduled for FY09-Q1. ICAP III Block 4 weapon system includes integration of ALE-47 hardware and USQ-113 software improvements with a fleet release scheduled for FY09-Q4. ICAP III Block 5 includes navigation and communication upgrades to include the integration of Control Display Navigation Unit (CDNU) 7000; development will begin in FY09 and continue until fielded.				
MISSION PLANNING	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.905	4.094	4.270	
RDT&E Articles Quantity				
(U) Joint Mission Planning Systems (JMPS) and associated EA-6B Unique Planning Components (UPC's) supports ICAP III Block upgrades. These efforts will continue development of the JMPS components in direct support of the ICAP III system.				
LINK 16 MESSAGE SETS AND DATA LINKS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.300	1.278	1.200	
RDT&E Articles Quantity				
(U) Complete testing and continued development of the Link-16 modification. These data link enhancements will enable the EA-6B ICAP III continued participation within Force Net and facilitate the EA contributions to the greater situational awareness allowed by Network Centric Warfare efforts.				

R-1 SHOPPING LIST - Item No.94

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT	PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE																	
B. Accomplishments/Planned Program (Cont.)																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">JAMMER TECHNIQUES OPTIMIZATION (JATO)</td> <td style="padding: 2px; text-align: center;">FY 08</td> <td style="padding: 2px; text-align: center;">FY 09</td> <td style="padding: 2px; text-align: center;">FY 10</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px; text-align: center;">11.570</td> <td style="padding: 2px; text-align: center;">11.905</td> <td style="padding: 2px; text-align: center;">12.596</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>					JAMMER TECHNIQUES OPTIMIZATION (JATO)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	11.570	11.905	12.596		RDT&E Articles Quantity				
JAMMER TECHNIQUES OPTIMIZATION (JATO)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	11.570	11.905	12.596																
RDT&E Articles Quantity																			
(U) Continue engineering development and test support required to address and counter new and evolving radar and communications threats in support of existing and emerging systems such as the EA-6B and EA-18G. JATO will continue to generate techniques, tactics, and procedures to optimize the capabilities of ALQ-99 and ALQ-218 systems, and to assist in requirements definitions of emerging AEA systems. JATO also continues to lead efforts in support of OCO and Force Protection issues. (Classified discussion available upon request.)																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">AIRBORNE ELECTRONIC ATTACK (AEA)</td> <td style="padding: 2px; text-align: center;">FY 08</td> <td style="padding: 2px; text-align: center;">FY 09</td> <td style="padding: 2px; text-align: center;">FY 10</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">43.806</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>					AIRBORNE ELECTRONIC ATTACK (AEA)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		43.806			RDT&E Articles Quantity				
AIRBORNE ELECTRONIC ATTACK (AEA)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		43.806																	
RDT&E Articles Quantity																			
(U) Conduct Next Generation Jammer (NGJ) technical maturation analysis/studies and complete concept refinement phase activities needed to support a Milestone A decision. Initiate NGJ technology development activities to reduce technological risk and determine appropriate set of technologies for use in NGJ. For FY2010 PE 0604274N has been established.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Intrepid Tiger Pod FA-18 E/F outfitting</td> <td style="padding: 2px; text-align: center;">FY 08</td> <td style="padding: 2px; text-align: center;">FY 09</td> <td style="padding: 2px; text-align: center;">FY 10</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px; text-align: center;">6.955</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>					Intrepid Tiger Pod FA-18 E/F outfitting	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	6.955				RDT&E Articles Quantity				
Intrepid Tiger Pod FA-18 E/F outfitting	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	6.955																		
RDT&E Articles Quantity																			
(U) GWOT funding provided for the engineering development and test support required for flight certification of the AN/ALQ-288(V)1 communication jammer pod for aircraft carrier flight operations. GWOT funding also provided for the continued development and test support to address and counter new and evolving communication threats in support of existing and emerging systems such as the AN/ALQ-228(V)-1 and Corporal.																			

R-1 SHOPPING LIST - Item No.94

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009														
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. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010 OCO</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010 Total</th> </tr> </thead> <tbody> <tr> <td style="padding-top: 10px;">P-1 Line #28, EA-6 SERIES</td> <td style="text-align: right; padding-top: 10px;">206.021</td> <td style="text-align: right; padding-top: 10px;">33.337</td> <td style="text-align: right; padding-top: 10px;">39.977</td> <td style="text-align: right; padding-top: 10px;">45.000</td> <td style="text-align: right; padding-top: 10px;">84.977</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The ICAP III contract, an E&MD Cost Plus Incentive Fee/Award Fee 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 Cost Plus Award Fee contract in FY 1999. LRIP contract award was completed in FY 2003. A Milestone III Navy Program Decision Meeting was held on 23 September 2005. The Acquisition Decision Memorandum was signed by ASN RDA on 21 November 2005. A Firm Fixed Price Full Rate Production (FRP) contract for Lot 2, 4 ALQ-218 systems, was awarded in March 2006. The FRP Lot 3 contract for 7 ALQ-218 systems was awarded 11 April 2008. Contract for Lot 4, ALQ-218 systems was awarded 15 September 2008.						Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total	P-1 Line #28, EA-6 SERIES	206.021	33.337	39.977	45.000	84.977
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total												
P-1 Line #28, EA-6 SERIES	206.021	33.337	39.977	45.000	84.977												

R-1 SHOPPING LIST - Item No.94

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
PRODUCT DEVELOPMENT												
Engineering & Tech Svc	Various	Various	5.173									
ESAD (SUPP) Systems Eng	Various	Various	0.900									
Mgt & Prof Suppt Svc	Various	Various	0.122									
PHD - ICAP III Blk Updates /MIDS	C-BOA	NGC, Bethpage, NY	4.456									
Primary HDW Develop - ICAP III	C-BOA	Various	252.271	3.888	10/08	7.449	10/09					
Systems Engineering	C-BOA	NGC, PRB Systems	2.722									
Primary HDW Develop	Various	NGC, Bethpage, NY	0.202									
Studies & Analysis (Non FFRDC) NGJ	FFP	Various	1.043	23.554	11/08							
Systems Engineering	WX	Naval Research Lab, MD		1.608	11/08	1.512	11/09					
Systems Engineering	WX	NAWCAD, PAX River, MD	11.993	3.475	10/08	2.709	10/09					
Systems Eng/BLK Update	WX	NAWCWD, Pt Mugu, CA	41.573	6.156	10/08	5.321	10/09					
Systems Engineering	WX	NSWC Det, Crane, IN	6.371	2.177	10/08	0.975	10/09					
Systems Engineering	WX	Various	7.903	2.086	10/08	1.108	10/09					
Sub-System Prototypes - NGJ	Various	Various		15.980	11/08							
Subtotal Product Development			334.729	58.924		19.074						
Remarks: Beginning in FY10, Airborne Electronic Attack (AEA) efforts are budgeted in PE 0604274N Project 0557 Next Generation Jammer. Prior to FY10 AEA was budgeted for in PE 0604270N 0556 EW Counter Response.												
SUPPORT												
Development Support - JATO	SS/FP	Johns Hopkins Univ, MD	12.555	4.419	11/08	3.799	11/09					
Eng & Tech Svc (Non FFRDC)	Various	Various	0.964	3.539	10/08	2.145	10/09					
Eng & Tech Svc (Non FFRDC)	FFP	L3 TITAN, Mt Laurel, NJ	0.535									
DFCS Installs	Various	Various		1.238	10/08	0.559	10/09					
ILS Pubs - ICAP III	WX	FRC, Jacksonville, FL		0.751	10/08	0.809	10/09					
Subtotal Support			14.054	9.947		7.312						
Remarks: Beginning in FY10, Airborne Electronic Attack (AEA) efforts are budgeted in PE 0604274N Project 0557 Next Generation Jammer. Prior to FY10 AEA was budgeted for in PE 0604270N 0556 EW Counter Response.												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
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 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TEST & EVALUATION													
Oper Test & Eval - ICAP III	WX	Oper T&E FOR CD 30, VA	0.957										
Dev Test & Eval - ICAP III Update	WX	NAWCAD Pax River, MD	13.565										
Developmental Testing - MP	WX	Various	1.928										
Oper Test & Eval - ICAP III Update	WX	Oper T&E FOR CD 30, VA	3.285										
Oper Test & Eval - MP	WX	Oper T&E FOR CD 30, VA	0.600										
Subtotal T&E			20.335	0.000		0.000							
Remarks:													
MANAGEMENT													
Program Mgmt Supt - AEA	WX	TBD											
Travel - AEA	TO	TBD											
Travel - PMA-234	TO	Travel Vendor, Lex Park, MD	0.530	0.100	10/08	0.100	10/09						
Travel - NATEC	TO	NATEC, San Diego, CA	0.071										
Gov Engineer Supt - MP	WX	NAWCWD, Pt Mugu, CA	2.885										
Subtotal Management			3.486	0.100		0.100							
Remarks:													
Total Cost			372.604	68.971		26.486							
Remarks: Beginning in FY10, Airborne Electronic Attack (AEA) efforts are budgeted in PE 0604274N Project 0557 Next Generation Jammer. Prior to FY10 AEA was budgeted for in PE 0604270N 0556 EW Counter Response.													

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EXHIBIT R4, Schedule Profile																		DATE:																							
APPROPRIATION/BUDGET ACTIVITY																		PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
RDT&E, N / BA-5																		0604270N, EW DEVELOPMENT												0556, EW COUNTER RESPONSE											
Fiscal Year	FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				2014				2015												
	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																																									
ICAP III																																									
Test & Evaluation Milestones																																									
ICAP III Development Test/Operational Test																																									
Production Milestones																																									
ICAP III FRP Contract Awards																																									
FRP Aircraft Deliveries																																									

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R-1 SHOPPING LIST - Item No.94

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME 1742 EW Technical Development			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	7.661	5.426	4.991					
RDT&E Articles Qty	1	1	1					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This element includes development of Electronic Warfare (EW) systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USN and USMC communications and non-communications jammers, and development and testing of electronic warfare devices for emerging threats and emergency contingencies. Project Unit A. 1742 EW Technical Development and T & E. Funds efforts that focus on the quick reaction prototyping of tactical information and electronic warfare systems. This program directly addresses various fleet requirements across multiple platforms (airborne, surface and subsurface), airborne and surface cryptologic operational requirements documents and the joint oversight council missions needs statement for information warfare and electronic warfare systems and capabilities. These systems/capabilities provide information dominance to friendly forces during conflict, which is necessary for successful mission accomplishment.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME 1742 EW Technical Development		
B. Accomplishments/Planned Program				
Test and Evaluation Equipment	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.755	0.662	0.701	
RDT&E Articles Quantity	1	1	1	
(U) Continue airborne Information Warfare jammer development, test and evaluation to include ancillary equipment, cabling, hardware, antennas and installation on prototype aircraft.				
Studies & Analysis	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.060	2.747	2.665	
RDT&E Articles Quantity	1	1	1	
(U) Conduct studies and vulnerability analysis on emerging threats/targets for Electronic Warfare (EW) programs.				
Software and Hardware Integration and Installation	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.993	2.993	2.993	
RDT&E Articles Quantity	1	1	1	
(U) Provide software integration, hardware installation and refurbishment of fixed site EW asset.				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME 1742 EW Technical Development		
B. Accomplishments/Planned Program (Cont.)				
Develop and Integrate Systems	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.388	1.381	1.116	
RDT&E Articles Quantity				
(U) Develops and fields EW capabilities in accordance with Fleet Forces Command prioritized signals first to be integrated into existing MCS-21 EW systems and deployed on air and surface platforms.				
Computer Network Operations	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	
RDT&E Articles Quantity		0		
(U) Funds CNO directed efforts towards computer network attack initiatives. Details held at a higher classification level.				
Program Management Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.465	0.636	0.509	
RDT&E Articles Quantity				
(U) Funds official travel expenses and required training to support Research & Development projects as well as consumable/simplified acquisitions expenses in support of the program management office.				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development		PROJECT NUMBER AND NAME 1742 EW Technical Development
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
Not Applicable				
D. ACQUISITION STRATEGY:				
Not Applicable				

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Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604270N Electronic Warfare Development			1742 EW Technical Development							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	Various	Various	2.347	0.302	Various	0.311	Various						
Ancillary Hardware Development													
Aircraft Integration	Various	Various	0.645	0.360	Various	0.390	Various						
Ship Integration													
Ship Suitability													
Systems Engineering													
Training Development													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			2.992	0.662		0.701							
Remarks: Continue airborne Information Warfare jammer development, test and evaluation to include ancillary equipment, cabling, hardware, antennas and installation on aircraft.													
Development Support	Various	Various	0.130	0.631	Various	0.507	Various						
Software Development	Various	Various	1.388	1.381	Various	1.116	Various						
Integrated Logistics Support													
Configuration Management													
Technical Data													
Studies & Analyses	Various	Various	1.931	2.116	1Q FY09	2.158	1Q FY10						
GFE													
Award Fees													
Subtotal Support			3.449	4.128		3.781							
Remarks: Conduct studies and vulnerability analysis on emerging threats/targets for Electronic Warfare (EW) programs.													

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604270N Electronic Warfare Development			1742 EW Technical Development							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Developmental Test & Evaluation	Various	Various	0.755	0.000		0.000							
Operational Test & Evaluation													
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Subtotal T&E			0.755	0.000		0.000							
Remarks: Supports the development of technical test plans and techniques for developed capabilities at various test facilities for multiple navy platforms.													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support	Various	Various	0.315	0.170	Various	0.207	Various						
Travel	Various	Various	0.150	0.466	Various	0.302	Various						
Transportation													
SBIR Assessment													
Subtotal Management			0.465	0.636		0.509							
Remarks: Provides for official travel and training expenses and miscellaneous consumables for the program management office.													
Total Cost			7.661	5.426		4.991							
Remarks:													

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EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						May 2009
RDT&E, N / BA-5						0604270N Electronic Warfare Development						1742 EW Technical Development
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Electronic Warfare												
Airborne Sys Development												
Airbrone Testing				AC5 △	AC6 △				AC4 △			
Test Support (NRL)												
Fixed Site Delivery			MCS-21 Ground Component (V2) Site Acceptance Test △						MCS-21 Ground Com (V1) Site Acceptance △			
Countermeasure Test Date			FOT&E (Incr. E) △ Red Flash Tests △△△		FAT (Incr. F) △		DT (Incr. F) △		FAT (Incr. F) D △			
Computer Network Ops												
S/W Sprial Capability Delivery								△				

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT			PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFARE			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
2175 TACTICAL AIR ELECTRONIC WARFARE	8.008	10.419	65.465					
RDT&E Articles Qty			6					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: IDECM Block 3 (IB-3) introduces the new Fiber Optic Towed Decoy (FOTD) capability to the IDECM Block 2 Electronic Warfare (EW) Suite as a replacement for the ALE-50 decoy. The FOTD, when integrated with the rest of the F/A-18E/F EW suite (i.e., ALQ-214, ALR-67(V)3, ALE-47 and ALE-50), the associated cockpit controls, displays and other avionics significantly improves the survivability of the host aircraft in a Radio Frequency (RF) threat environment. IOT&E found IB-3 effective, not suitable. Verification of correction to deficiencies (VCD) identified during IOT&E is required. VCD activities are underway and are planned to conclude in FY10. IDECM Block 4 (IB-4) is an ECP to the ALQ-214 to render it suitable for operation on F/A-18C/D aircraft (replacing the ALQ-126B and significantly improving F/A-18C/D survivability) while retaining all IDECM suite functionality when installed on F/A-18E/F aircraft. The IB-4 acquisition and contract strategy includes development of the Common On-Board-Jammer for the F/A-18 C/DE/F aircraft through sole source contract awards for modifications to the ALQ-214. IB-4, ALQ-214 ECP, efforts include hardware and software design, development and test, delivery of Engineering Development Models (EDMs), integration and testing on the host aircraft. The F/A-18C/D EW Suite includes the ALR-67(V)2 Radar Warning Receiver (RWR) the ALE-47 Countermeasures Dispensing Set (CMDS), the mission computer and other avionics. In addition to performing the RWR function, the ALR-67(V)2 is the EW Bus Controller. The EW Bus is the primary interface between the EW Systems (Jammer, RWR, and CMDS). The mission computer is the Avionics Bus controller, the interface between the EW suite and other avionics.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFARE		
B. Accomplishments/Planned Program				
IDECM Block 3	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.926			
RDT&E Articles Quantity				
Funded Integrated Defensive Electronics Countermeasures (IDECM) Block 3 Fiber Optic Towed Decoy (FOTD). Efforts included completion of IB-3 FOTD Development, Integration and Combined Developmental and Operational Testing (DT/OT).				
IDECM Block 4	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.082	10.419	65.465	
RDT&E Articles Quantity			6	
Fund IDECM Block 4, ALQ-214 ECP efforts, to include but not limited to: hardware and software design, development and test; delivery of Engineering Development Models (EDMs); integration and test on the host aircraft. The F/A-18C/D Electronic Warfare (EW) Suite includes the ALR-67(V)2 Radar Warning Receiver, the ALE-47 Countermeasures Dispensing Set, the mission computer and other avionics. The F/A-18E/F EW Suite includes the ALQ-214, ALR-67(V)3, ALE-47, ALE-50, ALE-55, the mission computer and other avionics.				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT	PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFARE	
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
#52, Common ECM, OSIP-007-03 APN	39.085	40.495	40.344	
#7, Airborne Expendable CM PANMC	19.332	18.662	25.839	
 D. ACQUISITION STRATEGY:				
IB-3 sole source award of VCD and LRIP efforts in FY 2009 and FY 2010. In April 2009 ASN(RD&A) approved the requested restructure of IB-4 to reflect the ECP strategy, replacing Milestones with In-Process Reviews (IPRs) in the program schedule. IB-4 sole source award of ALQ-214 ECP efforts in FY2010.				

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Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RD&E, N / BA-5			0604270N, EW DEVELOPMENT			2175, TACTICAL AIR ELECTRONIC WARFARE							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
PRODUCT DEVELOPMENT													
Aircraft Integration - IDECM	Various	Various	70.761										
Primary Hdw Dev AAR-47 FY07 SUP	CPFF	ATK Missile, Clearwater, FL	16.000										
Primary Hdw Dev AAR-47 FY07 SUP	MP	EGLIN, AFB, FL	2.100										
Primary Hdw Dev AAR-47 FY07 SUP	MP	NVS Fort Belvoir, VA	0.064										
Primary Hdw Dev IDECM	FFP	ITT, Clifton, NJ				52.150	Dec 2009						
Ship Suitability AAR-47	WX	NAWCAD, PAX, River, MD	0.050										
Studies & Analysis DRFM (CONG)	MP	NUWC DIV, Keyport, WA	0.018										
Systems Eng - IDECM	CPFF	BAE System, Nashua, NY	14.552										
Systems Eng - IDECM	CPFF	Various	62.439	1.410	Mar 2009	6.530	Apr 2010						
Systems Eng - IDECM	CPFF	Raytheon, Goleta, CA	0.268										
Risk Reduction DRFM (CONG)	CPFF	ITT, Clifton, NJ	1.810										
Risk Reduction	CPFF	ITT, Clifton, NJ	2.495	7.127	Feb 2009								
Risk Reduction	CPFF	ITT, Clifton, NJ		0.992	Jul 2009								
Subtotal Product Development			170.557	9.529		58.680							
Remarks:													

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604270N, EW DEVELOPMENT			PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFARE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
DEVELOPMENT SUPPORT												
Dev/Eng Spt AAR-47 (Non-FFRDC)	WX	NRL, Washington, DC	0.343									
Dev/Eng Spt AAR-47	WX	Various	0.220									
Software Development - IDECM	WX	Various	6.843									
Integrated Log Support - AAR-47	CPFF	ATK Missile Sys , Clearwater FL	0.650									
Software Development-AAR-47	CPFF	ATK Missile Sys , Clearwater FL	0.171									
Integrated Log Support - IDECM	WX	FRC-SE, Jacksonville, FL	0.105			3.140	Dec 2009					
Subtotal Support			8.332	0.000		3.140						
Remarks:												

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604270N, EW DEVELOPMENT			2175, TACTICAL AIR ELECTRONIC WARFARE					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
DEVELOPMENTAL TEST& EVAL											
Dev Test & Eval Spt AAR-47	WX	NRL, Washington, DC	0.270								
Eng Spt - IDECM	WX	NAWCWD, China Lake, CA	9.547								
Eng Spt - IDECM	WX	Various	32.505								
Eng/Log Spt - DRFM (CONG)	WX	Various	0.524								
Eng/Log Spt - DRFM (CONG)	WX	NAWCAD, PAX, River, MD	0.713								
Eng/Log Spt - DRFM (CONG)	MP	DTIC	0.067								
Eng/Log Spt - DRFM	WX	NAWCAD, PAX, River, MD	0.120								
Eng/Log Spt - DRFM	WX	Various	0.420								
Eng/Log Spt - IDECM	WX	NAWCAD, PAX, River, MD		0.050	Nov 2008	1.401	Dec 2009				
Eng/Log Spt - IDECM	WX	Various		0.840	Nov 2008	0.819	Dec 2009				
IDECM Test Spt (OPTEVFOR)	WX	Oper T&E For CD 30, VA	4.030								
IDECM Test Spt (Non-FFRDC)	CPFF	Various	1.486								
Live Fire Test & Eval AAR-47	WX	NRL, Washington, DC	0.508								
Operational Test & Eval AAR-47	WX	NRL, Washington, DC	0.100								
Studies & Analysis (Non-FFRDC) (CONG)	CPFF	John Hopkins Un, Laurel, MD	0.774								
Eng/Log Spt- DRFM (CONG)	WX	NRL, Washington, DC	0.375								
Eng/Log Spt- DRFM (CONG)	WX	FRC-SE, Jacksonville, FL	0.050								
Eng/Log Spt - IDECM	WX	FRC-SE, Jacksonville, FL				0.201	Dec 2009				
Eng & Tech Svcs (Non-FFRDC)	CPFF	L-3 Titan, MD	0.448								
Flight Test - IDECM	WX	NAWCWD, China Lake, CA				0.819	Jan 2010				
Subtotal T&E			51.937	0.890		3.240					
Remarks:											
MANAGEMENT											
AAR-47 Travel	TO	NAVAIR, PAX River, MD	0.050								
Prog Mgmt (DRFM)	WX	NAWCAD, PAX River, MD	0.002								
PM Spt DRFM (Non-FFRDC)	TBD	TBD	0.146								
Prog Mgmt Spt DRFM (CONG)	WX	NAWCAD, PAX River, MD	0.234								
Mgt & Prof Suppt Svc (Non-FFRDC)	CPFF	Amelex, MD	0.210								
Mgt & Prof Suppt Svc (Non-FFRDC) IDECM	CPFF	NRL, Washington, DC				0.305	Dec 2009				
Mgt & Prof Suppt Svc (Non-FFRDC)	CPRR	Tekla, Arlington, VA	0.160								
Prog Mgmt Spt IDECM	WX	Various	19.386								
Prog Mgmt (Non-FFRDC)	CPFF	DPA Inc., Arlington, VA	0.077								
Travel IDECM	TO	Various	0.104								
Travel IDECM	TO	NAWCAD, PAX River, MD	0.224								
Travel	TO	NAWCAD, PAX River, MD	0.005								
Travel	TO	NAWCAD, PAX River, MD				0.100	Oct 2009				
Impact Fees	WX	NAWCAD, PAX River, MD	0.032								
Subtotal Management			20.630	0.000		0.405					
Remarks:											
Total Cost			251.456	10.419		65.465					
Remarks:											

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EXHIBIT R4, Schedule Profile																		DATE:																			
APPROPRIATION/BUDGET ACTIVITY																		PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME									
RDT&E, N / BA-5																		0604270N, EW DEVELOPMENT										2175, TACTICAL AIR ELECTRONIC WARFARE									
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015								
	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																																					
IDECM Block 3																																					
IDECM Block 4																																					
IDECM Block 4 PDR																																					
IDECM Block 4 CDR																																					
IDECM Block 4 Development																																					
IDECM Block 4 Delivery																																					
Test & Evaluation Milestones																																					
IDECM B-3 Integrated DT/OT																																					
IDECM Block 4 Testing																																					
Production Milestones																																					
IDECM Block 3																																					
IDECM Block 4																																					
Production Deliveries																																					
IDECM Block 3																																					
IDECM Block 4																																					

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Exhibit R-4a, Schedule Detail

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604270N, EW DEVELOPMENT				2175, TACTICAL AIR ELECTRONIC WARFARE			
Schedule Profile	FY 2008	FY 2009	FY 2010					
IDECM Block 4 ENG & MFG Development (EMD) Award			1Q					
IDECM Block 4 Preliminary Design Review (PDR)		3Q						
IDECM Block 4 Critical Design Review (CDR)			3Q					
IDECM Block 4 Development			2Q-4Q					
IDECM Block 3 Integrated DT/OT	1Q-4Q							
IDECM Block 4 Testing			4Q					
IDECM Block 3 Low Rate Initial Production (LRIP) 4	3Q							
IDECM Block 3 Low Rate Initial Production (LRIP) 5		3Q						
IDECM Block 3 Low Rate Initial Production (LRIP) 6			2Q					
IDECM Block 3 LRIP 4 Deliveries (150)		4Q	1Q-4Q					
IDECM Block 3 LRIP 4 Deliveries (251)			4Q					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW Development			PROJECT NUMBER AND NAME 2260 SPECIFIC EMITTER			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		0.744	0.674	0.693				
RDT&E Articles Qty								
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.								
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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW Development	PROJECT NUMBER AND NAME 2260 SPECIFIC EMITTER	

B. Accomplishments/Planned Program

SENSOR FUSION	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.253	0.175	0.199	
RDT&E Articles Quantity				

This effort supports systems development and information fusion of improved SEI technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Changes reflect addition of FY10 funding and changes in level of effort due to hardware automation and outside adjustments in program controls. FY 2008 Accomplishments: Continued task to fuse additional sources of data with SEI data 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 helped reduce staffing and support remote access and control capability. FY 2009 Plans: Continue all efforts of FY08. FY 2010 Plans: Continue all efforts of FY09.

SYSTEM AUTOMATION	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.200	0.229	0.246	
RDT&E Articles Quantity				

This effort supports development of an autonomous surveillance system capable of providing emitter signal information to a central location. FY 2008 Accomplishments: Continued task to develop an unmanned, autonomous, remote collection and surveillance system. Continued task to automate fusion of other sensor information with SEI data collection. FY 2009 Plans: Continue all efforts of FY08. FY 2010 Plans: Continue all efforts of FY09.

TECHNOLOGY REFRESH & COMMUNICATION ENHANCEMENT	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.291	0.270	0.248	
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. FY 2008 Accomplishments: Continued task to incorporate other SEI algorithms into deployed processing software. Continued task on integrating 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. (NRL) Continued task to incorporate further message reporting formats for dissemination of SEI data and improve SEI interoperability. (NRL) Initiated task to expand collection capability to support additional radar types. FY 2009 Plans: Continue all efforts of FY08. FY 2010 Plans: Continue all efforts of FY09.

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604270N, EW Development	2260 SPECIFIC EMITTER		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
Not applicable				
D. ACQUISITION STRATEGY:				
Not Applicable.				

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
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 2008	FY 2009	FY 2010				
Project Cost		2.924	4.986	0.000				
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD	
B. Accomplishments/Planned Program			
9C09A EA 8B ALQ-99 BAND 5/6 TWT	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	0.966		
RDT&E Articles Quantity			
The FY 2008 Congressional Add is for the Band 4 traveling wave tube (TWT) replacement development program.			
9C10A PT MUGU EW LAB UPGRADE	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	1.958	1.596	
RDT&E Articles Quantity			
The FY 2008 and FY 2009 Congressional Adds are for research and lab equipment necessary to develop a Point Mugu laboratory facility modernization.			
9D69A INTEGRATED NAVAL ELECTRONIC WARFA	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost		0.997	
RDT&E Articles Quantity			
The FY 2009 Congressional Add is for Integrated Naval Electronic Warfare.			
9D70A USMC ELECTRONIC WARFARE (EW) TRAIN	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost		2.393	
RDT&E Articles Quantity			
The FY 2009 Congressional Add is for the USMC Electronic Warfare Training Program.			

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604273N, VH71A Executive Helo Development			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	226.494	831.802	85.240					
3058 VH-71 Replacement Helo Increment One	226.494	732.671	55.240					
3065 VH-71 Replacement Helo Increment Two	0.000	99.131	0.000					
3300 Presidential Helicopter VXX	0.000	0.000	30.000					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3058 - 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). 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 VH-71 program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VH-71 to be available to most effectively assume Presidential vertical lift mission by FY10, two Increments were to be developed. Increment 1 was to provide an initial limited capability to fulfill the immediate need Presidential lift requirement. Three (3) test article aircraft, system design and development (SDD) efforts, maintenance trainers, and associated logistics were initiated in 2005 for Increment 1. Included in the SDD contract were five (5) Increment 1 pilot production aircraft to support Initial Operational Capability (IOC). Due to increased cost and schedule growth the Secretary of Defense directed cancellation of the current VH-71 program and to initiate a new start program. FY2010 funding supports execution of the Secretary of Defense's decision. 3065 - 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). 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 VH-71 program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VH-71 to be available to most effectively assume Presidential vertical lift mission by FY10, two Increments were to be developed. Increment 2 was to be developed to complete all of the Presidential support requirements. Two test articles were to be procured in FY09 to accommodate air vehicle structural differences between Increment 1 and 2 (main gear box, drive train, engines, tail unit and main rotor blades). The second test vehicle was to be procured instead of pursuing the planned modifications to one of the Increment 1 test vehicles due to the extent of the air vehicle structural differences. Due to increased cost and schedule growth the Secretary of Defense directed cancellation of the current VH-71 program and to initiate a new start program. FY2010 funding supports execution of the Secretary of Defense's decision. 3300 - 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). 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 Executive Helicopter Replacement Program is a new start program in FY10 to replace the VH-3D and VH-60N based on the decision from the Secretary of Defense to cancel the VH-71 program. An acquisition strategy for the VXX program is being established. FY10 funding includes pre-MS A risk reduction activities, capability based assessments, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development and threat analysis leading to a FY11 Material Development Decision (MDD)/ program start.								

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604273N, VH71A Executive Helo Development	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget:	225.391	1,047.835	212.947
FY10 President's Budget:	226.494	831.802	85.240
Total Adjustments	1.103	-216.033	-127.707

Summary of Adjustments

Congressional Rescissions		-213.772	
Congressional Adjustments			
SBIR/STTR/FTT Assessments	-0.412		
Program Adjustments	1.515		-127.678
Rate/Misc Adjustments		-2.261	-0.029
Subtotal	1.103	-216.033	-127.707

Schedule:

FY09 and FY10 funds were adjusted due to execution associated with concurrency with Increment 1 & Increment 2 development, design, and production. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth. A new acquisition strategy for a replacement program is in the process of being developed.

Technical:

FY09 and FY10 funds were adjusted due to execution associated with concurrency with Increment 1 & Increment 2 development, design, and production. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth. A new acquisition strategy for a replacement program is in the process of being developed along with a review of capabilities and CONOPS.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3058, VH-71 Replacement Helo Increment One			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	226.494	732.671	55.240					
RDT&E Articles Qty								
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). 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 VH-71 program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VH-71 to be available to most effectively assume Presidential vertical lift mission by FY10, two Increments were to be developed. Increment 1 was to provide an initial limited capability to fulfill the immediate need Presidential lift requirement. Three (3) test article aircraft, system design and development (SDD) efforts, maintenance trainers, and associated logistics were initiated in 2005 for Increment 1. Included in the SDD contract were five (5) Increment 1 pilot production aircraft to support Initial Operational Capability (IOC). Due to increased cost and schedule growth the Secretary of Defense directed cancellation of the current VH-71 program and to initiate a new start program. FY2010 funding supports execution of the Secretary of Defense's decision.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development	PROJECT NUMBER AND NAME 3058, VH-71 Replacement Helo Increment One																	
B. Accomplishments/Planned Program																			
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">PROGRAM MANAGEMENT AND SUPPORT</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2010</th> <th style="border-bottom: 1px solid black;"></th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center; border: 1px solid black;">42.348</td> <td style="text-align: center; border: 1px solid black;">33.016</td> <td style="text-align: center; border: 1px solid black;">5.082</td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black;">RDT&E Articles Quantity</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </tbody> </table> Previous FY funding was for in-house, field activity, and contractor support of VH-71 Integrated Product Teams (IPTs) activities. FY10 funding covers the Secretary of Defense's decision to cancel the current VH-71 program. Efforts include, but are not limited to, government integrated logistics support, program management support, systems engineering support, technical pubs, and travel for VH-71 program.					PROGRAM MANAGEMENT AND SUPPORT	FY 2008	FY 2009	FY 2010		Accomplishments/Effort/Subtotal Cost	42.348	33.016	5.082		RDT&E Articles Quantity				
PROGRAM MANAGEMENT AND SUPPORT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost	42.348	33.016	5.082																
RDT&E Articles Quantity																			
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">TEST AND EVALUATION</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2010</th> <th style="border-bottom: 1px solid black;"></th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center; border: 1px solid black;">17.852</td> <td style="text-align: center; border: 1px solid black;">13.176</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black;">RDT&E Articles Quantity</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </tbody> </table> Previous funding was for Test and Evaluation of test article aircraft, pilot production aircraft, and SDD assets, including Live Fire Test and Evaluation.					TEST AND EVALUATION	FY 2008	FY 2009	FY 2010		Accomplishments/Effort/Subtotal Cost	17.852	13.176			RDT&E Articles Quantity				
TEST AND EVALUATION	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost	17.852	13.176																	
RDT&E Articles Quantity																			
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">PRODUCT DEVELOPMENT</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2010</th> <th style="border-bottom: 1px solid black;"></th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center; border: 1px solid black;">166.294</td> <td style="text-align: center; border: 1px solid black;">686.479</td> <td style="text-align: center; border: 1px solid black;">50.158</td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black;">RDT&E Articles Quantity</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </tbody> </table> Contract award was for initial test article aircraft, fatigue test article, long-lead pilot production aircraft efforts, System Design and Development (SDD) work efforts, and support of training systems efforts including but not limited to, aircrew/pilot trainers, training curriculum, and requisite training support. FY10 funding covers the Secretary of Defense's decision to cancel the current VH-71 program.					PRODUCT DEVELOPMENT	FY 2008	FY 2009	FY 2010		Accomplishments/Effort/Subtotal Cost	166.294	686.479	50.158		RDT&E Articles Quantity				
PRODUCT DEVELOPMENT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost	166.294	686.479	50.158																
RDT&E Articles Quantity																			

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604273N, VH71A Executive Helo Development	3058, VH-71 Replacement Helo Increment One		

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Not Applicable.			

D. ACQUISITION STRATEGY:

The VH-71 program was designated an ACAT ID program. 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. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth. A new acquisition strategy for a replacement program is in the process of being developed.

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3058, VH-71 Replacement Helo Increment One						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
PRODUCT DEVELOPMENT													
Primary Hardware Development	C-CPAF	LOCKHEED MARTIN CORP, OWEGO, NY	2,028.550	679.671	11/08	50.000	03/09						
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD	11.817	0.500	11/08								
Training Development	C-CPAF	LOCKHEED MARTIN CORP, OWEGO, NY	4.989										
Training Development	VARIOUS	VARIOUS		29.975	11/08	0.158	11/09						
Subtotal Product Development			2,045.356	710.146		50.158							
Remarks: Covers the Secretary of Defense's decision to cancel the current VH-71 program.													
SUPPORT													
Development Support Equipment	VARIOUS	VARIOUS	21.655	0.200	11/08	0.041	11/09						
Integrated Logistics	WX	NADEP, CHERRY POINT NC	3.502	0.250	11/08	0.655	11/09						
Integrated Logistics	WX	NAWCAD, LAKEHURST NJ	7.525	0.500	11/08	0.643	11/09						
Integrated Logistics	WX	NAWCAD, PATUXENT RIVER MD	13.527	0.750	11/08								
Integrated Logistics	VARIOUS	VARIOUS	11.808	0.300	11/08	0.196	11/09						
Studies & Analyses	C-FFP	LOCKHEED MARTIN CORP, OWEGO, NY	87.423										
Studies & Analyses	C-FFP	SIKORSKY, AIRCRAFT, CT	87.422										
Studies & Analyses	WX	NAWCAD, PATUXENT RIVER MD	2.180										
Subtotal Support			235.042	2.000		1.535							
Remarks: Covers the Secretary of Defense's decision to cancel the current VH-71 program.													

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604273N, VH71A Executive Helo Development			3058, VH-71 Replacement Helo Increment One							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
TEST & EVALUATION													
Developmental Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD	25.162	10.400	11/08								
Developmental Test & Evaluation	VARIOUS	VARIOUS	20.042	1.500	11/08								
Live Fire Test & Evaluation	WX	NAWCWD, CHINA LAKE CA	14.086	5.100	11/08								
Subtotal T&E			59.290	17.000									
Remarks:													
MANAGEMENT													
Contractor Engineering Support	VARIOUS	VARIOUS	10.333	0.613	12/08								
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	57.731	1.250	11/08								
Government Engineering Support	VARIOUS	VARIOUS	3.389	0.300	12/08	1.337	11/09						
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	31.347	1.000	11/08	1.324	11/09						
Program Management Support	VARIOUS	VARIOUS	24.395	0.250	12/08	0.836	11/09						
Transportation	VARIOUS	VARIOUS	1.071	0.012	11/08								
Travel	VARIOUS	NAVAIR, PATUXENT RIVER MD	1.926	0.100	10/08	0.050	10/09						
Subtotal Management			130.192	3.525		3.547							
Remarks: Covers the Secretary of Defense's decision to cancel the current VH-71 program.													
Total Cost			2,469.880	732.671		55.240							
Remarks:													

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EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY												May 2009
RDT&E, N / BA-5												
PROGRAM ELEMENT NUMBER AND NAME												
0604273N, VH71A Executive Helo Development												
PROJECT NUMBER AND NAME												
3058, VH-71 Replacement Helo Increment One												
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones												
RDT&E Contract Awards												
SDD Design & Development				Increment 1								
Test Aircraft Build (3 a/c)												
Deliveries (3 a/c)												
Pilot Production Build (5 a/c)												
Deliveries (5 a/c)												
Test & Evaluation Milestones												
Integrated Test Program Increment 1				Increment 1 Integrated								
Trainers				Pilot/Maint Trainers								

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Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development		PROJECT NUMBER AND NAME 3058, VH-71 Replacement Helo Increment One	
Schedule Profile	FY 2008	FY 2009	FY 2010	
SDD Design and Development	1Q-4Q	1Q-3Q		
Test Aircraft Build (3 a/c)	1Q-4Q	1Q-3Q		
Increment 1 Test Aircraft Delivery	1Q			
Pilot Production Build (5 a/c)	1Q-4Q	1Q		
Integrated test program (Increment 1)	1Q-4Q	1Q-3Q		
Pilot/maintenance Trainers	1Q-4Q	1Q-3Q		

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3065, VH-71 Replacement Helo Increment Two			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	0.000	99.131	0.000					
RDT&E Articles Qty								
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). 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 VH-71 program provides the replacement helicopter for the VH-3D and VH-60N. In order for the VH-71 to be available to most effectively assume Presidential vertical lift mission by FY10, two Increments were to be developed. Increment 2 was to be developed to complete all of the Presidential support requirements. Two test articles were to be procured in FY09 to accommodate air vehicle structural differences between Increment 1 and 2 (main gear box, drive train, engines, tail unit and main rotor blades). The second test vehicle was to be procured instead of pursuing the planned modifications to one of the Increment 1 test vehicles due to the extent of the air vehicle structural differences. Due to increased cost and schedule growth the Secretary of Defense directed cancellation of the current VH-71 program and to initiate a new start program. FY2010 funding supports execution of the Secretary of Defense's decision.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development	PROJECT NUMBER AND NAME 3065, VH-71 Replacement Helo Increment Two																	
B. Accomplishments/Planned Program																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: left; padding: 5px;">PROGRAM MANAGEMENT AND SUPPORT</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2008</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2009</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2010</td> <td style="width: 25%;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black; text-align: center;">48.100</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">RDT&E Articles Quantity</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </table> In-house, field activity, and contractor support of VH-71 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 VH-71 program. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth.					PROGRAM MANAGEMENT AND SUPPORT	FY 2008	FY 2009	FY 2010		Accomplishments/Effort/Subtotal Cost		48.100			RDT&E Articles Quantity				
PROGRAM MANAGEMENT AND SUPPORT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost		48.100																	
RDT&E Articles Quantity																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: left; padding: 5px;">TEST AND EVALUATION</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2008</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2009</td> <td style="width: 15%; text-align: center; padding: 5px;">FY 2010</td> <td style="width: 25%;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black; text-align: center;">4.600</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">RDT&E Articles Quantity</td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> </tr> </table> Test and Evaluation of test article aircraft, pilot production aircraft, and SDD assets, including Live Fire Test and Evaluation. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth.					TEST AND EVALUATION	FY 2008	FY 2009	FY 2010		Accomplishments/Effort/Subtotal Cost		4.600			RDT&E Articles Quantity				
TEST AND EVALUATION	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost		4.600																	
RDT&E Articles Quantity																			
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PRODUCT DEVELOPMENT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost		46.431																	
RDT&E Articles Quantity																			

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604273N, VH71A Executive Helo Development	3065, VH-71 Replacement Helo Increment Two	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>

D. ACQUISITION STRATEGY:

The VH-71 program was designated an ACAT ID program. 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. The Secretary of Defense directed cancellation of the VH-71 program due to increased cost and schedule growth. A new acquisition strategy for a replacement program is in the process of being developed.

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RD&E, N / BA-5			0604273N, VH71A Executive Helo Development			3065, VH-71 Replacement Helo Increment Two						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
PRODUCT DEVELOPMENT												
Primary Hardware Development	C-CPAF	LOCKHEED MARTIN CORP, OWEGO, NY		46.431	11/08							
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD		2.000	11/08							
Subtotal Product Development				48.431								
Remarks: The Secretary of Defense directed cancellation of the current VH-71 program.												
SUPPORT												
Development Support Equipment	VARIOUS	VARIOUS		3.750	01/09							
Integrated Logistics	WX	NADEP, CHERRY POINT NC		1.950	11/08							
Integrated Logistics	WX	NAWCAD, LAKEHURST NJ		3.400	11/08							
Integrated Logistics	WX	NAWCAD, PATUXENT RIVER MD		5.300	11/08							
Integrated Logistics	VARIOUS	VARIOUS		0.800	11/08							
Subtotal Support				15.200								
Remarks: The Secretary of Defense directed cancellation of the current VH-71 program.												

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3065, VH-71 Replacement Helo Increment Two							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
TEST & EVALUATION													
Developmental Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD		3.000	11/08								
Developmental Test & Evaluation	VARIOUS	VARIOUS		1.600	11/08								
Subtotal T&E				4.600									
Remarks: The Secretary of Defense directed cancellation of the current VH-71 program.													
MANAGEMENT													
Contractor Engineering Support	VARIOUS	VARIOUS		0.996	12/08								
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD		11.400	11/08								
Government Engineering Support	VARIOUS	VARIOUS		3.400	12/08								
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD		10.196	11/08								
Program Management Support	VARIOUS	VARIOUS		4.456	12/08								
Transportation	VARIOUS	NAVAIR, PATUXENT RIVER MD		0.008	11/08								
Travel	VARIOUS	NAVAIR, PATUXENT RIVER MD		0.444	10/08								
Subtotal Management				30.900									
Remarks: The Secretary of Defense directed cancellation of the current VH-71 program.													
Total Cost				99.131									
Remarks:													

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-5								PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development				PROJECT NUMBER AND NAME 3065, VH-71 Replacement Helo Increment Two					
Fiscal Year	2008				2009				2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
Acquisition Milestones																	
SDD Design & Development					Increment 2												
Test Aircraft Build (2 a/c)					Increment 2												

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development		PROJECT NUMBER AND NAME 3065, VH-71 Replacement Helo Increment Two	
Schedule Profile	FY 2008	FY 2009	FY 2010	
SDD Design and Development		1Q-3Q		
Test Aircraft Build (2 a/c)		1Q-3Q		

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	0.000	0.000	30.000					
RDT&E Articles Qty								
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). 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 Executive Helicopter Replacement Program is a new start program to replace the VH-3D and VH-60N based on the direction from the Secretary of Defense to cancel the VH-71 program. An acquisition strategy for the VXX program is being established. FY10 funding includes pre-MS A risk reduction activities, capability based assessments, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development and threat analysis leading to a FY11 Material Development Decision (MDD)/ program start.								

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development	PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX																	
B. Accomplishments/Planned Program																			
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PROGRAM MANAGEMENT AND SUPPORT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost			28.824																
RDT&E Articles Quantity																			
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TEST AND EVALUATION	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost			0.860																
RDT&E Articles Quantity																			
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PRODUCT DEVELOPMENT	FY 2008	FY 2009	FY 2010																
Accomplishments/Effort/Subtotal Cost			0.316																
RDT&E Articles Quantity																			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604273N, VH71A Executive Helo Development	3300, Presidential Helicopter VXX
C. OTHER PROGRAM FUNDING SUMMARY:		
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u> <u>FY 2010</u>
Not Applicable.		
D. ACQUISITION STRATEGY:		
An acquisition plan for a new start VXX program is being established. FY10 funding includes pre-MS A risk reduction activities, capability based assessments, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development and threat analysis leading to a FY11 Material Development Decision (MDD)/ program start.		

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-5			PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
PRODUCT DEVELOPMENT													
Training Support	Various	Various				0.316	11/09						
Subtotal Product Development						0.316							
Remarks:													
SUPPORT													
Integrated Logistics	WX	NAWCAD, PATUXENT RIVER MD				2.284	11/09						
Integrated Logistics	VARIOUS	VARIOUS				5.200	01/10						
Subtotal Support						7.485							
Remarks:													

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
TEST & EVALUATION													
Developmental Test & Evaluation	WX	NAWCAD, PATUXENT RIVER MD				0.860	11/09						
Subtotal T&E						0.860							
Remarks:													
MANAGEMENT													
Contractor Engineering Support	VARIOUS	VARIOUS				0.650	11/09						
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD				6.244	11/09						
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD				14.120	11/09						
Travel	VARIOUS	NAVAIR, PATUXENT RIVER MD				0.325	10/09						
Subtotal Management						21.339							
Remarks:													
Total Cost						30.000							
Remarks:													

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5										PROGRAM ELEMENT NUMBER AND NAME 0604273N, VH71A Executive Helo Development				PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX	
Fiscal Year	2008				2009				2010						
	1	2	3	4	1	2	3	4	1	2	3	4			
Acquisition Milestones															
Acquisition Strategy Development															
Capabilities Based Assessment															

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT 0604273N, VH71A Executive Helo Development			PROJECT NUMBER AND NAME 3300, Presidential Helicopter VXX
Schedule Profile	FY 2008	FY 2009	FY 2010	
Acquisition Strategy Development			1Q-4Q	
Capability Based Assessment			1Q-4Q	
Material Development Decision (MDD)			4Q	

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604274N, NEXT GENERATION JAMMER			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	0.000	0.000	127.970					
0557 / NEXT GENERATION JAMMER	0.000	0.000	127.970					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops a Next Generation Jammer (NGJ) capability and appropriate technologies required to replace the existing ALQ-99 Tactical Jamming System. NGJ is required to keep pace with advances in threat weapons systems and continuous expansion of the Airborne Electronic Attack (AEA) mission area. NGJ capabilities will address AEA capability gaps, AEA sufficiency gaps and address ALQ-99 shortfalls in scalability, flexibility, supportability, interoperability, availability and capability. NGJ will adopt an adaptable, modular, and open architecture philosophy to combat the increasing capability gap and enable future growth at a reduced operational and sustainment cost. NOTE: NGJ was previously funded under PE 0604270N as part of project 0556 Airborne Electronic Attack (AEA). NGJ effort was budgeted \$43.806M under PE 0604270N 0556 in FY09.								

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DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5

R-1 ITEM NOMENCLATURE

0604274N, NEXT GENERATION JAMMER

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	0.000	0.000	0.000
Current President's Budget:	0.000	0.000	127.970
Total Adjustments	0.000	0.000	127.970

Summary of Adjustments

Congressional Rescissions

Congressional Adjustments

SBIR/STTR/FTT Assessments

Program Adjustments

Rate/Misc Adjustments

Subtotal

127.970

127.970

Schedule:

NGJ was previously funded under PE 0604270N as part of project 0556 Airborne Electronic Attack (AEA). NGJ effort was budgeted \$43.806M under PE 0604270N 0556 in FY09.

Four Broad Agency Announcement contracts were signed in Jan 2009 for 6 month studies to perform system-level trade studies defining notional requirements and technical baselines for an NGJ system. Concurrently, an NGJ Analysis of Alternatives is being conducted with a planned completion in the 3rd qtr of FY2010. Multiple competitive Technology Maturation contracts are planned to be awarded in 2010 to develop detailed engineering and programmatic plans for key technology demonstrations. Milestone A decision changed due to Material Solution Analysis Phase as defined by Defense AT&L. Additional technology maturation efforts are also being conducted to develop the required component level technologies required to support the advanced capabilities of NGJ.

Technical:

Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604274N, NEXT GENERATION JAMMER			PROJECT NUMBER AND NAME 0557, NEXT GENERATION JAMMER			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	0.000	0.000	127.970					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) This project develops a Next Generation Jammer (NGJ) capability and appropriate technologies required to replace the existing ALQ-99 Tactical Jamming System. NGJ is required to keep pace with advances in threat weapons systems and continuous expansion of the Airborne Electronic Attack (AEA) mission area. NGJ capabilities will address AEA capability gaps, AEA sufficiency gaps and address ALQ-99 shortfalls in scalability, flexibility, supportability, interoperability, availability and capability. NGJ will adopt an adaptable, modular, and open architecture philosophy to combat the increasing capability gap and enable future growth at a reduced operational and sustainment cost.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604274N, NEXT GENERATION JAMMER	PROJECT NUMBER AND NAME 0557, NEXT GENERATION JAMMER	
B. Accomplishments/Planned Program (Cont.)			
NEXT GENERATION JAMMER	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	0.000	0.000	127.970
RDT&E Articles Quantity			
(U) Conduct Next Generation Jammer (NGJ) technical maturation analysis/studies and complete concept refinement phase activities needed to support a Milestone A decision. Initiate NGJ technology development activities to reduce technological risk and determine appropriate set of technologies for use in NGJ.			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009											
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME												
RDTE, N / BA-5	0604274N, NEXT GENERATION JAMMER	0557, NEXT GENERATION JAMMER												
C. OTHER PROGRAM FUNDING SUMMARY: <table><thead><tr><th><u>Line Item No. & Name</u></th><th><u>FY 2008</u></th><th><u>FY 2009</u></th><th><u>FY 2010</u></th><th><u>FY 2010 OCO</u></th></tr></thead><tbody><tr><td>P-1 Line #28, EA-6 SERIES</td><td>206.020</td><td>33.337</td><td>39.977</td><td>45.000</td></tr></tbody></table> D. ACQUISITION STRATEGY: Next Generation Jammer (NGJ) is Pre-Concept Design Milestone. FY09-FY10 activity will focus on technology maturation to include technology development strategy in preparation for Milestone A.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>	P-1 Line #28, EA-6 SERIES	206.020	33.337	39.977	45.000
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>										
P-1 Line #28, EA-6 SERIES	206.020	33.337	39.977	45.000										

R-1 SHOPPING LIST - Item No.96

CLASSIFICATION:

UNCLASSIFIED						DATE:						
Exhibit R-3 Cost Analysis (page 1)						May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604274N, NEXT GENERATION JAMMER			0557, NEXT GENERATION JAMMER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
PRODUCT DEVELOPMENT												
Engineering & Tech Svc												
Primary HDW Develop												
Systems Engineering	TBD	TBD				3.026						
Studies & Analysis (Non FFRDC) NGJ												
Sub-System Prototypes	TBD	TBD				124.844						
Subtotal Product Development			0.000	0.000		127.870						
Remarks:												
SUPPORT												
Subtotal Support			0.000	0.000		0.000						
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						UNCLASSIFIED		DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604274N, NEXT GENERATION JAMMER			0557, NEXT GENERATION JAMMER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date		FY 11			
TEST & EVALUATION												
Subtotal T&E			0.000	0.000		0.000						
Remarks:												
MANAGEMENT												
Program Mgmt Supt - NGJ	WX	TBD				0.050						
Travel - NGJ	TO	TBD				0.050						
Subtotal Management			0.000	0.000		0.100						
Remarks:												
Total Cost			0.000	0.000		127.970						
Remarks:												

R-1 SHOPPING LIST - Item No.96

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																				DATE:				May 2009								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
RDT&E, N / BA-5					0604274N, NEXT GENERATION JAMMER										0557, NEXT GENERATION JAMMER																	
Fiscal Year	FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				2014				2015			
	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																																
AEA NGJ																																
Test & Evaluation Milestones																																
Production Milestones																																

NGJ was previously funded under PE 0604270N as part of project 0556 Airborne Electronic Attack (AEA). NGJ effort was budgeted \$43.806M under PE 0604270N 0556 in FY09.

R-1 SHOPPING LIST - Item No.96

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5	PROGRAM ELEMENT 0604274N, NEXT GENERATION JAMMER			PROJECT NUMBER AND NAME 0557, NEXT GENERATION JAMMER
Schedule Profile	FY 2008	FY 2009	FY 2010	
NGJ				
MDD/Study Award		2Q		
TM Award			2Q	

R-1 SHOPPING LIST - Item No.96

NGJ was previously funded under PE 0604270N as part of project 0556 Airborne Electronic Attack (AEA). NGJ effort was budgeted \$43.806M under PE 0604270N 0556 in FY09.

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)						
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Cost	830.791	845.057	876.374					
3020 Multifunctional Information Distribution System (MIDS) JTRS	79.696	27.265	12.658					
3073 Airborne/Maritime/Fixed Station (AMF) JTRS	96.128	203.012	325.017					
3074 Ground Mobile Radio (GMR) JTRS	262.848	195.776	203.562					
3075 Handheld/Manpack/Small Form Fit (HMS) JTRS	150.586	164.190	133.014					
3076 JTRS Network Enterprise Domain (JNED)	241.533	241.351	202.123					
9999 Digital Modular Radio (DMR)	0.000	1.995	0.000					
9999 Army Tactical Radios for FCS	0.000	11.468	0.000					

In FY08-FY10, Program Element (PE) 0604280N represents the total JTRS RDT&E Budget (includes Multifunctional Information Distribution System (MIDS) JTRS, Airborne and Maritime/Fixed Station (AMF) JTRS, Ground Mobile Radio (GMR) JTRS, Handheld/Manpack/Small Form Fit (HMS) JTRS, and JTRS Network Enterprise Domain (JNED)).

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(AMF) AMF JTRS is a key enabler to the transformation of airborne, maritime, and land based communications toward network-centric operations. AMF JTRS will operate with legacy radios and waveforms used by civilian and military airborne, surface, subsurface, and fixed station platforms. AMF JTRS is intended to provide new radio networking capability as well as replace existing radio systems, which are facing long-term sustainment issues. AMF JTRS capabilities will be incrementally developed, with each increment building on the technological achievements of its predecessor, while providing expanded capabilities.

(MIDS) MIDS- Low Volume Terminal (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 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 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 remapping, and programmable crypto will also be realized in the MIDS JTRS design. The MIDS JTRS core terminal includes four 2 MHz to 2 GHz programmable channels that allow the warfighter to use multiple waveforms in development by JNED. Total core terminal program requirements include: terminal development, F/A-18 Level 0 integration, software hosting (operating environment/waveforms) and production transition.

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

May 2009

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

(GMR) JTRS GMR will provide networking capability using the Wideband Networking Waveform and Soldier Radio Waveform to connect unmanned sensors to decision makers "On-The-Move" (OTM) which will significantly reduce the decision cycle. JTRS GMR will provide the warfighter with mobile Internet-like capabilities such as voice, data, networking and video communications, as well as interoperability with current force and other JTRS radios across the battle space.

(HMS) HMS provides the JTRS capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 will develop SFF-A (1 and 2 Channel) and SFF-C(v)1 running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack, SFF-B, SFF-D, and SFF-J, and 2 Channel Handheld. Phase 2 radios are all Type 1 compliant for use in a classified environment running Ultra High Frequency (UHF), Satellite Communications (SATCOM), High Frequency (HF), Enhanced Position Location and Reporting System (EPLRS), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS), and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

(JNED) JNED is responsible for the development and delivery of software-defined, legacy radio waveforms and networking waveforms that support Net-Centric operational warfare at sea, air and on the ground. Networking waveforms extend the Global Information Grid (GIG) to the last tactical mile and to the warfighter. The JNED team is responsible for (1) the overall management and oversight of the JTRS Waveform program, (2) development, validation, and evolution of a common JTRS Software Communications Architecture (SCA), (3) development and evolution of waveform software applications, (4) development of software cryptographic algorithms and equipment applications, (5) testing and certification of JTRS waveforms, network services, network management, and software products, and (6) JTRS networking and network management software components. Services are responsible for acquiring and fielding host radio hardware and integrating JTRS into Service platforms.

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.

Exhibit R-2, RDT&E Budget Item Justification

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:
May 2009

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5

R-1 ITEM NOMENCLATURE

0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)

B. PROGRAM CHANGE SUMMARY:

Funding:

FY09 President's Budget

FY10 President's Budget

Total Adjustments

FY 2008 FY 2009 FY 2010 FY 2011

835.366

834.650

246.714

FY 2011

830.791

845.057

876.374

-4.575

10.407

629.660

Summary of Adjustments

Congressional Adjustments

Small Business Innovative Research (SBIR) / Federal Technology Transfer

JTRS annual RDT&E transfer to Navy from other Services

JTRS annual RDT&E to O&M transfer for NED Sustainment

DoD Program Adjustments to JTRS Development

Rate/Misc. Adjustments

13.500

-6.400

1.825

491.932

-6.972

155.299

-3.093

-10.599

-4.575

10.407

629.660

Schedule:

Technical:

Exhibit R-2, RDTEN Budget Item Justification

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)					

(U)OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	PY	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total Cost
RDTE, Army PE 0604805A, Project 615 (JTRS Cluster 1 / GMR)	571.542										
RDTE, Army PE 0604805A, Project 61A (JTRS Cluster 5 / HMS)	242.657										
0604805A Command, Control, Communications Sys. - Eng Dev Total	814.199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
RDTE, Army PE 0604280A, Project 162 (AMF JTRS)		0.000	0.000	0.000							
RDTE, Army PE 0604280A, Project 162 (MIDS JTRS)		0.000	0.000	0.000							
RDTE, Army PE 0604280A, Project 162 (JNED)	632.951	0.000	0.000	0.000							
RDTE, Army PE 0604280A, Project 162 (GMR JTRS)		0.000	0.000	0.000							
RDTE, Army PE 0604280A, Project 162 (HMS JTRS)		0.000	0.000	0.000							
0604280A Joint Tactical Radio System Total	632.951	0.000	0.000	0.000							
RDTE, Air Force PE 0604280F, Project 5068 (AMF JTRS)	154.189	0.000	0.000	0.000							
RDTE, Air Force PE 0604280F, Project 5068 (MIDS JTRS)		0.000	0.000	0.000							
RDTE, Air Force PE 0604280F, Project 5068 (JNED)		0.000	0.000	0.000							
RDTE, Air Force PE 0604280F, Project 5068 (GMR JTRS)		0.000	0.000	0.000							
RDTE, Air Force PE 0604280F, Project 5068 (HMS JTRS)		0.000	0.000	0.000							
0604280F Joint Tactical Radio Systems Total	154.189	0.000	0.000	0.000							
O&M, 4A6M - Service Wide Communications (JTRS JPEO)	19.568	16.089	11.041	11.124							
O&M, 4A6M - Service Wide Communications (JNED)			1.823	6.836							
O&M, 4A6M - Service Wide Communications (MIDS)				15.300							
O&M, 4B7N - Space and Electronic Warfare Systems (MIDS)	3.933	0.602	3.668	3.804							

ACQUISITION STRATEGY:
ACQUISITION STRATEGY:
In Feb 2005 all JTRS programs were realigned under the JPEO JTRS. In Nov 2005 the DAE and Senior JTRS Leadership restructured JTRS to emphasize cost and schedule performance while executing a moderate technical risk plan.

(AMF JTRS) FY10 budget supports the JTRS AMF SDD efforts. A joint AF/Navy/Army team manages the development of a common core radio design that will be the basis for satisfying the AMF requirements. AMF completed Pre-System Development and Demonstration (SDD) contracts in early FY07, which were awarded to two competing vendors in late FY04. These efforts included System, Hardware, and Software Development reviews, Preliminary Design Reviews and technical risk reduction activities. The AMF program awarded the SDD contract on March 28, 2008. This effort is leveraging technical solutions derived from efforts resulting from the Pre-SDD contracts as well as from JPEO Enterprise activities. A Critical Design Review (CDR) is planned for 4th quarter FY09. SDD development continues in FY10 through FY12 for the AMF JTRS system Engineering Development Models (EDMs), associated testing and integration, development engineering and management support for associated JTR system components.

(MIDS JTRS) MIDS JTRS development will be initiated 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. The U.S. prime contractors from the MIDS-LVT program (Data Link Solutions and ViaSat, Inc.) will cooperatively design and develop the Core terminal. Each prime contractor will build and qualify Production Verification Terminals. The U.S. will implement a continuous competition strategy between DLS and ViaSat that will be maintained throughout the MIDS JTRS production phase. This strategy was successfully used on MIDS-LVT production. The FY10 budget supports development and implementation of a Crypto Modernization and Frequency Remapping capabilities as well as MIDS system engineering and technical support to the program.

(JNED) JNED, formerly Joint Waveforms Program Office, is responsible for common core activities including developing and evolving the software-defined legacy and networking waveforms that operate on multiple hardware sets and in all operational environments that support network-centric operational warfare, as well as common networking services solutions. Waveform developments will be procured through full and open contract competitions, except when special circumstances support sole source acquisition. The JNED program is developing waveforms and Cryptographic Equipment applications (CEAs) for use within the JTRS community. The module developer will develop CEAs. The FY10 Budget supports continued development of waveforms, supporting software, and testing support, as well as the National Security Agency (NSA) evaluation of software crypto libraries.

Exhibit R-2, RDTEN Budget Item Justification

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)

ACQUISITION STRATEGY (Cont.):

(GMR JTRS) This project supports the JTRS GMR SDD efforts. After a Milestone (MS) B Decision in 3QFY02, the GMR development effort was awarded to develop multichannel ground and airborne configurations (airborne is now realigned under AMF). The JTRS GMR supports an evolutionary acquisition strategy and was based on an aggressive acquisition schedule. In June 2002, a Cost Plus Award Fee (CPAF) contract was competitively awarded to develop or acquire numerous SCA compliant waveforms, define common form-fit-function configurations for vehicular versions of the JTRS hardware, and successfully port the waveforms to JTRS hardware produced by two different developers. Although Waveform development is part of the contract, the Waveform development is funded and managed under the JNED. A software reprogrammable radio providing the warfighter with the multiband and multimode capability, networkable radio system which provides simultaneous voice, data and video communications to increase interoperability, flexibility, and adaptability in support of varied mission requirements for vehicular platforms is being developed. The Engineering Development Models (EDM) design is complete. The FY10 budget supports testing of EDMs with the conclusion of the Production Qualification Test (PQT) and the conducting of the System Integration Test (SIT) and Limited User Test (LUT).

(HMS JTRS) This project supports the JTRS HMS SDD efforts. The JTRS HMS Program began with the development of the HMS Radios following Milestone (MS) B approval on April 26, 2004. HMS uses an evolutionary acquisition strategy and will deliver NSA certified capabilities. Following full and open competition, a single Cost-Plus-Award Fee (CPAF) contract was awarded on July 16, 2004. The contract is structured to address Increment 1. JTRS HMS Increment 1 consists of 2 phases of development. Increment 1, Phase 1 will develop SFF-A (1 and 2 Channel) and SFF-C(v)1 running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack, SFF-B, SFF-D, and SFF-J, which are all Type 1 compliant for use in a classified environment running Ultra High Frequency (UHF), Satellite Communications (SATCOM), High Frequency (HF), Enhanced Position Location and Reporting System (EPLRS), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS), and Single Channel Ground to Air Radio System (SINCGARS) waveforms. The FY10 budget supports integration, testing, continued development of prototypes, and development of EDMs.

MAJOR PERFORMERS:
Prime Contractors: AMF JTRS: SDD Contractor is Lockheed Martin Corporation; MIDS JTRS: Data Link Solutions and ViaSat Inc.; JNED: Boeing, ITT, and Lockheed Martin; GMR JTRS: Boeing; HMS JTRS: General Dynamics C4 Systems

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

Exhibit R-2, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3020 MIDS JTRS				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost	79.696	27.265	12.658					
3020 Multifunctional Information Distribution System (MIDS) JTRS	79.696	27.265	12.658					
RDT&E Articles Qty								
In FY08-FY10, Project No. 3020 represents the total Multifunctional Information Distribution System (MIDS) RDT&E budget for those years. Beginning in FY10, all references to MIDS funding includes funding for both MIDS-LVT and MIDS JTRS. A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: JTRS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements. (MIDS) MIDS- Low Volume Terminal (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 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 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 remapping, and programmable crypto will also be realized in the MIDS JTRS design. The MIDS JTRS core terminal includes three 2 MHz to 2 GHz programmable channels that allow the warfighter to use multiple waveforms in development by JNED. Total core terminal program requirements include: terminal development, F/A-18 Level 0 integration, software hosting (operating environment/waveforms) and production transition.								

Exhibit R-2a, RD TEN Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)	PROJECT NUMBER AND NAME 3020 MIDS JTRS

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10	FY 11
MIDS JTRS	79.696	27.265	12.658	
RDT&E Articles Quantity				

FY08: Continued MIDS JTRS Phase 2B development and qualification of the Core terminal program. Conducted government testing. Provided MIDS systems engineering, Communications Security (COMSEC), logistics, airborne networking, configuration and data management and program management. Continued F/A-18 Level 0 platform integration, test and evaluation including developmental and operational test and supported equipment development.

FY09: Continue MIDS JTRS Phase 2B development and qualification of the Core terminal program. Obtain Core terminal certifications for Communications Security (COMSEC), Electromagnetic Compatibility (EMC) Features, Air Worthiness, SCA compliance and joint interoperability. Conduct Government testing. Achieve MS C. Provide MIDS systems engineering, COMSEC, logistics, airborne networking, configuration and data management and program management. Complete F/A-18 Level 0 platform integration, test and evaluation and support equipment development.

FY10: Provide development and implementation of a Crypto Modernization (CM) capability for MIDS, a mandate required by the NSA, that will replace or update several hardware, software and firmware components within the MIDS terminal. Provide Frequency Remapping development and enhancements, a required Department of Transportation (DOT) mandate to enable the continued use of MIDS Link-16 to remap at least 14 of its 51 data transmission and receipt time slots to frequencies which do not interfere with current and planned Federal Aviation Administration (FAA) safety of flight systems. Provide MIDS systems engineering, COMSEC, logistics, airborne networking, configuration and data management and program management.

Note:

In FY08-FY10, Project No. 3020 represents the total Multifunctional Information Distribution System (MIDS) RDT&E budget for those years.

Exhibit R-3 Cost Analysis (MIDS JTRS page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)							PROJECT NUMBER AND NAME 3020 MIDS JTRS		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
MIDS JTRS HW/SW (Phase 2B Core)	CPIF	DLS Cedar Rapids, IA	115.575	4.426	1Q					0.000	120.001	
MIDS JTRS HW/SW (Phase 2B Core)	CPIF	ViaSat Inc. Carlsbad, CA	119.043	6.394	1Q					0.000	125.437	
MIDS JTRS HW/SW (Phase 2C TTNT JPCP)	CPFF	DLS Cedar Rapids, IA	11.667							0.000	11.667	
MIDS JTRS HW/SW (Phase 2C TTNT JPCP)	CPFF	ViaSat Inc. Carlsbad, CA	5.548							0.000	5.548	
MIDS JTRS HW/SW (Phase 2D TTNT JPCP)	CPIF	DLS Cedar Rapids, IA	0.000							0.000	0.000	
MIDS JTRS HW/SW (Phase 2D TTNT JPCP)	CPIF	ViaSat Inc. Carlsbad, CA	0.000							0.000	0.000	
MIDS JTRS Production Transition	FFP	DLS Cedar Rapids, IA	18.771							0.000	18.771	
MIDS JTRS Production Transition	FFP	ViaSat Inc. Carlsbad, CA	2.768							0.000	2.768	
MIDS JTRS Preoperational Support	CPFF	DLS Cedar Rapids, IA	0.767							0.000	0.767	
MIDS JTRS Preoperational Support	CPFF	ViaSat Inc. Carlsbad, CA	0.163							0.000	0.163	
MIDS JTRS Spec. Development (Phase 2A)	FFP	DLS Cedar Rapids, IA	1.383							0.000	1.383	
MIDS JTRS Spec. Development (Phase 2A)	FFP	ViaSat Inc. Carlsbad, CA	0.704							0.000	0.704	
MIDS JTRS Proposal Prep (Phase 2B Core)	FFP	DLS Cedar Rapids, IA	0.600							0.000	0.600	
MIDS JTRS Proposal Prep (Phase 2B Core)	FFP	ViaSat Inc. Carlsbad, CA	1.922							0.000	1.922	
MIDS Link 16 HW/SW Development	FFP	DLS Cedar Rapids, IA	0.000			4.005	1Q			0.000	4.005	
MIDS Link 16 HW/SW Development	FFP	ViaSat Inc. Carlsbad, CA	0.000			4.004	1Q			0.000	4.004	
Subtotal Product Development			278.911	10.820		8.009				0.000	297.740	
Remarks:												
Development Support												
* F/A-18 Level 0 Development Support (Unique)	WX	China Lake	1.526							0.000	1.526	
* F/A-18 Level 0 Integrated Logistics Support (Unique)	WX	Pax River	0.412	2.703	1Q	0.300	1Q			0.000	3.415	
Subtotal Support			1.938	2.703		0.300				0.000	4.941	
Remarks: In PYs-FY10, Project No. 3020 represents the total MIDS RDT&E budget for those years.												

Exhibit R-3 Cost Analysis (MIDS JTRS page 2)									DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)						PROJECT NUMBER AND NAME 3020 MIDS JTRS			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation												
* F/A-18 Level 0 Developmental Test & Evaluation (Unique)	WX	Pax River	4.209	0.000								
* F/A-18 Level 0 Operational Test & Evaluation (Unique)	WX	China Lake	0.173	1.802	3Q							
* F/A-18 Test Assets	FFP	DLS Cedar Rapids, IA	8.850									
* F/A-18 Test Assets	FFP	ViaSat Inc. Carlsbad, CA	7.365									
* F/A-18 EDMs	FFP	DLS Cedar Rapids, IA	2.740									
* F/A-18 EDMs	FFP	ViaSat Inc. Carlsbad, CA	2.475									
Government Testing	WX	SSC San Diego	1.535	0.150	1Q							
Engineering Support and Labor/SCS Changes	WX	China Lake	8.005	1.304	1Q							
NAVAIR Labor	WX	Pax River	2.686	1.813	1Q	0.600	1Q					
ECP 6277 Preparation	WX	Boeing	1.563	0.400	3Q							
Subtotal T&E			39.601	5.469		0.600						
Remarks: * Items marked with an asterisk (*) designate Navy unique tasks.												
Management Support												
Contractor Engineering Support	CPFF	Various	11.685	2.210	1Q	1.350	1Q					
Government Engineering Support	WX	Various	17.495	3.807	1Q	1.449	1Q					
Program Management Support	CPFF	Various	6.961	2.096	1Q	0.650	1Q					
Airborne Networking Support	WX	SSC San Diego	1.313									
Travel			0.857	0.160	1Q	0.300	1Q					
Subtotal Management			38.311	8.273		3.749						
Total Cost			358.761	27.265		12.658						
Remarks: In PYs-FY10, Project No. 3020 represents the total MIDS RDT&E budget for those years.												

EXHIBIT R4, Schedule Profile																DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																			
RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)												3020 MIDS JTRS																			
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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				
MIDS JTRS Core Terminal								MS C ◆																								
	FAQT																															
					PTTs/PVTs						LRIP Deliveries																					
Test & Evaluation Milestones F/A-18 Level 0 Integration TECHEVAL																																
	▲			DT				▲																								
OPEVAL								OT ▲▲					IOC ★																			

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail					DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			3020 MIDS JTRS				
Schedule Profile		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
	MIDS JTRS Migration Core Terminal								
	Phase 2B: Design, Development, Fabrication and Qualification								
	System Development		2Q						
	Preliminary Design Review (PDR)								
	Critical Design Review (CDR)								
	Quality Design and Build								
	Test Readiness Review (TRR)								
	Contractor Testing (FAQT)	1Q	2Q						
	Milestone C		4Q						
	Government Testing		2Q,3Q						
	Production Verification Terminal Delivery (PVT)		2Q,3Q						
	Production Transition Terminal Delivery (PTT)	4Q	4Q						
	Full Rate Production Decision			1Q					
	Test and Evaluation								
	F/A-18 Level 0 Integration								
	Technical Evaluation (TECHEVAL)	1Q	3Q						
	Operational Evaluation (OPEVAL)		4Q						
	Initial Operational Capability (IOC)			2Q					
	MIDS JTRS TTNT JPCP								
	Phase 2C: Specification Development								

Exhibit R-4a, Schedule Detail

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3020 MIDS JTRS			
Program Title	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
X3020 Multifunctional Information Distribution System (MIDS JTRS)	4.692	4.500	4.500					
Note: In FY08-FY10, funding represents the total MIDS termination liability (TL) funding profile.								

Exhibit R-5 Termination Liability in
Major Acquisition Programs RDTEN

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EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3073 Airborne/Maritime/Fixed Station (AMF) JTRS				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost		96.128	203.012	325.017					
3073 Airborne/Maritime/Fixed Station (AMF) JTRS		96.128	203.012	325.017					

In FY08-FY10, Project No. 3073 represents the total AMF JTRS RDT&E budget for those years.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of common that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(AMF) AMF JTRS is a key enabler to the transformation of airborne, maritime, and land based communications toward network-centric operations. AMF JTRS will operate with legacy radios and waveforms used by military airborne, surface, subsurface, and fixed station platforms. AMF JTRS is intended to provide new radio networking capability as well as replace existing radio systems, which are facing long-term sustainment issues. AMF JTRS capabilities will be incrementally developed, with each increment building on the technological achievements of its predecessor, while providing expanded capabilities.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 3073 Airborne/Maritime/Fixed Station (AMF) JTRS	
(U) B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
AMF JTRS	96.128	203.012	325.017	
RDT&E Articles Quantity				
FY08: Received Milestone B approval in 2nd quarter FY08. System Development & Demonstration (SDD) contract awarded in 2nd Quarter FY08. Began development efforts including hardware and software designs. Continued systems engineering and management support for associated JTR system components. FY09: Continue SDD design activities to Critical Design Review (CDR) planned for 4th quarter FY09; continue EDM hardware and non-waveform software development and integration; continue waveform porting activities; continue platform integration development for AMF test program; and NSA information assurance activities and verification of design. Continue development engineering and management support for associated JTR system components. FY10: Continue EDM hardware and non-waveform software development and integration; continue waveform porting activities; continue platform integration development for AMF test program; conduct initial hardware and software demonstration with the AMF JTR Set-M/F; and continue NSA information assurance activities and verification of design. Continue development engineering and management support for associated JTR system components. Conduct Contractor Development Test Readiness Review for AMF JTR Set-SA; conduct initial hardware/software demonstration with the AMF JTR-Set SA. Note: In FY08-FY10, Project No. 3073 represents the total AMF JTRS RDT&E budget for those years.				

Exhibit R-2a, RDTEN Project Justification

Exhibit R-3 Cost Analysis (AMF JTRS page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3073 Airborne/Maritime/Fixed Station (AMF) JTRS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
MIDS JTRS HW/SW (Phase 2A/2B Core)	CPIF	DLS Cedar Rapids, IA	8.563									
MIDS JTRS HW/SW (Phase 2A/2B Core)	CPIF	ViaSat Inc. Carlsbad, CA	4.078									
AMF JTRS Development - JTR System (Pre-SDD)	CPFF	The Boeing Co, Anaheim, CA	45.603									
AMF JTRS Development - JTR System (Pre-SDD)	CPFF	Lockheed Martin, Manassas, VA	45.335									
AMF JTRS Development - JTR SET (SDD)	CPAF/IF	Lockheed Martin, Manassas, VA	87.005	180.000	2Q	262.789	1Q					
AMF JTRS - Requirements Planning and Risk Reduction	Various	Various	8.662			3.063	1-4Q					
AMF JTRS - Systems Engineering	Various	Various	68.045	9.283	1-4Q	17.364	1-4Q					
Systems Engineering - JTRS Implementation-Navy Unique	Various	Various	15.634									
H/W Development: DMR HF Power Amplifier	FFP	GD DS	4.901									
Systems Engineering - JTF WARNET	Various	Various	7.481									
Subtotal Product Development			295.307	189.283		283.216		0.000				
Remarks: JTF Warnet and DMR are no longer funded on this project.												
Development Support												
AMF JTRS - Acquisition, and ILS Support	Various	Various	9.239	4.054	1-4Q	7.012	1-4Q					
Software Dev: DMR Build 6.4	FFP	GD DS	12.861									
Subtotal Support			22.100	4.054		7.012		0.000				
Remarks: PY column only includes the Navy portion of the budget for AMF JTRS. Prior to FY07, Air Force AMF JTRS funding resided in Air Force PE 0604280F, Project 5068. Prior to FY07, Navy AMF JTRS funding resided in this Navy PE, Project 3073. FY07 and FY08 PYs represent the total AMF JTRS RDT&E budget for those years. In FY09, Project No. 3073 represents the total AMF JTRS RDT&E budget. DMR is no longer funded on this project.												

Exhibit R-3 Cost Analysis (AMF JTRS page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3073 Airborne/Maritime/Fixed Station (AMF) JTRS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
AMF JTRS - Test and Evaluation and Test Support	Various	Various	18.433	4.350	1-4Q	26.446	1-4Q					
DMR T&E (FOTE)	WX	SSC-SD	1.724									
DMR T&E (FOTE)	WX	SSC-CH	1.732									
Subtotal T&E			21.889	4.350		26.446						
Remarks: DMR is no longer funded on this project.												
Management Services												
AMF Business Operations Management and Support	Various	Various	14.506	5.325	1-4Q	8.343	1-4Q					
Subtotal Management			14.506	5.325		8.343						
Remarks:												
Total Cost			353.802	203.012		325.017				Continuing	Continuing	
Remarks: PY column only includes the Navy portion of the budget for AMF JTRS. Prior to FY07, Air Force AMF JTRS funding resided in Air Force PE 0604280F, Project 5068. Prior to FY07, Navy AMF JTRS funding resided in this Navy PE, Project 3073. The FY07 and FY08 PYs represent the total AMF JTRS RDT&E budget for those years. In FY09, Project No. 3073 represents the total AMF JTRS RDT&E budget.												

EXHIBIT R4, Schedule Profile																										DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																
RDT&E, N / BA-5				0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)												3073 Airborne/Maritime/Fixed Station (AMF) JTRS																
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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
AMF JTRS Acquisition Milestone Schedule		MS B ▼																														
AMF JTRS Product Development Schedule		Contract Award ▼						CDR ▼																								

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3073 Airborne/Maritime/Fixed Station (AMF) JTRS			
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Milestone B (MS-B)	2Q							
Contract Award SDD	2Q							
Critical Design Review (CDR)		4Q						
Initial HW/SW Demonstration - SA			3Q					
Initial HW/SW Demonstration - M/F			4Q					
Eng Dev Model (EDM) Delivery-SA								
EDM Delivery-M/F								
Milestone C (MS C)								
Low-Rate Initial Production I -SA								
Low-Rate Initial Production I -M/F								

Exhibit R-4a, Schedule Detail

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				PROJECT NUMBER AND NAME 3073 Airborne/Maritime/Fixed Station (AMF) JTRS		
Program Title	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
X3073 Airborne, Maritime, Fixed Site JTRS (AMF JTRS)	0.000	19.917	17.672					
Note: FY08-10 amounts represent the total termination liability (TL) funding.								

Exhibit R-5 Termination Liability in Major Acquisition Programs RDTEN

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3074 Ground Mobile Radio (GMR JTRS)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost	262.848	195.776	203.562					
3074 Ground Mobile Radio (GMR) JTRS	262.848	195.776	203.562					

In FY08-FY10, Project No. 3074 represents the total Ground Mobile Radio (GMR) JTRS RDT&E budget for those years.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of common that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(GMR) JTRS GMR will provide networking capability using the Wideband Networking Waveform and Soldier Radio Waveform to connect unmanned sensors to decision makers "On-The-Move" (OTM) which will significantly reduce the decision cycle. JTRS GMR will provide the warfighter with mobile Internet-like capabilities such as voice, data, networking and video communications, as well as interoperability with current force and other JTRS radios across the battle space using new networking Waveforms and current Waveforms.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 3074 Ground Mobile Radio (GMR JTRS)	
B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
Ground Mobile Radio (Common)	262.848	195.776	203.562	
RDT&E Articles Quantity				
FY08: Supported the design, development and manufacture of GMR EDMs, technical support, and Radio Application SW Functional Qualification Test. FY09: Supports the design, development, manufacture and delivery of GMR EDMs, technical support, and start of the Production Qualification Test (PQT). FY10: Supports the design, development, manufacture and delivery of GMR EDMs, technical support, System Integration Test (SIT), Limited User Test (LUT), and National Security Agency (NSA) Certification. Note: In FY08-FY10, Project No. 3074 represents the total GMR JTRS RDT&E budget for those years.				

Exhibit R-2a, RDTEN Project Justification

Exhibit R-3 Cost Analysis (JTRS GMR page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3074 Ground Mobile Radio (GMR JTRS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
JTRS GMR GFE	Various	Various	4.000									
JTRS GMR 1 SDD	C/CPAF	BOEING, Anaheim, CA	413.232	157.759	1-4Q	155.619	1-4Q					
JTRS DEVELOPMENT - System Engineering Support	Various	Various	3.148	3.575	1-2Q	7.010	1-2Q					
Technology Development efforts	Various	Various	5.100	9.092	2Q	7.569	2Q					
Subtotal Product Development			425.480	170.426		170.198						
Remarks:												
Development Support												
JTRS Antenna Study	Various	Various	2.025									
JTRS Tech Support	Various	Various	1.940	1.716	1-2Q	3.484	1-2Q					
Subtotal Support			3.965	1.716		3.484						
Remarks:												
PYs column only reflects prior year Navy GMR JTRS costs for FY07-08. Prior to FY07, GMR JTRS funding resided in Army PE 0604805A, Project 615. In FY09-10, Project No. 3074 represents the total GMR JTRS RDT&E budget.												

Exhibit R-3, Project Cost Analysis

Exhibit R-3 Cost Analysis (JTRS GMR page 2)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3074 Ground Mobile Radio (GMR JTRS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
JTRS EPG test bed & test planning	MIPR	EPG, Fort Huachuca, AZ	6.006	1.783	1-4Q	4.100	1-4Q					
JTRS M&S	MIPR	USAIC, Ft. Huachuca, AZ	2.500	2.036	2Q	1.630	2Q					
JTRS Test In-house Spt & Gov activities	Various	Various	4.573	1.747	1-2Q	0.840	1-2Q					
JTRS EOA/SIT/LUT/MOTE Test Activity	Various	EPG, Fort Huachuca, AZ/Various	0.825	3.387	1-3Q	7.682	1-3Q					
Subtotal T&E			13.904	8.953		14.252						
Remarks:												
Contractor Engineering Support												
JTRS Business Engineering Mgmt	Various	Various	7.895	4.984	1-4Q	5.408	1-4Q					
PMO Support	Various	Various	14.035	9.687	1-4Q	10.220	1-4Q					
JTRS MITRE support	MIPR	MITRE, Ft. Monmouth, NJ	0.513									
Subtotal Management			22.443	14.671		15.628						
Total Cost			465.792	195.766		203.562						
Remarks: PYs column only reflects prior year Navy GMR JTRS costs for FY07-08. Prior to FY07, GMR JTRS funding resided in Army PE 0604805A, Project 615. In FY09-10, Project No. 3074 represents the total GMR JTRS RDT&E budget.												

Exhibit R-3, Project Cost Analysis

EXHIBIT R4, Schedule Profile																	DATE: May 2009																					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5					PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)																	PROJECT NUMBER AND NAME 3074 Ground Mobile Radio (GMR JTRS)																
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015									
	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						
Ground Mobile Radio																																						
Acquisition Milestones																																						
EDM Delivery Begin					EDM Delivery																																	
Milestone C																																						
Limited User Test (LUT)																																						
System Integration Test (SIT)																																						
Multi-Service Operational Test and Evaluation (MOTE)																																						
Radio Development Milestones																																						
NSA Certification																																						
Capstone Critical Design Review																																						
EDM Procure/Build																																						
Test & Evaluation Milestones																																						
Production Qualification Test (PQT)																																						

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail

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Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3074 Ground Mobile Radio (GMR JTRS)			
Program Title	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
X3074 Ground Mobile Radio (GMR JTRS)	42.001	32.416	14.132					
Note: In FY08-FY10, GMR JTRS represents the total termination liability (TL) funding profile.								

Exhibit R-5 Termination Liability in Major Acquisition Programs RDTEN

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 3075 Handheld/Manpack/Small Form Fit (HMS JTRS)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost	150.586	164.190	133.014					
3075 Handheld, Manpack, Small Form Fit (HMS) JTRS	150.586	164.190	133.014					

In FY08-FY10, Project No. 3075 represents the total HMS JTRS RDT&E budget for those years.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of common that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(HMS) HMS provides the JTRS capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 will develop SFF-A (1 and 2 Channel) and SFF-C(v)1 running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack, SFF-B, SFF-D, and SFF-J, and 2 Channel Handheld. Phase 2 radios are all Type 1 compliant for use in a classified environment running Ultra High Frequency (UHF), Satellite Communications (SATCOM), High Frequency (HF), Enhanced Position Location and Reporting System (EPLRS), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS), and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 3075 Handheld/Manpack/Small Form Fit (HMS JTRS)	
(U) B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
Handheld/Manpack/Small Form Fit (Common)	150.586	164.900	133.014	
RDT&E Articles Quantity				
FY08: Supported the design, development and manufacture of Small Form Fit D (SFF-D); Engineering Development Modules (EDM); Technical support; Increment 1, Phase 1 Contractor Development Test (CDT) and Government Development Test (GDT). FY09: Supports the CDT and GDT for Phase 1 radios; Milestone C for Phase 1 SFF-C(v)1; technical support for Phase 1; Phase 2 design and development for EDMs; Phase 2 Design Readiness Review (DRR); technical support for Phase 2. FY10: Supports Phase 1 First Article Test (FAT), Phase 1 Operational Test (OT); and Phase 1 Information Assurance certification; technical support for Phase 1; Phase 2 EDM manufacturing, CDT, and GDT; technical support for Phase 2. Note: In FY08-FY10, Project No. 3075 represents the total HMS JTRS RDT&E budget for those years.				

Exhibit R-2a, RDTEN Project Justification

Exhibit R-3 Cost Analysis (JTRS HMS page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3075 Handheld/Manpack/Small Form Fit (HMS JTRS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
JTRS HMS Design, Development and Manufacture of Engineering Development Models (EDMs)	C/CPAF	General Dynamics C4 Systems, Scottsdale, AZ	217.949	127.980	1Q	81.979	1Q					
JTRS HMS Development System Engineering Support	Various	Various	18.226	7.338	1-2Q	6.779	1-2Q					
Technology Development efforts	Various	Various	3.217	5.100	2Q	5.355	2Q					
Subtotal Product Development			239.392	140.417		94.113						
Remarks:												
Development Support												
JTRS Technical Support	Various	Various	11.440	4.056	1-3Q	5.209	1-3Q					
Subtotal Support			11.440	4.056		5.209						
Remarks: PYs column only reflects prior year Navy HMS costs for FY07-08. Prior to FY07, HMS JTRS funding resided in Army PE 0604805A, Project 61A. In FY09-10, Project No. 3075 represents the total HMS JTRS RDT&E budget.												

Exhibit R-3, Project Cost Analysis

Exhibit R-3 Cost Analysis (JTRS HMS page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3075 Handheld/Manpack/Small Form Fit (HMS JTRS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
JTRS EPG test bed and planning	MIPR	EPG, Ft. Huachuca, AZ	0.200	0.100	1Q	0.000						
JTRS Modeling and Simulation	MIPR	USAIC, Ft. Huachuca, AZ	0.550	0.100	4Q	0.100	4Q					
JTRS Test In-house Support & Government	Various	Various	7.153	2.736	1-3Q	10.340	1-3Q					
Phase 1 T&E (CDT, GDT, LUT, OT)	Various	Various	0.150	5.875		5.90						
Phase 2 T&E (CDT, GDT, LUT, OT)	Various	Various	0.000	0.250		5.750						
Subtotal T&E			8.053	9.061		22.090						
Remarks:												
Contractor Engineering Support												
Project Management Office Support	Various	Various	18.045	7.371	1-4Q	8.941	1-4Q					
JTRS Business/ Engineering Management	Various	Various	6.540	3.284	1-4Q	2.660	1-4Q					
Subtotal Management			24.585	10.655		11.602						
Remarks:												
Total Cost			283.470	164.190		133.014						
Remarks: PYs column only reflects prior year Navy HMS costs for FY07-08. Prior to FY07, HMS JTRS funding resided in Army PE 0604805A, Project 61A. In FY09-10, Project No. 3075 represents the total HMS JTRS RDT&E budget.												

Exhibit R-3, Project Cost Analysis

EXHIBIT R4, Schedule Profile														DATE: May 2009																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)												PROJECT NUMBER AND NAME 3075 Handheld/Manpack/Small Form Fit (HMS JTRS)																
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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
Handheld / Manpack / Small Form Fit Increment 1, Phase 1 Type 2 DRR Regression CDT GDT MS C IOT&E	Type 2 DRR		▲			Reg. CDT																										
Increment 1, Phase 2 Type 1 DRR CDT GDT Phase 2 LRIP IPR OT LUT																																

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3075 Handheld/Manpack/Small Form Fit (HMS JTRS)			
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Increment 1, Phase 1								
Type 2 DRR	3Q							
Regression CDT	4Q	1-2Q						
GDT		2Q						
MS C		4Q						
IOT&E			2Q					
Increment 1, Phase 2								
Type 1 DRR		2Q						
CDT			1-2Q					
GDT			2-4Q					
MS C								
LUT								
OT								

Exhibit R-4a, Schedule Detail

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME 3075 Handheld/Manpack/Small Form Fit (HMS JTRS)		
Program Title	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
X3075 JTRS Handheld / Manpack / Small Form Fit (HMS)	21.228	20.837	7.500					
Note: In FY08-FY10, HMS JTRS represents the total termination liability (TL) funding profile.								

Exhibit R-5 Termination Liability in Major Acquisition Programs RDTEN

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			3076 JTRS Network Enterprise Domain (JNED)				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost		241.533	241.351	202.123					
3076 JTRS Network Enterprise Domain (JNED)		241.533	241.351	202.123					

In FY08-FY10, Project No. 3076 represents the total JNED RDT&E budget.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(JNED) JNED is responsible for the development and delivery of software-defined, legacy radio waveforms and networking waveforms that support Net-Centric operational warfare at sea, air and on the ground. Networking waveforms extend the Global Information Grid (GIG) to the last tactical mile and to the warfighter. The JNED team is responsible for (1) the overall management and oversight of the JTRS Waveform program, (2) development, validation, and evolution of a common JTRS Software Communications Architecture (SCA), (3) development and evolution of waveform software applications, (4) development of software cryptographic algorithms and equipment applications, (5) testing and certification of JTRS waveforms, network services, network management, and software products, and (6) JTRS networking and network management software components. Services are responsible for acquiring and fielding host radio hardware and integrating JTRS into Service platforms.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)	PROJECT NUMBER AND NAME 3076 JTRS Network Enterprise Domain (JNED)

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10	FY 11
JTRS Network Enterprise Domain (JNED)	241.533	241.351	202.123	
RDT&E Articles Quantity				

FY08 (\$241.533): Continued development and acquisition of Increment 1 networking waveforms that support Net-Centric operational warfare at sea, air and on the ground to extend the Global Information Grid (GIG) to the last tactical mile and the warfighter. Continued JNED program support and other related activities.

Networking Waveforms:

- **Wideband Networking Waveform (WNW)** (\$49.675) is a high data rate networking waveform application that provides the lower tactical Internet backbone and connects tactical forces across the battle sphere. WNW will feature two signals-in-space (SiS), which are the Orthogonal Frequency Division Multiplexing (OFDM) and Anti-Jam (AJ). WNW will provide high throughput, dynamically adaptable connectivity for the exchange of Internet Protocol (IP) based voice, data, and video traffic. WNW will support network nodes on mobile, airborne, and maritime platforms. WNW includes networking services, security, High Assurance IP Equipment (HAIPE) capabilities, red-black switching, and internal routing of other WNW signals. Completed development for and delivered WNW v3.0 in 2Q FY08 and WNW v3.1 in 3Q FY08. Platforms include: GMR and AMF.
- **Soldier Radio Waveform (SRW)** (\$34.763) will operate on JTR sets to provide a networked battlefield communications capability for disadvantaged users engaged in land combat operations and will support voice, data, and video communications on and over the immediate battlefield. These forces include vehicles, rotary wing, dismounted soldiers, munitions, sensors, and unmanned air vehicles (UAV). Functional software applications will use SRW enabled JTR sets over IP capable networks and sub-networks. SRW will be interoperable with higher throughput, IP-based network waveforms, such as WNW. As applicable, these IP-based networking waveforms will enable information exchanges through the GIG to the soldier and provide entirely new capabilities for battlefield communication and information sharing. Completed development and performed initial FQT of SRW v1.0c Unattended Ground Sensor / Non-line-of-sight (UGS/NLOS) in 4Q FY08. Platforms include: GMR, AMF and HMS.
- **Mobile User Objective System (MUOS)** (\$2.821) will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems. MUOS offers secure streaming video, netted communications, and voice/data in real time to provide essential connectivity. JNED program will modify this waveform, making it compatible and certifiable to meet DoD security requirements plus enable porting to JTR sets. Began Development effort of MUOS v3.0 in 3Q FY08. Platforms include: HMS and AMF.
- **Joint Airborne Networking -Tactical Edge (JAN-TE)** (\$19.450) will operate on JTR airborne sets to provide a networked tactical communications capability for tactical aircraft. JAN-TE will provide increased throughput, highly responsive connectivity, and ad hoc mobile networking for fighters engaged in air operations. This networking waveform is uniquely designed and engineered for highly maneuverable, fast moving aircraft for rapidly establishing networks to share high value data communications. PDR conducted in 2Q FY08. Platform includes: MIDS.

Network Enterprise Services (\$54.759): Continued development and acquisition of JTRS Network Enterprise Services (JNES) to include JTRS Enterprise Network Manager (JENM) and Enterprise Network Services (ENS). Continued to provide JNED technical support, including waveform development, systems engineering, spectrum allocation, system security engineering and problem resolution and support of Software Communications Architecture (SCA) activities. Completed development of JTRS WNW Network Manager (JWNM) Version 3.0 in 3Q FY08.

Legacy Radio Waveforms (\$80.065) Continued the development and acquisition of legacy software and other related activities to support the legacy waveform development of High Frequency (HF). Completed Build 2.2 of the Enhanced Position Location and Reporting System (EPLRS) development and performed FQT in 1Q FY08. Provided technical guidance to Platform Program Management offices (PMO). Continued to support Waveform integration, test and evaluation to include hardware and software waveform certification process (SCA compliance testing) to meet program requirements Continued JNED program management office support. Continued Software Trouble Report (STR) correction to both software-defined legacy radio and networking waveforms.

Note:
In FY08-FY10, Project No. 3076 represents the total JNED RDT&E budget for those years.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 3076 JTRS Network Enterprise Domain (JNED)	

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10	FY 11
JTRS Network Enterprise Domain (JNED)	241.533	241.351	202.123	
RDT&E Articles Quantity				

FY09 (\$241.351): Continue development and acquisition of Increment 1 networking waveforms that support Net-Centric operational warfare at sea, air and on the ground to extend the GIG to the last tactical mile and the warfighter. Continue JNED program support and other related activities.

Networking Waveforms:

- **WNW** (\$58.263) is a high data rate networking waveform application that provides the lower tactical Internet backbone and connects tactical forces across the battle sphere. WNW will feature two signal in-space (SiS), which are the Orthogonal Frequency Division Multiplexing (OFDM) and Anti-Jam (AJ). WNW will provide high throughput, dynamically adaptable connectivity for the exchange of Internet Protocol (IP) based voice, data, and video traffic. WNW will support network nodes on mobile, airborne, and maritime platforms. WNW includes networking services, security, High Assurance IP Equipment (HAiPE) capabilities, red-black switching, and internal routing of other WNW signals. Complete development and deliver WNW v3.5 in 1Q FY09 and v3.6 in 3Q FY09. Complete development and perform FQT for v4.0 in 4Q FY09. Platforms include: GMR and AMF.
- **SRW** (\$18.032) will operate on JTR sets to provide a networked battlefield communications capability for disadvantaged users engaged in land combat operations and will support voice, data, and video communications on and over the immediate battlefield. These forces include vehicles, rotary wing, dismounted soldiers, munitions, sensors, and unmanned air vehicles (UAV). Functional software applications will use SRW enabled JTR sets over IP capable networks and sub-networks. SRW will be interoperable with higher throughput, IP-based network waveforms, such as WNW. As applicable, these IP-based networking waveforms will enable information exchanges through the GIG to the soldier and provide entirely new capabilities for battlefield communications and information sharing. Complete development and perform FQT for v1.0c Soldier Systems (SS) in 2Q FY09 and version Delta for HMS in 3Q FY09. Begin development of SRW v1.1c. Platforms include: GMR, AMF and HMS.
- **MUOS** (\$41.296) will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems. MUOS offers secure streaming video, netted communications, and voice/data in real time to provide essential connectivity. JNED program will modify this waveform, making it compatible and certifiable to meet DoD security requirements plus enable porting to JTR sets. Continue development effort of MUOS v3.0 in FY09. Platforms include: HMS and AMF.
- **JAN-TE** (\$0.386) will operate on JTR airborne sets to provide a networked tactical communications capability for tactical aircraft. JAN-TE will provide increased throughput, highly responsive connectivity and ad hoc mobile networking for fighters engaged in air operations. This networking waveform is uniquely designed and engineered for highly maneuverable, fast moving aircraft for rapidly establishing networks to share high value data communications. USD(AT&L) directed that the development of the JAN-TE waveform be discontinued after Critical Design Review in October 2008.

Network Enterprise Services (\$51.567): Continue development and acquisition of JTRS Network Enterprise Services (JNES) to include JTRS Enterprise Network Manager (JENM) and Enterprise Network Services (ENS). Continue to provide JNED technical support, including waveform development, systems engineering, spectrum allocation, system security engineering and problem resolution an support of Software Communications Architecture (SCA) activities. Complete development of JTRS WNW Network Manager (JWNM) v3.5 in 1Q FY09. Complete development and perform FQT for JWNM v4.0 in 4Q FY09. Complete development and perform FQT for Soldier Radio Waveform Network Manager (SRWNM) 1.0R in 4Q FY09.

Legacy Radio Waveforms (\$71.807) Continue the development and acquisition of legacy software and other related activities to support the legacy waveform development of High Frequency (HF). Complete the development and perform FQT for Link 16 in 2Q FY09. Continue to provide JNED technical support, including waveform development, systems engineering, spectrum allocation, system security engineering and problem resolution and support of Software Communications Architecture (SCA) activities. Provide technical guidance to the Platform Program Management offices (PMO). Continue to support waveform integration, test and evaluation to include hardware and software waveform certification process (SCA compliance testing) to meet program requirements. Continue JNED program management office support. Continue Software Trouble Report (STR) correction to both software-defined legacy radio and networking waveforms. Provide post FQT support to platforms during Legacy Waveform porting activities.

Note:
In FY08-FY10, Project No. 3076 represents the total JNED RDT&E budget for those years.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)	PROJECT NUMBER AND NAME 3076 JTRS Network Enterprise Domain (JNED)

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10	FY 11
JTRS Network Enterprise Domain (JNED)	241.533	241.351	202.123	
RDT&E Articles Quantity				

FY10 (\$202.123): Continue development and acquisition of Increment 1 networking waveforms that support Net-Centric operational warfare at sea, air and on the ground to extend the GIG to the last tactical mile and the warfighter. Continue JNED program support and other related activities.

Networking Waveforms:

- **WNW** (\$18.489) is a high data rate networking waveform application that provides the lower tactical Internet backbone and connects tactical forces across the battle sphere. WNW will feature two signals-in-space (SiS), which are the Orthogonal Frequency Division Multiplexing (OFDM) and Anti-Jam (AJ). WNW will provide high throughput, dynamically adaptable connectivity for the exchange of Internet Protocol (IP) based voice, data, and video traffic. WNW will support network nodes on mobile, airborne, and maritime platforms. WNW includes networking services, security, High Assurance IP Equipment (HAPE) capabilities, red-black switching, and internal routing of other WNW signals. Provide post FQT support to platforms during WNW porting activities. Platforms include: GMR and AMF.
- **SRW** (\$7.494) will operate on JTR sets to provide a networked battlefield communications capability for disadvantaged users engaged in land combat operations and will support voice, data, and video communications on and over the immediate battlefield. These forces include vehicles, rotary wing, dismounted soldiers, munitions, sensors, and unmanned air vehicles (UAV). Functional software applications will use SRW enabled JTR sets over IP capable networks and sub-networks. SRW will be interoperable with higher throughput, IP-based network waveforms, such as WNW. As applicable, these IP-based networking waveforms will enable information exchanges through the GIG to the soldier and provide entirely new capabilities for battlefield communications and information sharing. Complete development and FQT of SRW v1.1c in 2QFY10. Provide post FQT support to platforms during SRW v1.0c porting activities. Platforms include: GMR, AMF and HMS.
- **MUOS** (\$19.863) will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems. MUOS offers secure streaming video, netted communications, and voice/data in real time to provide essential connectivity. JNED program will modify this waveform, making it compatible and certifiable to meet DoD security requirements plus enable porting to JTR sets. Continue development of MUOS v3.0. Platforms include: HMS and AMF.

Network Enterprise Services (\$76.258): Continue development and acquisition of JTRS Network Enterprise Services (JNES) to include JTRS Enterprise Network Manager (JENM) and Enterprise Network Services (ENS). Continue to provide JNED technical support, including waveform development, systems engineering, spectrum allocation, system security engineering, problem resolution and support of Software Communications Architecture (SCA) activities. Complete development and perform FQT for Soldier Radio Waveform Network Manager (SRWNM) 1.0+in 3Q FY10 and JENM Phase 1 in 3Q FY10.

Legacy Radio Waveforms (\$80.019) Continue to support waveform integration, test and evaluation to include hardware and software waveform certification process (SCA compliance testing) to meet program requirements. Complete development and perform FQT for HF v4.0 in 1Q FY10. Continue JNED program management office support. Begin Software Trouble Report (STR) correction to both software-defined legacy radio and networking waveforms. Continue to provide post FQT support to platforms during Legacy Waveform porting activities. Begin enhancements to legacy waveforms.

Note:
In FY08-FY10, Project No. 3076 represents the total JNED RDT&E budget.

Exhibit R-2a, RDTEN Project Justification

Exhibit R-3 Cost Analysis (JTRS NED page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)				3076 JTRS Network Enterprise Domain (JNED)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
Architecture Development and Validation, Evolve and Provide CM Mgmt of SCA	Various	Various	1.500	0.150	1Q	0.482	1-2Q					
Waveform Development:												
Wideband Networking Waveform (WNNW)	C/CPAF	Boeing, Huntington Beach, CA	60.749	58.263	1Q							
Soldier Radio Waveform (SRW)	CPIF	ITT, Clifton NJ	62.599	17.882	1Q	7.494						
Mobile User Objective System (MUOS)	CPIF/AF	Lockheed Martin, Sunnyvale, CA	4.292	41.296	2Q	19.863	1-2Q					
Joint Airborne Networking -Tactical Edge (JAN-TE)	CPFF	Rockwell Collins, Cedar Rapids IA	36.201	0.386	1Q	0.000						
Legacy Software-Defined Radio Waveforms	Various	Various	34.044	8.936	1Q	36.666	1-2Q					
Network Enterprise Services Development	Various	Various	142.832	51.567	1Q	65.612	1-2Q					
Post FQT / Software Sustainment	Various	Various		1.928	1Q	32.239	1-2Q					
Certification (interim SCA Compliance Testing)	Various	Various	5.044	3.265	1Q	2.093	1-2Q					
Subtotal Product Development			347.261	183.673		164.449						
Remarks:												
Development Support												
FFRDC - MITRE Technical Support	MIPR	MITRE, Ft. Monmouth, NJ	5.883	2.255	1Q	2.274	1-2Q					
Subtotal Support			5.883	2.255		2.274						
Remarks:												
PYs column only reflects prior year Navy JNED costs for FY07-08. Prior to FY07, funding for JNED resided in Army PE 0604280A, Project 162. In FY09-10, Project No. 3076 represents the total JNED RDT&E budget.												

Exhibit R-3 Cost Analysis (JTRS NED page 2)										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3076 JTRS Network Enterprise Domain (JNED)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation													
N/A	N/A	N/A	0.000	0.000		0.000							
Subtotal T&E			0.000	0.000		0.000							
Remarks:													
Contractor Engineering Support													
Program Management Support	Various	Various	109.888	55.423	1Q	35.400	1-2Q						
Subtotal Management			109.888	55.423		35.400							
Remarks:													
Total Cost			463.032	241.351		202.123							
Remarks: PYs column only reflects prior year Navy JNED costs for FY07-08. Prior to FY07, funding for JNED resided in Army PE 0604280A, Project 162. In FY09-FY10, Project No. 3076 represents the total JNED RDT&E budget.													

Exhibit R-3, Project Cost Analysis

EXHIBIT R4, Schedule Profile																DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME															
RDT&E, N / BA-5					0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)												3076 JTRS Network Enterprise Domain (JNED)															
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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
Test & Evaluation Milestones																																
Networking Waveforms																																
SRW																																
WNW																																
MUOS																																
Network Enterprise Services																																
JWNM																																
JENM																																
SRWNM																																
ENS																																
Legacy Waveforms																																
Link 16																																
HF																																
EPLRS																																

Exhibit R-4, Schedule Profile

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Exhibit R-4a, Schedule Detail				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5	0604280N JOINT TACTICAL RADIO SYSTEMS (JT			3076 JTRS Network Enterprise Domain (JNED)				
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Networking Waveforms								
SRW v1.0c (UGS/NLOS)	4Q							
SRW V1.0c (SS)		2Q						
SRW V1.0c Delta for HMS		3Q						
SRW v1.1c			2Q					
WNW v 3.0	2Q							
WNW v 3.1	3Q							
WNW v 3.5		1Q						
WNW v 3.6		3Q						
WNW v 4.0		4Q						
MUOS 3.0								
Network Enterprise Services								
JWNNM v 3.0	3Q							
JWNNM v 3.5		1Q						
JWNNM v 4.0		4Q						
JENM Phase 1			3Q					
JENM Phase 2								
JENM Phase 3								
SRWNNM 1.0R		4Q						
SRWNNM 1.0+			3Q					
ENS Phase 1								
Legacy Waveforms								
Link 16		2Q						
HF v4.0			1Q					
EPLRS v2.2	1Q							

Exhibit R-4a, Schedule Detail

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Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 3076 JTRS Network Enterprise Domain (JNED)			
Program Title	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
X3076 JTRS Network Enterprise Domain (JNED)	24.713	21.664	4.366					
Note: FY08-FY10 funding above represents the total JNED termination liability (TL) funding profile.								

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
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 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost		1.195						
Digital Modular Radio (DMR)		1.195						

(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.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS	PROJECT NUMBER AND NAME 9999 Congressional Increases		
(U) B. Accomplishments/Planned Program				
	FY08	FY09	FY10	FY11
Digital Modular Radio (DMR)		1.195		
RDT&E Articles Quantity				
FY09: Developed Workstation Authentication and Software Signature version 6.4.4 for a DMR security enhancement required by the National Security Agency (NSA).				

Exhibit R-2a, RDTEN Project Justification

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT NUMBER AND NAME 9999 Congressional Increases			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Project Cost	0.000	11.468	0.000					
Army Tactical Radios for FCS	0.000	11.468	0.000					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

JTRS is the Department of Defense (DoD) family of **common software-defined programmable radios** that will form the foundation of information radio frequency transmission for Joint Vision 2020. The JTRS family of products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. JTRS products will provide transformational communication capabilities for the warfighter. JTRS is intended to support communications readiness and mission success, in the 2 MegaHertz (MHz) to 2 GigaHertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. JTRS will be a hardware-configurable and software-programmable radio system that provides increased interoperability, flexibility and adaptability to support varied mission requirements.

(GMR) JTRS GMR will provide networking capability using the Wideband Networking Waveform and Soldier Radio Waveform to connect unmanned sensors to decision makers "On-The-Move" (OTM) which will significantly reduce the decision cycle. JTRS GMR will provide the warfighter with mobile Internet-like capabilities such as voice, data, networking and video communications, as well as interoperability with current force and other JTRS radios across the battle space **using new networking Waveforms and current Waveforms.**

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604280N JOINT TACTICAL RADIO SYSTEMS (JTRS)		PROJECT NUMBER AND NAME 9999 Congressional Increases	
B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
Future Combat Systems (FCS)	0.000	11.468	0.000	
RDT&E Articles Quantity				
FY09: This is supporting the design, development, manufacture and delivery of GMR Engineering Design Models (EDM).				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	622.812	596.109	0.000				
2464 / DD(X) Sys Design, Dev & Integration	442.141	351.278	0.000				
2735 / VSR - Volume Search Radar	2.408	0.000	0.000				
3105 / BLK II Seeker Technology Development	0.973	0.000	0.000				
3106 / Combat System Integration	0.819	57.467	0.000				
3107 / CG(X) DEVELOPMENT	84.078	84.518	0.000				
4009 / Advanced Gun System (AGS) on DD(X)	71.956	96.563	0.000				
9999 / CONGRESSIONAL ADDS	20.437	6.283	0.000				

A. MISSION DESCRIPTION:

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Program Element (PE) provides funds for development of the DDG 1000 Class of U. S. Navy surface combatants, and CG(X), next generation cruiser development. The mission of the DDG 1000 class is to provide affordable and credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DDG 1000 will provide advanced land attack capability in support of the ground campaign and contribute to Naval, Joint or Combined battlespace dominance in littoral operations. DDG 1000 will establish and maintain surface and sub-surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DDG 1000 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. All funding for FY 10 was realigned to PE 0204202N for DDG-1000 and to PE 0204201N for CG(X).

The following Congressional adds are contained in this Program Element:

FY08 Congressional Adds:

-Project 9999-Congressional Adds: \$20.437 - This project consists of the following FY08 Congressional adds: Floating Area Network, Permanent Magnet Motor, Wireless Maritime Inspection System, Bio Nano Micro Electro-Mechanical Systems (MEMS) for Defense Applications, SmartLink Planar Scanner Antenna Modernization, and Advanced Wireless Encryption Module.

FY09 Congressional Adds:

-Project 9999 - Congressional Adds: \$6.283 - -Floating Area Network, Bio Nano Micro-Electro-Mechanical Systems (MEMS) Center for Defense Applications

CLASSIFICATION:		UNCLASSIFIED																																													
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING																																													
B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 2008</th> <th style="text-align: right;">FY 2009</th> <th style="text-align: right;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>FY09 President's Budget</td> <td style="text-align: right;">629.323</td> <td style="text-align: right;">678.936</td> <td style="text-align: right;">822.728</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: right;">622.812</td> <td style="text-align: right;">596.109</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">-6.511</td> <td style="text-align: right;">-82.827</td> <td style="text-align: right;">-822.728</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-82.519</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td style="text-align: right;">-5.735</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-0.094</td> <td style="text-align: right;">-822.728</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td style="text-align: right;">-0.776</td> <td style="text-align: right;">-0.214</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">-6.511</td> <td style="text-align: right;">-82.827</td> <td style="text-align: right;">-822.728</td> </tr> </tbody> </table> All funding for FY 10 was realigned to PE 0204202N for DDG-1000 and to PE 0204201N for CG(X).				Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	629.323	678.936	822.728	FY10 President's Budget	622.812	596.109	0.000	Total Adjustments	-6.511	-82.827	-822.728	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-82.519	0.000	SBIR/STTR/FTT Assessment	-5.735	0.000	0.000	Program Adjustments	0.000	-0.094	-822.728	Rate/Misc Adjustments	-0.776	-0.214	0.000	Total	-6.511	-82.827	-822.728
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	442.141	351.278	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project encompasses DDG 1000 development efforts required to deliver the Flight I DDG 1000 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; hullform testing at Naval Surface Warfare Center, Carderock; conducting testing communication and sensor aperture cosite and electromagnetic interference risk reductions testing for critical arrays; planning for Integrated Power Systems (IPS) and ship control system testing and integration; Tomahawk restrained firing test; integration of Line of Sight (LOS)/Below Line of Site (BLOS) communication capability; and develop an alternative to Full Ship Shock Trials (FSSTs). In FY 10, the funding has been realigned to PE 0204202N.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	408.916	312.759	0.000
RDT&E Articles Quantity	0	0	0
Development of the DDG 1000 Flight 1 software, Commercial Off the Shelf/Government Off the Shelf (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 using an incremental release process (Software (SW) Releases 4-6). Conduct the following events for the remaining software releases: Software Release 4 - completed, Software Integration and Test (SWIT), Software Integration Readiness Review (SIRR), Test Readiness Review (TRR), System Acceptance Testing (SAT) and Software Certification Panel (SCP) in FY08; Software(SW) Release 5 - completed SW Preliminary Design Review (S-PDR), SW Critical Design Review (S-CDR) and entered into the Design, Code, Test and Integration phase in FY08; complete the Design, Code, Test and Integration phase; conduct Software Integration and Test (SWIT) and Software Integration Readiness Review (SIRR) activities in FY09; Software Release 6 - conducted SW system engineering activities in FY08; conduct Software Specification Review (SSR) and begin preliminary design activities in FY09; Conduct all developmental software test planning, conduct test data analysis and reporting in accordance with the DDG 1000 TEMP. Perform total ship system design analysis. Perform systems engineering, develop, and fully integrate into the DDG 1000 System an Electric Ship (ES) system for DDG 1000. Integrate Next Generation Command and Control Processor (NGC2P) by finalizing Data Link Concept of Operations, complete hardware engineering, finalize software requirements definition, commence software development and integration, plan for software testing and certification. Develop, test and integrate the Common Display System (CDS) consoles and medium/large screen displays.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	29.225	33.519	0.000
RDT&E Articles Quantity	0	0	0
Completion and testing of ship and warfare system engineering development models. Complete hullform testing at Naval Surface Warfare Center (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. Conducted 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. Conduct signature range Non-Recurring Engineering (NRE) to upgrade ranges to support DDG 1000 test and evaluation.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.000	5.000	0.000
RDT&E Articles Quantity	0	0	0
This funding is to support DDG 1000 specific testing on the Self Defense Test Ship.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration			
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
BLI 5300/SCN	0.000	0.000	309.636						309.636
PE0204202N/RDT&EN	0.000	0.000	539.053						539.053
BLI 211900 / SCN	2,906.867	1,504.297	1,084.161						5,495.325
D. ACQUISITION STRATEGY: The funding in this program element supports the DDG 1000/DDG 1001 dual lead ship acquisition strategy.									
E. 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:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 2735/VSR - Volume Search Radar		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	2.408	0.000	0.000				
RDT&E Articles Qty	0	0	0				
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 DDG 1000. This provides DDG 1000 and other applicable surface ships with an affordable, high performance air search radar. This system is based on solid state, active array radar technology and will provide search, detect, and track while dramatically reducing manning and life-cycle costs associated with multiple systems that perform these functions today. VSR provides long range above-the-horizon surveillance and timely cueing to Multi-Function Radar (MFR). A Test Article was available in FY 06 to support Developmental Test/Operational Assessment (DT/OA) land-based testing.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 2735/VSR - Volume Search Radar	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.408	0.000	0.000
RDT&E Articles Quantity	0	0	0
Government Technical Engineering Services for VSR Engineering and Manufacturing Development. Performed oversight and assessment of VSR Engineering and Manufacturing Development efforts including Test and Evaluation. Supported VSR Land Based Testing at the Surface Warfare Engineering Facility (SWEF) at NWSC PHD through 2nd quarter FY08. VSR will be moved to Wallops Island Engineering Test Center (WIETC) during 3rd quarter FY08 to continue VSR Land Based Testing.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
BLI 5300 / SCN	0.000	0.000	309.636
PE0204202N / RDT&EN	0.000	0.000	539.053
BLI 211900 / SCN	2,906.867	1,504.297	1,084.161
D. ACQUISITION STRATEGY:			
The funding in this program element supports the DDG 1000/DDG 1001 dual lead ship acquisition strategy.			
E. MAJOR PERFORMERS:			
DDG1000 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:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 3105/BLK II Seeker Technology Development		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.973	0.000	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for the missile seeker development and integration within the mission system computer programs into the CG (X) class mission system. These missile seeker development and missile and combat system integration efforts include systems engineering, analysis, programmatic support, computer program development/modification, interface design, technical documentation, test site development and system testing to ensure fully functional systems integration.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 3105/BLK II Seeker Technology Development			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				0.973		0.000		0.000	
RDT&E Articles Quantity				0		0		0	
FY08: Initiated CG (X) Missile Seeker Preliminary Design studies and analysis to support missile and total ship system requirements documentation.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					Total Cost
PE 0204201N / RDT&EN		0.000	0.000	150.022					150.022
D. ACQUISITION STRATEGY:									
TBD - The Acquisition Strategy is currently in development in accordance with concept resulting from Analysis of Alternative and is scheduled to be completed following Milestone A.									
E. MAJOR PERFORMERS:									
Contractors - TBD - Based on results of Analysis of alternatives developed for Milestone A and the Acquisition Strategy scheduled to be finalized after Milestone A.									
Field Activities: NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme									
Universities - JHU APL									

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 3106/Combat System Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.819	57.467	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for the integration of the CG (X) Combat System, C4I, Air, and Ship systems including materiel analysis, and integration of the Combat System with the CG (X) Mission System. Integration efforts will include communications, electronics, air, command and control, Combat System interface requirements, definition, system integration, and test and evaluation. In FY10, funding has been transferred to PE 0204201N, which encompasses all CG (X) Projects.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 3106/Combat System Integration			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				0.000		51.390		0.000	
RDT&E Articles Quantity				0		0		0	
FY09: Conduct requirements development for combat system to include architecture, performance analysis, C4ISR integrated system design, air, modeling and simulation, and test planning.									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				0.000		1.980		0.000	
RDT&E Articles Quantity				0		0		0	
FY09: Mature combat system, C4I, and air risk reduction for critical technology elements (CTEs) including technology maturity and integration risks.									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				0.819		4.097		0.000	
RDT&E Articles Quantity				0		0		0	
FY08: Development of top level C4I, air, and combat system acquisition and requirements documents to support CG(X) decision reviews (Gate & Milestone). FY09: Continue development of top level C4I, air, and combat system acquisition and requirements documents to support CG(X) decision reviews (Gate and Milestone).									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
PE0204201N/ RDT&E, N	0.000	0.000	150.022						150.022
PE 0604501N Project 3186 / RDT&E, N	92.920	106.250	190.046						389.216
D. ACQUISITION STRATEGY:									
TBD - The Acquisition Strategy is currently in development in accordance with concept resulting from Analysis of Alternative and is scheduled to be completed following Milestone A.									
E. MAJOR PERFORMERS:									
Contractors - Alion									
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NUWC Newport, SSC San Diego, SSC Charleston, NSWC Carderock									
Universities - JHU APL, Carnegie Mellon FFRDCs - MITRE SYSCOMs - NAVAIR, PEO C4I									

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 3107/CG(X) DEVELOPMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	84.078	84.518	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the 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, Mechanical and Electrical (HM&E) and shipboard systems into the CG (X) class, as well as integration of communications, electronics, air, command and control, surveillance, shipboard systems, and mission system computer programs into the CG (X) class mission system. These development and integration efforts include materiel analysis, technology development, systems engineering, computer program development, interface design, 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 Review (CDR) will occur through these efforts. In FY10, funding has been transferred to PE 0204201N, which encompasses all CG (X) Projects.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 3107/CG(X) DEVELOPMENT			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				10.000		14.250		0.000	
RDT&E Articles Quantity				0		0		0	
FY08: Initiated advanced nuclear propulsion systems requirements analysis. FY09: Conduct research and development of Advanced Nuclear Propulsion Systems for CG (X).									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				5.036		6.000		0.000	
RDT&E Articles Quantity				0		0		0	
FY08: Initiated risk reduction for Critical Technology Elements (CTEs) including technology maturity, and manufacturing feasibility. FY09: Continued risk reduction for Critical Technology Elements (CTEs) including technology maturity and manufacturing feasibility.									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				69.042		64.268		0.000	
RDT&E Articles Quantity				0		0		0	
FY08: Developed top level Total Ship System Requirements documents. Reviewed and evaluated total ship system requirements, capabilities, cost, and technical feasibility of the total ship system to develop a materiel solution. Develop program documentation to support CG(X) decision reviews (Gate and Milestone). FY09: Continue development of program documentation to support CG(X) decision reviews (Gate and Milestone). Continue to refine requirements, capabilities, cost, and technical feasibility of the total ship system.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
PE0204201N/RDT&E, N	0.000	0.000	150.022						150.022
PE0604501N Project 3186 / RDT&E, N	92.920	106.250	190.046						389.216
D. ACQUISITION STRATEGY:									
TBD - The Acquisition Strategy is currently in development in accordance with concept resulting from Analysis of Alternative and is scheduled to be completed following Milestone A.									
E. MAJOR PERFORMERS:									
Contractors - TBD - Based on results of Analysis of alternatives developed for Milestone A and the Acquisition Strategy scheduled to be finalized after Milestone A.									
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NSWC Carderock, SSC San Diego, SSC Charleston; Universities - JHU/APL, Carnegie Mellon; FFRDC - MITRE; SYSCOMs - PEO C4I, NAVAIR									

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	71.956	96.563	0.000				
RDT&E Articles Qty	0	0	0				
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 Land Attack Projectile (LRLAP) associated with the development of DDG 1000. 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. System Design and Development began in FY06 with final land based qualification testing planned in FY09. LRLAP will deliver a high explosive unitary payload with Global Positioning System (GPS) accuracy. In FY 10, funding has been realigned to PE 0204202N.							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING				PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		8.700		26.832		0.000			
RDT&E Articles Quantity		2		0		0			
AGS Qualification test Assets.									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		47.143		48.384		0.000			
RDT&E Articles Quantity		0		0		0			
LRLAP System Design, Development and qualification testing.									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		16.113		21.347		0.000			
RDT&E Articles Quantity		0		0		0			
Procurement of LRLAP rounds for qualification testing.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
PE0204202N / RDT&EN	0.000	0.000	539.053						539.053
BLI 5300 / SCN	0.000	0.000	309.636						309.636
BLI 211900 / SCN	2,906.867	1,504.297	1,084.161						5,495.325
D. ACQUISITION STRATEGY: The funding in this program element supports the DDG 1000/DDG1001 dual lead ship acquisition strategy.									
E. 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									

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604300N/SC-21 TOTAL SHIP SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9A37A SmartLink Planar Scanner Antenna Modernization	1.543	0.000	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the development, design, and implementation of low-cost, low-RCS, small planar scanner antenna for tactical SATCOM on Navy surface ships, aircraft and vehicles. Goals demonstrate planar scanner technology for war-fighter use.			
	FY 2008	FY 2009	FY 2010
9C11A Advanced Wireless Encryption Module	2.314	0.000	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the development of a flexible module that can be used to upgrade the security of a wireless local area network (WLAN) currently being used by the Navy. The project will create an affordable and advanced encryption module that will allow the use of the WLAN for communications up to the SECRET level.			
	FY 2008	FY 2009	FY 2010
9833A Floating Area Network	3.856	4.787	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the development of a Floating Area Network (FAN) enabling a direct Line of Sight (LOS), wireless, Transmission Control Protocol/Internet Protocol (TCP/IP) network among intra-battle group ships.			
	FY 2008	FY 2009	FY 2010
9834A Permanent Magnet Motor	8.674	0.000	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the development and factory testing of specific technology solutions in the areas of motor and component thermal management, insulation design and breakdown mechanisms, and motor electrical component reliability.			
	FY 2008	FY 2009	FY 2010
9836A Wireless Maritime Inspection System	0.965	0.000	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the development of a wireless capability that aids Maritime Interdiction Operations (MIO) information exchange.			
	FY 2008	FY 2009	FY 2010
9A35A Bio/Nano-MEMS Center for Defense Applications	3.085	1.496	0.000
RDT&E Articles Quantity	0	0	0
Congressional add funds the University of Louisville Bio/Nano-MEMS Center that will create a multi-disciplinary science and engineering team to carry out comprehensive research, design and testing directed toward insertion of advanced, reliable MEMS devices into fielded military systems.			

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION					DATE May 2009				
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING						
COST (In Millions)			FY 2008	FY 2009	FY 2010				
Total PE Cost			151.609	200.271	178.459				
1447 / Surf Combatant Combat System Imp			148.332	187.905	178.459				
9999 / Congressional Adds			3.277	12.366	0.000				
A. MISSION DESCRIPTION: This project 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 of AN/UYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY1992 DDGs 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 and 4 CGs and DDG 51-78. Baseline 6 Phase 1 introduced COTS, Fiber Distributed Data Interface (FDDI), Local Area Network (LAN), UYQ-70 consoles, Cooperative Engagement Capability (CEC) for CGs, and an adjunct COTS computer for AEGIS Display System (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 DDGs 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 91-102 Major Baseline 7 upgrades include but are not limited to introduction and integration of new radar (AN/SPY-1D (V) upgrade), all UYK-43 and adjunct computers to be replaced with COTS-based advanced computer processing, AN/SQQ-89(V) 15, and the Remote Mine Hunting System. B/L 7P1R (DDG 103-112) upgrades the computer infrastructure, Close In Weapon System (CIWS), Air Control, and introduced OA products into the main development line. The Modernization Baselines will provide new technology to replace aging military equipment and extend service life to provide viable combatant for naval use into the future. These baselines should reduce the life cycle costs to maintain combat systems and streamline the development of capabilities. Advanced Capability Build - 08 / Technical Insertion - 08 (ACB-08/TI-08) (Cruiser Modernization) Baseline consists of an upgraded computing infrastructure and computer program enhancements to existing warfighting capabilities on CG 52-58. Advanced Capability Build -12 / Technical Insertion - 12 (ACB-12/TI-12) (AEGIS Modernization) baseline consists of an upgraded computing infrastructure and computer program enhancements to provide increased warfighting capabilities which will modernize CG 59-73 and DDG 51-78. ACB-12 Destroyers upgrades will consists of Naval Integrated Fire with new computing architecture, upgraded display consoles, computer program enhancements and introduce Control - Common Air (NIFC-CA), Standard Missile - 6 (SM-6), Common Display System(CDS), Common Processor System (CPS), Multi Mission Signal Processor (MMSP), and Ballistic Missile Defense (BMD). ACB-12 Cruiser Upgrades will									

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		R-1 ITEM NOMENCLATURE 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING		
consist of Naval Integrated Fire Control-Common Air (NIFC-CA), Standard Missile-6 (SM-6), Common Display System (CDS), and Common Processor System (CPS).				
B. PROGRAM CHANGE SUMMARY:				
Funding:	FY 2008	FY 2009	FY 2010	
FY09 President's Budget	143.065	188.500	166.393	
FY10 President's Budget	151.609	200.271	178.459	
Total Adjustments	8.544	11.771	12.066	
(U) Summary of Adjustments				
Congressional Adjustments	0.000	11.856	0.000	
SBIR/STTR/FTT Assessment	-1.276	0.000	0.000	
Program Adjustments	9.999	0.000	15.482	
Rate/Misc Adjustments	-0.179	-0.085	-3.416	
Total	8.544	11.771	12.066	
 C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
R&D 0604501N 3232 Mult Mission Signal Processor (MMSP)	0.000	0.000	33.098	33.098
SCN LI2122 - DDG 51	47.742	199.403	2,241.263	2,488.408
OPN LI2980 - Multi Mission Signal Processor	47.906	43.302	65.760	156.968
OPN LI0960 - CG Modernization	216.031	232.270	315.323	763.624
OPN LI5246 - AEGIS Support Equipment	88.696	89.160	108.886	286.742
OPN LI0900 - DDG Modernization	52.694	165.008	142.262	359.964
R&D 0603879N 3031 - SIAP (IABM Integration for DDG Mod)	45.615	41.568	52.716	139.899
R&D 0604378N 3159 - NIFC-CA	11.144	10.503	11.727	33.374
*Note: The OPN LI 2980 Other Program Funding Summary reflects the portion of LI 2980 that is relevant for Multi Mission Signal Processor only.				
D. 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				

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	
develop and integrate combat system improvements, which supported AEGIS Baseline Upgrade Development efforts. After the combat system is completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders and modernization shipyards 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 Government Furnished Equipment (GFE) deliverable to the Production Test Center for equipment test and check out. Future Combat System delivery will be provided in Advanced Capability Builds (ACBs) and Technical Insertions (TIs) using a sole source contract to provide the Platform System Engineering Agent (PSEA). Additional Contracts will be awarded to address ACB-12 development, Sites Management, and Multi-Mission Signal Processor (MMSP) development. E. MAJOR PERFORMERS: Lockheed Martin (LM) Maritime Systems and Sensors (MS2) - Moorestown, NJ (Combat System Engineering Agent) NSWC Dahlgren Division (NSWC DD)- Dahlgren, VA (Lifetime Support Engineering Agent)		

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	148.332	187.905	178.459				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project 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 of AN/UYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY1992 DDGs 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 and 4 CGs and DDG 51-78. Baseline 6 Phase 1 introduced COTS, Fiber Distributed Data Interface (FDDI), Local Area Network (LAN), UYQ-70 consoles, Cooperative Engagement Capability (CEC) for CGs, and an adjunct COTS computer for AEGIS Display System (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 DDGs 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 91-102 Major Baseline 7 upgrades include but are not limited to introduction and integration of new radar (AN/SPY-1D (V) upgrade), all UYK-43 and adjunct computers to be replaced with COTS-based advanced computer processing, AN/SQQ-89(V) 15, and the Remote Mine Hunting System. B/L 7P1R (DDG 103-112) upgrades the computer infrastructure, Close In Weapon System (CIWS), Air Control, and introduced OA products into the main development line. The Modernization Baselines will provide new technology to replace aging military equipment and extend service life to provide viable combatant for naval use into the future. These baselines should reduce the life cycle costs to maintain combat systems and streamline the development of capabilities. Advanced Capability Build - 08 / Technical Insertion - 08 (ACB-08/TI-08) (Cruiser Modernization) Baseline consists of an upgraded computing infrastructure and computer program enhancements to existing warfighting capabilities on CG 52-58. Advanced Capability Build -12 / Technical Insertion - 12 (ACB-12/TI-12) (AEGIS Modernization) baseline consists of an upgraded computing infrastructure and computer program enhancements to provide increased warfighting capabilities which will modernize CG 59-73 and DDG 51-78. ACB-12 Destroyers upgrades will consists of Naval Integrated Fire with new computing architecture, upgraded display consoles, computer program enhancements and introduce Control - Common Air (NIFC-CA), Standard Missile - 6 (SM-6), Common Display System (CDS), Common Processor System (CPS), Multi Mission Signal Processor (MMSP), and Ballistic Missile Defense (BMD). ACB-12 Cruiser Upgrades will consist of Naval Integrated Fire Control-Common Air (NIFC-CA), Standard Missile-6(SM-6), Common Display System (CDS), and Common Processor System (CPS).							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
AEGIS LIFE CYCLE SUPPORT	16.254	26.684	49.139
RDT&E Articles Quantity	0	0	0
FY08 Plan: Continue to provide AEGIS Life Cycle Support for the following: operations and maintenance of the Combat Systems Engineering Development Site (CSEDS), Program Generation Center, and Computer Program Test Site (CPTS) in support of AEGIS Computer Program development, testing, and integration for all AEGIS Weapon System (AWS) products. Continue to provide Systems Engineering for labs and field activities to support services; provide Program Management support, Modeling & Simulation, Requirements Management Warfighting Capability Integration Impacts, and Conceptual Studies. Provides Computer Program License funding to support Land Based Test Site installation, development and test efforts. Provide Commercial-Off-the-Shelf (COTS) management of in-service AEGIS Ships to address COTS Obsolescence issues and support computer program modification to enable integration of replacement parts. AEGIS Life Cycle Support in FY08 is in primary support ACB-08 Test and Certification Programs. Planned activities include continuation of support for operational requirements of land based test sites combat, continuation of System Engineering support, and provide Test Site Licenses to support all navy development, integration, and test functions. FY09 Plan: Continue to provide AEGIS Life Cycle Support for the following: operations and maintenance of the Combat Systems Engineering Development Site (CSEDS), Program Generation Center, and Computer Program Test Site (CPTS) in support of AEGIS Computer Program development, testing, and integration for all AEGIS Weapon System (AWS) products. Continue to provide Systems Engineering for labs and field activities to support services; provide Program Management support, Modeling & Simulation, Requirements Management, Warfighting Capability Integration Impacts, and Conceptual Studies. Provides Computer Program License funding to support Land Based Test Site installation, development and test efforts. Provide Commercial-Off-the-Shelf (COTS) management of in-service AEGIS Ships to address COTS Obsolescence issues and support computer program modification to enable integration of replacement parts. AEGIS Life Cycle Support in FY09 is primary support of ACB-12 / TI-12 Development and Test Programs. FY10 Plan: Continue to provide AEGIS Life Cycle Support for the following: operations and maintenance of the Combat Systems Engineering Development Site (CSEDS), Program Generation Center, and Computer Program Test Site (CPTS) in support of AEGIS Computer Program development, testing, and integration for all AEGIS Weapon System (AWS) products. Continue to provide Systems Engineering for labs and field activities to support services; provide Program Management support, Modeling & Simulation, Requirements Management, Warfighting Capability Integration Impacts, and Conceptual Studies. Provides Computer Program License funding to support Land Based Test Site installation, development and test efforts. Provide Commercial-Off-the-Shelf (COTS) management of in-service AEGIS Ships to address COTS Obsolescence issues and support computer program modification to enable integration of replacement parts. AEGIS Life Cycle Support in FY10 is primary support of ACB-12 / TI-12 Development and Test Programs.			
	FY 2008	FY 2009	FY 2010
TECHNOLOGY INSERTION - ACB 08	36.182	8.730	0.000
RDT&E Articles Quantity	0	0	0
FY08 Plan: Continued Development and Integration of Technology Insertion - 08 (TI-08). Integration of Q-70 products and addition hardware equipment required to meet AEGIS Combat System Requirements. Planned to support development and integration testing of Advanced Capability Build-08 (ACB-08) FY09 Plan: Continued Development and Integration of Technical Insertion - 08 (TI-08). Resolve Hardware issues related to TI-08 Integration.			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				
				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING		PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp
		FY 2008	FY 2009	FY 2010
ADVANCED CAPABILITY BUILD - ACB 08		12.609	24.050	6.970
RDT&E Articles Quantity		0	0	0
FY08 Plan: Continued Computer Program development for Advanced Capability Build - 08 (ACB-08). Efforts are targeted for fielding on AEGIS Cruisers (52-58) in FY08 - FY11. Provided planned functionality changes to computer program components within ACB-08. Successfully completed Pre-Award Review (PAR) in 4Q FY07 and computer program developmental testing of AEGIS Open Architected components. Initialed Navy testing of ACB-08 Computer Program Configuration to support delivery of Computer Programs. Planned continuation of Navy Testing in support of development, integration and certification efforts. Planned integration of RCIP approved Layered Defense initiative. FY09 Plan: Continued Computer Program Certification Testing of Advanced Capability Build - 08 (ACB-08). Development and Integration of RCIP capabilities into the ACB-08 for potential fielding in FY10 RCIP Approved capabilities include Layered Defense and TDC Capabilities for fielding within the ACB-08 and following development efforts. FY10 Plan: Integration of RCIP Approved Capabilities for fielding in ACB-08 platforms and following development efforts.				
		FY 2008	FY 2009	FY 2010
TECHNOLOGY INSERTION - ACB 12		11.603	6.913	9.566
RDT&E Articles Quantity		0	0	0
FY08 Accomplishments: Completed Delta SDR, approved Build 1, and selection of COTS CFE. FY09 Plan: Continued Development and Integration of Technology Insertion - 12 (TI-12). Integration of IWS 6.0 provided Common Display System (CDS) and Common Processor System (CPS) products in support of Advanced Capability Build - 12 (ACB-12) development and integration testing. FY09 Plan: Support ACB-12 / TI-12 System Specification Review and Preliminary Design Review to address all Hardware related concerns. FY10 Plan: Support ACB-12 / TI-12 Critical Design Review to address all Hardware related concerns.				
		FY 2008	FY 2009	FY 2010
ADVANCED CAPABILITY BUILD - ACB 12		23.987	60.558	79.459
RDT&E Articles Quantity		0	0	0
FY08 Accomplishments: Completed Delta SDR and approved plan for JTM alignment. Updated SDR artifacts reviewed at Delta SDR. FY08 Plan: Continued Computer Program development of Advanced Capability Build - 12 (ACB-12) efforts targeted for fielding on AEGIS Cruisers (59-73) in FY12. Develop superset Computer Program to operate on both AEGIS Destroyer and Cruiser equipped with Technical Insertion - 12 (TI-12). ACB-12 will leverage ACB-08 products as the starting point for code development. Provides for integration of AEGIS Combat System (ACS) enhancements including integration of Standard Missile - 6 (SM-6) in 1Q FY08. Commenced activities and requirements allocation in support of Joint Track Manager (JTM) Alignment within ACB-12. JTM Alignment will provide a landing zone for the Single Integrated Air Picture (SIAP) components into the AEGIS Combat System. Updates to SDR artifacts will be reviewed at the Delta SDR. Planned: Develop, test, and integrate ACB-12 superset Computer Program to support fielding on AEGIS Cruisers 59-73 and Destroyers 51-78. Near term plans include conducting AMOD Delta System Design Review (SDR) 3Q FY08, Software Specification Review (SSR) / Preliminary Design Review (PDR) in 1Q FY09. FY09 Plan: Support ACB-12 / TI-12 System Specification Review and Preliminary Design Review to address all Hardware related concerns. FY10 Plan: Support ACB-12 / TI-12 Critical Design Review to address all Hardware related concerns.				

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp	
	FY 2008	FY 2009	FY 2010
ADVANCED CAPABILITY - ACB 14	0.000	0.000	8.645
RDT&E Articles Quantity	0	0	0
FY10 Plan: Commence development efforts to develop, integrate and test MH-60R capabilities within the AEGIS Combat System. Planned for development, integration and testing of RCIP approved MH-60R capability into the AWS for fielding on modernized platforms. Capability will be fielded within Advanced Capability Build -14 (ACB-14).			
	FY 2008	FY 2009	FY 2010
MULTI MISSION SIGNAL PROCESSOR	38.690	41.549	0.000
RDT&E Articles Quantity	0	0	0
FY08 Plan: Began initial requirements definition and alignment with the Ballistic Missile Defense Program for incorporation of the BMD capability. Successfully completed Preliminary Design Review. Planned efforts include: Initial design and development of the Multi-Mission Signal Processor in support of the Critical Design Review scheduled for 2Q FY09 successfully completed; Subsystem design completion, hardware design, hardware selection and initiation of the fabrication of a Combat System Engineering to support developmental testing and integration. Maintain alignment with the Ballistic Missile Defense program and the associated Ballistic Missile Defense Signal Processor (BSP) Adjunct to incorporate BMD capability within MMSP during AEGIS Modernization [Technical Insertion - 12 / Advanced Capability Build - 12 (TI-12/ACB-12)] fielding. FY09 Plan: Support MMSP Preliminary Design Review - 2 and Critical Design Review to address all MMSP development issues and concerns. FY10 Plan: Support Initial Capability Demonstration at Combat System Development Engineering Site.			
	FY 2008	FY 2009	FY 2010
NAVAL INTEGRATED FIRE CONTROL - COUNTER AIR	9.007	19.421	24.680
RDT&E Articles Quantity	0	0	0
FY08 Plan: Continued development efforts for Naval Integrated Fire Control Counter Air (NIFC-CA), SM-6/AEGIS integration. Conducted In Process Review (IPR) 3 and completing the initial requirements definition as part of AEGIS Modernization Advanced Capability Build -12 (ACB-12). Conducted performance analyses and trade studies, modeling studies SM-6 algorithmic studies and complete simulation to assist in design development. Planned activities include continuing analysis and design efforts to complete System Design Review (SDR) in FY08 and Preliminary Design Review (PDR) in FY09, with Initial Operating Capability in FY13 as part of ACB-12. Efforts in FY09 and beyond support systems engineering, integration, and test of US Army Joint Land Elevated Network Sensors (JLENS) into NIFC-CA "From the Sea" (FTS) kill chain. FY09 Plan: Support the NIFC-CA Preliminary Design Review and monitor development efforts for integration into ACB-12. FY10 Plan: Support the NIFC-CA Critical Design Review and monitor development efforts for integration into ACB-12.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGIN			PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Total Cost (\$000)	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	1,315.615	127.483	DEC-08	113.598	DEC-09	CONT	0.000
Systems Engineering	SS/CPFF	APL, Baltimore MD	30.159	1.400	NOV-08	2.574	NOV-09	CONT	0.000
Systems Engineering	WR/RCP	NSWC Dahlgren, VA	196.449	13.543	NOV-08	23.342	NOV-09	CONT	0.000
Systems Engineering	SS/CPAF	BAE Systems, Rockville, MD	23.997	4.987	FEB-09	7.643	FEB-10	CONT	0.000
Systems Engineering	WR	NSWC Port Hueneme, CA	36.740	2.452	NOV-08	6.527	NOV-09	CONT	0.000
Systems Engineering	WR/RCP	NWAS Corona, CA	24.448	1.159	NOV-08	1.252	NOV-09	CONT	0.000
Systems Engineering	WR	SPAWAR	7.855	0.864	NOV-08	0.380	NOV-09	CONT	0.000
Systems Engineering	WR/RCP	*Miscellaneous	51.404	7.823	VAR	11.147	VAR	CONT	0.000
Award Fees	SS/CPAF	Lockheed , Moorestown, NJ	167.740	16.709	JUL-09	7.436	JUL-10	CONT	0.000
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	1.625	0.250	DEC-08	0.087	TBD	CONT	0.000
Award Fees	SS/CPAF	Alion Science, Washington, DC	1.000	0.250	JUL-09	0.044	TBD	CONT	0.000
Award Fees	WR/RCP	*Miscellaneous	2.790	1.800	VAR	0.000	TBD	CONT	0.000
Subtotal Product Development			1,859.822	178.720		174.030		CONT	0.000
Remarks: *Consist of multiple performing activities with funding for each no greater than \$1 million per year.									
Test and Evaluation	WR/RCP	Dept of Interior	32.835	4.125	JUL-09	0.664	JUL-10	CONT	0.000
Test and Evaluation	WR	NAVAIR, MD	10.563	0.643	NOV-08	0.095	NOV-09	CONT	0.000
Test and Evaluation	WR/RCP	*Miscellaneous	21.620	1.119	VAR	0.147	VAR	23.041	0.000
Subtotal Test and Evaluation			65.018	5.887		0.906		23.041	0.000
Remarks: *Consist of multiple performing activities with funding for each no greater than \$1 million per year.									
Program Management Support	SS/CPAF	Alion Science, Washington, DC	16.197	2.979	FEB-09	1.173	FEB-10	CONT	0.000
Program Management Support	SS/CPAF	BAE Systems, Rockville, MD	9.307	0.319	VAR	0.973	VAR	CONT	0.000
Program Management Support	SS/CPAF	*Miscellaneous	0.000	0.000	VAR	1.377	VAR	1.377	0.000
Subtotal Management Services			25.504	3.298		3.523		CONT	0.000
Remarks: *Consist of multiple performing activities with funding for each no greater than \$1 million per year.									

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGIN			PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Total Cost (\$000)	Target Value of Contract
Total Cost			1,950.344	187.905		178.459		CONT	0.000

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING						PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp			
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Aegis ACB08 / TI08			IPR 5		MAR 12	MRA 2	CSSQ 4 6	FINAL 9					
Aegis ACB12 / TI12					SSR / 12		TPR 6		CDR 12		IPR 5		
	SDR 12		DELTA 6										
NIFC-CA				IPR 7			IPR 7					IPR 7	
Aegis ACB14 / TI12									IPR 1				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME 1447/Surf Combatant Combat System Imp			
Schedule Profile		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Advanced Capability Build-08: In Progress Review		3Q						
Advanced Capability Build-08: Combat System Ship Qualification Test			3Q					
Advanced Capability Build-08: Mission Readiness Assessment for Dec 08 Underway			1Q					
Advanced Capability Build-08: Mission Readiness Assessment for CSSQT			2Q					
Advanced Capability Build-08: Final Certification / Computer Program Acceptance Panel			4Q					
Advanced Capability Build-12: System Design Review (SDR)		1Q						
Advanced Capability Build-12: System Design Review (SDR) Delta		3Q						
Advanced Capability Build-12: System Specification Review (SSR)			1Q					
Advanced Capability Build-12: Preliminary Design Review (PDR)			1Q					
Advanced Capability Build-12: Critical Design Review (CDR)				1Q				
Advanced Capability Build-12: Test Program Review (TPR)			3Q					
Advanced Capability Build-12: In Progress Review (IPR) #4				3Q				
Advanced Capability Build-14: In Progress Review (IPR) #1				2Q				
NIFC-CA: In Process Review (IPR) 2		4Q						
NIFC-CA: In Process Review (IPR) 3			4Q					
NIFC-CA: In Process Review (IPR) 4				4Q				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME 9999/Congressional Adds	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.277	12.366	0.000
RDT&E Articles Quantity	0	0	0
FY08 Plan: The Aegis Combat Information Center Virtualization effort (9C12A) (\$2.312M) is a concept to standardize combat information center display systems across the Surface Navy Fleet beginning with Aegis class ships, both Cruisers and Destroyers. This effort integrates existing open architecture design and code with common displays to deliver a universal system to the sailor targeting Cruiser and Destroyer Modernization upgrades. Aegis CIC continues the migration to software-bases applications, increasing maintainability and reliability of the combat system. The Smart Integrated Data Environment (9383A) (\$965K) is a concept for a fully interactive, ship-wide integration of physical and supporting operations, maintenance, logistics, training and other data. 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. FY09 PLAN: DDG 51 Permanent Magnet Hybrid Electric Propulsion System (9D75A) (\$7.579M) will be used to continue development through design, build and test proof of concept equipment for a hybrid electric drive system. Development of this technology could significantly reduce fuel consumption and increase DDG 51 Class mission effectiveness through longer time on station. Aegis Combat Information Center Modernization (9D74A) (\$3.989M) funding is to support development of Combat Information Center Display systems throughout the Surface Navy Fleet beginning with Aegis Class ships. This effort will standardize aging hardware display components and replace with state of art software applications for implementation within the Common Display System. Adaptive Diagnostic Electronic Portable Test Set (9D73A) (\$798K) plus up is to support development of new system capabilities for other radar and complex electronic systems and will also provide funding for improved distance support capabilities.			

CLASSIFICATION:		UNCLASSIFIED																																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE May 2009																																													
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604311N/LPD-17 CLASS SYSTEMS INTEGRATION																																															
COST (In Millions)				FY 2008	FY 2009	FY 2010																																													
Total PE Cost				4.175	0.982	5.304																																													
2283 / LPD-17 Class System Integration				4.175	0.982	5.304																																													
A. MISSION DESCRIPTION: 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. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes systems configurations that reduce operating and support costs and facilitate operational performance improvements. The RDT&E,N funding will be used for system engineering and integration efforts that will resolve obsolescence issues facing the LPD 17 class components, as well as develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. These efforts will result in well-defined specifications and drawings in system integration design packages that provide technical baselines for follow-on ship procurements. 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. Additionally, although operational testing ends in FY 2008, funding is required in FY 2010 for Follow On Test and Evaluation (FOT&E) as outlined in the Test and Evaluation Master Plan. Finally, LSD(R) Integration efforts begin in FY2010. B. PROGRAM CHANGE SUMMARY: <table border="1"> <tr> <td>Funding:</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td>4.213</td> <td>0.985</td> <td>5.135</td> </tr> <tr> <td>FY10 President's Budget</td> <td>4.175</td> <td>0.982</td> <td>5.304</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.038</td> <td>-0.003</td> <td>0.169</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Congressional Adjustments</td> <td>0.000</td> <td>-0.003</td> <td>0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td>-0.033</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Program Adjustments</td> <td>0.000</td> <td>0.000</td> <td>0.250</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>-0.005</td> <td>0.000</td> <td>-0.081</td> </tr> <tr> <td>Total</td> <td>-0.038</td> <td>-0.003</td> <td>0.169</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	4.213	0.985	5.135	FY10 President's Budget	4.175	0.982	5.304	Total Adjustments	-0.038	-0.003	0.169	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-0.003	0.000	SBIR/STTR/FTT Assessment	-0.033	0.000	0.000	Program Adjustments	0.000	0.000	0.250	Rate/Misc Adjustments	-0.005	0.000	-0.081	Total	-0.038	-0.003	0.169
Funding:	FY 2008	FY 2009	FY 2010																																																
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CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604311N/LPD-17 CLASS SYSTEMS INTEGRATION	
C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
SCN 3036 LPD 17	1,506.226	963.511	1,056.947	3,526.684
D. ACQUISITION STRATEGY:				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604311N/LPD-17 CLASS SYSTEMS INTEGRATION			PROJECT NUMBER AND NAME 2283/LPD-17 Class System Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.175	0.982	5.304				
RDT&E Articles Qty	0	0	0				
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. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes systems configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY 1997 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible improvements include advanced sensors, advanced computers, advanced command and control software, advanced information systems technologies, and ship based logistics concepts. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, continued personnel reductions efforts, system performance tradeoff evaluation, and naval expeditionary warfare systems engineering. Feedback from the operational forces for integrating system configurations will be accomplished through the Naval Expeditionary Warfare Centers in Quantico, Dahlgren, and Little Creek, Virginia. These efforts will result in well-defined specifications and drawings in system integration design packages that provide technical baselines for follow-on ship procurements. Additionally, although operational testing ends in FY2008, funding is required in FY2010 for Follow On Test and Evaluation (FOT&E) as outlined in the Test and Evaluation Master Plan. Finally, LSD(R) Integration efforts begin in FY 2010.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604311N/LPD-17 CLASS SYSTEMS INTEGRATION	PROJECT NUMBER AND NAME 2283/LPD-17 Class System Integration	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
LSD(R) Systems Integration	0.000	0.000	0.250
RDT&E Articles Quantity	0	0	0
LSD(R) Systems Integration. LSD(R) is a replacement for the retiring LSD 41 and LSD 49 Classes (that may be based in the LPD 17 hull form). RD TEN profiles supports necessary preliminary efforts.			
	FY 2008	FY 2009	FY 2010
Systems Engineering/Integration	3.875	0.982	1.031
RDT&E Articles Quantity	0	0	0
Continue Naval Expeditionary Warfare Systems Engineering efforts and Integration efforts for unique LPD 17 Class systems, including efforts to resolve obsolescence issues impacting the class.			
	FY 2008	FY 2009	FY 2010
OT&E	0.300	0.000	4.023
RDT&E Articles Quantity	0	0	0
Funding allows for operational test force support, range time, procurement of rounds/targets for testing, and other related costs as defined by the Test and Evaluation Master Plan (TEMP). Operational Testing is on-going and will finish in FY 2008. FY 2010 funding is for Follow On Test & Evaluation (FOT&E).			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604311N/LPD-17 CLASS SYSTEMS INTEGRATION			PROJECT NUMBER AND NAME 2283/LPD-17 Class System Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Cost to Complete (\$000)		
Systems Engineering and Integration	Various	Various	9.811	0.000	DEC-08	1.031	OCT-09	0.000		
LSD(R) Systems Integration	Various	Various	0.000	0.000		0.250	VAR	0.000		
Subtotal Product Development			9.811	0.000		1.281		0.000		
Remarks:										
Subtotal Support Costs			0.000	0.000		0.000		0.000		
Remarks:										
OT&E/Interoperability	WR	OPTEVFOR	11.392	0.982		4.023		0.000		
Subtotal Test and Evaluation			11.392	0.982		4.023		0.000		
Remarks:										
Total Cost			21.203	0.982		5.304		0.000		

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604311N/LPD CLASS SYSTEMS INTEGRATION				PROJECT NUMBER AND NAME 2283/LPD-17 Class System Integration					

Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones			IOC 									
Milestones III												
Test & Evaluation Milestones												
Operational Test	OT-IIC OPEVAL 											
Deliveries (LPD 20 -21)												

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/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 2008	FY 2009	FY 2010			
Deliverables(LPD 20-21)		4Q	4Q				
Operational Evaluation (OT-IIC) (OPEVAL)		1Q-4Q	1Q				
Lead Ship IOC		3Q					
Milestone III			4Q				

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604329N, SMALL DIAMETER BOMB			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	11.252	19.485	43.902					
3072 SMALL DIAMETER BOMB	11.252	19.485	43.902					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
Small Diameter Bomb (SDB) Increment II is an ACAT ID program providing the warfighter a capability to attack mobile targets in all weather. The Air Force is the executive service. 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 a migration path to net centric ops capability. Threshold aircraft is the F-15E for the Air Force and F-35 B and F-35 C for the Navy. Objective aircraft include the F/A-22, B-1, B-2, F-117, F-16, B-52, Predator B, F/A-18 E/F and the Navy Unmanned Combat Air System (N-UCAS). 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.								
Navy funding will provide for risk reduction activities, participation in common efforts, and development and evaluation of Navy-unique and interoperability requirements. Navy SDB II Initial Operating Capability is scheduled for FY 2016 on JSF Short Take-Off Vertical Landing (STOVL) F-35B and Navy Conventional Take Off and Landing (CTOL) Variant (F-35C) aircraft. Additionally, Navy funding is provided to conduct weapons data link message development and testing through Joint Capability Technology Demonstration (JCTD) efforts to achieve risk reduction efforts and weapons interoperability. The Joint Surface Warfare (JSuW) is one current JCTD being conducted to analyze weapons data link message development.								

R-1 SHOPPING LIST - Item No. 101

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604329N, SMALL DIAMETER BOMB	

B. PROGRAM CHANGE SUMMARY:

	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>
Funding:			
Previous President's Budget:	9.623	19.574	22.440
Current President's Budget:	11.252	19.485	43.902
Total Adjustments	1.629	-0.089	21.462
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.036	
SBIR/STTR/FTT Assessments	-0.046		
Program Adjustments	1.675		21.463
Rate/Misc Adjustments		-0.053	-0.001
Subtotal	1.629	-0.089	21.462
Schedule:			
Not applicable			
Technical:			
Not applicable			

R-1 SHOPPING LIST - Item No. 101

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604329N, SMALL DIAMETER BOMB			PROJECT NUMBER AND NAME 3072 SMALL DIAMETER BOMB			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	11.252	19.485	43.902					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Small Diameter Bomb (SDB) Increment II is an ACAT ID program providing the warfighter a capability to attack mobile targets in all weather. The Air Force is the executive service. 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 a migration path to net centric ops capability. Threshold aircraft is the F-15E for the Air Force and F-35 B and F-35 C for the Navy. Objective aircraft include the F/A-22, B-1, B-2, F-117, F-16, B-52, Predator B, F/A-18 E/F and the Navy Unmanned Combat Air System (N-UCAS). 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. Navy funding will provide for risk reduction activities, participation in common efforts, and development and evaluation of Navy-unique and interoperability requirements. Navy SDB II Initial Operating Capability is scheduled for FY 2016 on JSF Short Take-Off Vertical Landing (STOVL) F-35B and Navy Conventional Take Off and Landing (CTOL) Variant (F-35C) aircraft. Additionally, Navy funding is provided to conduct weapons data link message development and testing through Joint Capability Technology Demonstration (JCTD) efforts to achieve risk reduction efforts and weapons interoperability. The Joint Surface Warfare (JSuW) is one current JCTD being conducted to analyze weapons data link message development.								

R-1 SHOPPING LIST - Item No. 101

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604329N, SMALL DIAMETER BOMB	PROJECT NUMBER AND NAME 3072 SMALL DIAMETER BOMB	
B. Accomplishments/Planned Program			
Contractor Risk Reduction	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	4 . 050	2 . 380	
RDT&E Articles Quantity			
Participate in the 42-month risk reduction phase with Boeing and Raytheon. The Navy's participation is to ensure Navy-unique requirements are included in SDB II design and development and to understand interoperability requirements.			
Conduct Weapon Data Link Testing/JSUW/HTVS	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	3 . 544	9 . 900	
RDT&E Articles Quantity			
Conduct Weapons Data Link message development and testing. This will facilitate the incorporation of these new message sets into the JSF when the aircraft becomes available. Beginning in FY08, funding is provided to accomplish Joint Surface Warfare efforts and in FY09 to accomplish Hard Target Void Sensing efforts. Both efforts will enhance Strike Warfare survivability in development of Small Diameter Bomb II			
SDB II Support and Integration	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	3 . 658	7 . 205	43 . 902
RDT&E Articles Quantity			
Government and Support Contractor participation in risk reduction activities to include Seeker and Other Trade Studies, Joint Strike Fighter fit checks, Shipboard Suitability, Electromagnetic Environmental Effects, System Safety, Climatic/Dynamic Environments, catapulted/arrested landings testing, multiple weapon carriage system requirements, and other risk reduction activities.			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604329N, SMALL DIAMETER BOMB	3072 SMALL DIAMETER BOMB	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
USN WPN, BLI 223800 Small Diameter Bomb (begins in FY15)			
USAF PE 0604329F (SDB)	144.279	125.067	156.451

D. 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) after successfully achieving Milestone C in April 2005.

The SDB Increment II 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. This competition began April 17, 2006 with the signature of contracts to the competing contractors: 1) Raytheon and 2) the team of Boeing and Lockheed Martin. An SDD cost-type contract is planned to be awarded early in FY 2010.

The Navy funding will support Navy-unique 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.

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Exhibit R-3 Cost Analysis (page 1)							DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME		
RDT&E, N / BA-5			0604329N, SMALL DIAMETER BOMB			3072 SMALL DIAMETER BOMB		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	
PRODUCT DEVELOPMENT								
Aircraft Integration	C/CPFF	Lockheed Martin, JSF, Fort Worth, TX	3.162	3.417	Feb 2009	13.262	Nov 2009	
Primary Hardware Development	C/CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	4.050	.343	Feb 2009			
Primary Hardware Development	C/CPFF	RAYTHEON MISSILE SYSTEMS CO, TUCSON, AZ	4.050	.343	Feb 2009			
Primary Hardware Development	TBD	TBD				2.622	Jan 2010	
Primary Hardware Development	C/CPFF	(JSuW) RMS, TUCSON, AZ		2.600	Feb 2009			
Ship Suitability	C/CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	6.099	1.700	Feb 2009	18.278	Dec 2009	
Subtotal Product Development			17.361	8.403		34.162		
Remarks: McDonnell Douglas Corp and Raytheon Missile Systems Primary H/W Development Prior Year through FY09 includes costs for the 42-month risk reduction phase. Funding for McDonnell Douglas represents the Boeing/Lockheed Martin team. Primary H/W TBD in FY10 and out reflects the winning SDB II contractor. FY09 Primary H/W RMS, Tucson, AZ supports the JSuW efforts. Ship suitability efforts for McDonnell Douglas Corp include efforts for BRU-61 Carriage System.								
SUPPORT								
Software Development	SS/CPFF	Various	5.990	1.300	Mar 2009			
Software Development	SS/CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	5.935					
Software Development	WX	NAWCWD, CHINA LAKE CA	1.240	.250	Nov 2008			
Studies & Analyses (APL)	C/CPFF	JOHNS HOPKINS UNIV, BALTIMORE MD	2.395	.300	Feb 2009			
Subtotal Support			15.560	1.850		0.000		
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. Software Development efforts are in support of JSuW JCTD incorporation of J.11 Message Set into Strike Weapons.								

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604329N, SMALL DIAMETER BOMB			PROJECT NUMBER AND NAME 3072 SMALL DIAMETER BOMB	
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date
DEVELOPMENTAL TEST & EVAL.							
Developmental Test & Evaluation	Various	Various	.364			2.500	
Operational Test & Evaluation	Various	COMOPTEVFOR, Norfolk, VA	.110	.600	Oct 2008	.300	Oct 2009
Subtotal T&E			0.474	0.600		2.800	
Remarks: Developmental Test & Evaluation includes funding for wind tunnel testing in FY10.							
MANAGEMENT							
Contractor Engineering Support	C/CPFF	TBD	.371			.767	Jan 2010
Government Engineering Support	WX	NAWCWD, CHINA LAKE CA	8.262	5.144	Nov 2008	3.739	Nov 2009
Government Engineering Support	WX	VARIOUS	3.294	3.107	Nov 2008	2.034	Nov 2009
Program Mgmt Sup	WX	VARIOUS	.500	.181	Nov 2008	.200	Nov 2009
Program Mgmt Sup - MSS	C/CPFF	VARIOUS	.409				
Travel	MIPR	ASC 26 OG/OGP, EGLIN AFB FL	.806	.200	Oct 2008	.200	Oct 2009
Subtotal Management			13.642	8.632		6.940	
Remarks: FY09 increase in Government Eng Sup includes support for Hard Target Void Sensing Fuze and JSuW efforts.							
Remarks: Totals may not add due to rounding.							
Total Cost			47.037	19.485		43.902	

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EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						May 2009
RDT&E, N / BA-5						0604329N, SMALL DIAMETER BOMB						3072 SMALL DIAMETER BOMB
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones												
Risk Reduction Phase												
Source Selection												
Development and Integration												
Critical Design Review Milestone B												
Ship Suitability												
Test & Evaluation Milestones												
Development Test												
System Flight Test												
Operational Test												
Production Milestones												
Production Deliveries (FY16)												

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Exhibit R-2, RD TEN Budget Item Justification

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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604366N/STANDARD MISSILE IMPROVEMENTS				
COST (In Millions)		FY 2008	FY 2009	FY 2010			
Total PE Cost		214.644	236.976	182.197			
0439 / STANDARD MISSILE IMPROVEMENT		23.966	12.058	30.353			
3092 / Standard Missile 6 Program		190.678	221.926	151.844			
9999 / CONGRESSIONAL ADDS		0.000	2.992	0.000			
A. MISSION DESCRIPTION: Standard Missile (SM) 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 Theater Air Missile Defense (TAMD), Mission Need Statement (MNS), Defense Planning Guidance (DPG), Quadrennial Defense Review (QDR), and Ship Class AAW Self Defense Capstone Requirements Document. Agility, fuzing, and computer modifications to SM are in development to restore performance in the near term against a specific existing proliferating Anti-Ship Cruise Missile (ASCM) threat. Continuous analysis of missile capabilities vs. ever-evolving and proliferating aircraft and ASCM threats and long-range planning are required to keep pace with the threat. In FY04 the STANDARD Missile 6 (SM-6) program was started to develop an advanced surface missile system with an active seeker and an extended range. The SM-6 missile system will leverage the Navy investment in the AEGIS Weapon System (AWS), Cooperative Engagement Capability (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. SM-6 is the enabler for Integrated Fire Control (IFC). Funding to support those upgrades are also included in this line. SM-6 is currently executing the ground based flight test program and planning for the DT/OT flight test phase of the SD&D effort. 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.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604366N/STANDARD MISSILE IMPROVEMENTS	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	226.841	234.653	165.590
FY10 President's Budget	214.644	236.976	182.197
Total Adjustments	-12.197	2.323	16.607
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	-0.643	0.000
SBIR/STTR/FTT Assessment	-1.908	0.000	0.000
Program Adjustments	-10.289	0.000	-0.506
Rate/Misc Adjustments	0.000	-0.034	-4.144
SM2 and ESSM P3I Interface	0.000	0.000	24.500
SM6 Development Reduction	0.000	0.000	-3.243
Extensible Launching Systems	0.000	3.000	0.000
Total	-12.197	2.323	16.607

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 0439/STANDARD MISSILE IMPROVEMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	23.966	12.058	30.353				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Modifications to SM-2 BLK IIIB are required for use on DDG-1000 class destroyers. The Joint Universal Waveform Link (JUWL) will be integrated with ESSM and Standard Missile to communicate with the DDG-1000 SPY-3 radar. SM-2 missile software will be updated with interrupted continuous wave illumination (ICWI) in order to allow operation with DDG-1000.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME 0439/STANDARD MISSILE IMPROVEMENT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	23.966	12.058	30.353
RDT&E Articles Quantity	0	0	0
DD(X) Pre Plan Product Improvement (P3I) Link Integration/Interrupted Continuous Wave Illuminator (ICWI)			
FY08: Continued P3I and ICWI integration.			
FY09: ESSM takes delivery of Proof of Design (POD) hardware, integrates tactical software and begins testing. SM-2 continues development.			
FY10: ESSM continues POD testing, including qualification testing, and completes test equipment modifications. SM-2 data link and IIIB ICWI development continues and EDM hardware is placed on order.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Not applicable.			
D. ACQUISITION STRATEGY:			
Development is expected to be on going for the X-band (JUWL) and SM-2 IIIB ICWI.			
E. MAJOR PERFORMERS:			
Raytheon Missile Systems, Tucson, AZ is the prime contractor.			

CLASSIFICATION:			UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 0439/STANDARD MISSILE IMPROVEMENT				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Design and Analysis	SS/CPAF	RAYTHEON	154.544	11.016	NOV-08	27.486	NOV-09		CONT	0.000
	CPFF	JHU/APL	3.750	0.500	NOV-08	1.900	NOV-09		6.150	0.000
	MIPR	MIT	0.050	0.000		0.000			0.050	0.000
	WR	NSWC/DAHLGREN	786.962	0.100	NOV-08	0.100	NOV-09		787.414	0.000
	WR	NSWC/IH	0.340	0.000		0.000			0.940	0.000
	WR	NAWC/CHINALAKE	2.730	0.000		0.000			3.030	0.000
	CPFF	LOCKHEED MARTIN	17.775	0.000		0.000			17.775	0.000
	WR	CNO	0.010	0.000		0.000			0.010	0.000
	ALLOT	CMDP	4.795	0.000		0.000			4.795	0.000
	WR	NSWC/CRANE	0.257	0.000		0.000			0.257	0.000
	WR	DOI&CNAP	0.487	0.000		0.000			0.487	0.000
	WR	COMPTEVFOR	0.100	0.000		0.000			0.100	0.000
	CPFF	LOCKHEED MARTIN	2.000	0.000		0.000			2.000	0.000
	WR	CARDEROCK	0.050	0.000		0.000			0.050	0.000
	WR	NWAS/CORONA	0.325	0.000		0.000			0.325	0.000
	CPFF	CORVID	0.100	0.000		0.000			0.100	0.000
	CPFF	BAE	0.050	0.050	NOV-08	0.100	NOV-09		0.251	0.000
	MIPR	MDA	1.257	0.000		0.000			1.257	0.000
Subtotal Product Development			975.582	11.666		29.586			CONT	0.000
Remarks:										
Subtotal Support Costs			0.000	0.000		0.000			0.000	0.000
Remarks:										
DEVELOPMENTAL TEST & EVALUATION	WR	NSWC/PHD	0.185	0.150	NOV-08	0.150	NOV-09		0.485	0.000
	WR	WSMR	1.600	0.000		0.000			1.600	0.000
	WR	PT MUGU	0.098	0.000		0.000			0.098	0.000
	WR	PMRF	0.338	0.000		0.000			0.338	0.000
	WR	NSWC/PHD	0.567	0.000		0.000			0.567	0.000

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 0439/STANDARD MISSILE IMPROVEMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Subtotal Test and Evaluation			2.788	0.150		0.150			3.088	0.000
Remarks:										
CONTRACTOR ENGINEERING SUPPORT	C/CPAF	VARIOUS	1.993	0.000		0.000			1.993	0.000
PROGRAM MANAGEMENT SUPPORT	C/CPAF	VARIOUS	2.294	0.242	JAN-09	0.617	JAN-10		3.623	0.000
TRAVEL	ALLOT		0.048	0.000		0.000			0.048	0.000
Subtotal Management Services			4.335	0.242		0.617			5.664	0.000
Remarks:										
Total Cost			982.705	12.058		30.353			CONT	0.000

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	190.678	221.926	151.844				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 (AWS), 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). This project addresses the Navy's requirement for an extended range area 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, System Development and Demonstration (SD&D) design, 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, and high velocity and maneuver characteristics at the max kinematic range of the missile. SM-6 is currently executing the ground based flight test program and planning for the DT/OT flight test phase of the SD&D effort. Joint Integrated Fire Enhancement funding is JROC directed for the integration of the Joint Land Attack Elevated Netted Sensor (JLENS) into the Naval Integrated Fire Control-Counter Air (NIFC-CA) kill chain; specifically, SM-6 integration with the JLENS and the Aegis Weapon System (AWS). The funding identified in this budget is part of an integrated funding package that also includes funding for PEO IWS 1.0, PEO IWS 6.0, PEO IWS 7.0 and the Army's Cruise Missile Defense Systems JLENS Product Office.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.788	1.220	2.581
RDT&E Articles Quantity	0	0	0
Joint Integrated Fire Enhancement FY08/FY09: Modeling and Simulation Integration. FY 10: Initial scenario and test planning development and integration and test efforts.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	17.647	14.122	12.858
RDT&E Articles Quantity	0	0	0
SM-6/AWS & VLS Integration FY08/FY09/FY10: Aegis Weapon System and MK 41 Vertical Launch System integration of SM-6.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	152.787	184.148	111.305
RDT&E Articles Quantity	0	0	0
Missile Development FY 08: GTV 1 - 2 (Guided Test Vehicle) execution at White Sands Missile Range (WSMR). DT Flight at Sea preparation. FY 09: CTV-1 (Capture Test Vehicle), GTV-3; Low Rate Initial Production (LRIP) Milestone C prep and execution; DT/OT Flight test preparation and targets prep. FY 10: DT/OT Flight Test execution at Pacific Missile Range Facility (PMRF); 17 flight tests planned.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	19.456	22.436	25.100
RDT&E Articles Quantity	0	0	0
SM-6 Insensitive Munitions (IM) FY08: Perform system design and development activities for tactical composite cases and motors. FY09: Perform system design and development activities on the IM designs. Begin testing of the MK72 composite case including ambient and environmental tests and a propellant mitigation capable MK72. Start forward dome demonstrations. FY10: Perform (3) Slow Cook Off (SCO) tests: (1) strip down demo with MK104/MK72 with dual chemical sensor initiators and (2) with warhead-full up missile. Perform tactical MK72 composite case tests with forward dome functionality, then with forward dome capable cases.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS				PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program			
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						
WPN 2234/Standard Missile	0.000	122.471	160.052						
QTY		20	28						
 D. ACQUISITION STRATEGY: The Navy awarded a contract for SM-6 development, design, testing, production and support (including spares) to Raytheon using other than full and open competition pursuant to the authority of 10 U.S.C. 2304(c)(1). The active seeker guidance section for the SM-6 will be built in a joint production facility with the Advance Medium Range Air to Air Missile (AMRAAM). The remainder of the SM-6 AUR components will be produced in existing production facilities that are currently producing other variants of the STANDARD missile. No new facilities will be required for SM-6 production, and existing equipment will be used whenever possible. No source other than Raytheon is capable of producing a shipboard ERAM missile within the Navy's schedule. SM-6 Acquisition Strategy signed by OSD AT&L 3 March 2004. E. MAJOR PERFORMERS: Raytheon Missile Systems, Tucson, Arizona: SM-6 SD&D Contract awarded September 2004.									

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
DESIGN AND ANALYSIS	CPIF	RAYTHEON	404.249	147.688	NOV-08	86.305	NOV-09		CONT	0.000
	CPFF	JHU/APL, LAUREL MD	25.800	5.138	NOV-08	5.250	NOV-09		36.188	0.000
	MIPR	MIT LINCOLN LAB, LEXINGTON	0.550	0.000		0.000			0.550	0.000
	WR	NAWC WD CHINALAKE, CA	1.257	0.300	NOV-08	0.300	NOV-09		1.857	0.000
	WR	NSWC DAHLGREN, VA	6.032	1.372	NOV-08	2.052	NOV-09		9.456	0.000
	WR	NSWC INDIAN HEAD, MD	2.307	0.527	NOV-08	0.527	NOV-09		3.361	0.000
	WR	NSWC PORT HUENEME, CA	5.849	2.201	NOV-08	2.338	NOV-09		10.388	0.000
	WR	NSWC CRANE, IN	0.838	0.386	NOV-08	0.386	NOV-09		1.610	0.000
	MIPR	JSPO/EGLIN EDWARDS AFB	5.402	5.500	NOV-08	10.800	NOV-09		21.702	0.000
	CPFF	LOCKHEED	5.794	0.000		0.000			5.794	0.000
	WR	NSWC CORONA	1.956	0.831	NOV-08	0.831	NOV-09		3.618	0.000
	REQN	ONR	2.750	0.400	NOV-08	3.787	NOV-09		6.937	0.000
	REQN	NRL	0.090	0.000		0.000			0.090	0.000
	WR	COMPTEVFOR	0.890	0.260	NOV-08	0.260	NOV-09		1.410	0.000
	WR	CARDEROCK	0.625	0.200	NOV-08	0.200	NOV-09		1.025	0.000
	WR	NSWC/PT MUGU	0.213	0.025	NOV-08	0.025	NOV-09		0.263	0.000
	CPFF	BAE	4.693	1.100	NOV-08	0.750	NOV-09		6.543	0.000
	MIPR	ARMY, REDSTONE ARSENAL	0.050	0.000		0.000			0.050	0.000
	WR	NAWCAD, PATUXENT RIVER	0.392	0.000		0.000			0.392	0.000
	CPFF	CORVID	1.300	0.350	NOV-08	0.450	NOV-09		2.100	0.000
	CPFF	RNB	0.010	0.000		0.000			0.010	0.000
	WR	SPAWAR	0.007	0.000		0.000			0.007	0.000
	WR	ARMY CECOM	0.066	0.000		0.000			0.066	0.000
	WR	GENERAL DYNAMICS	1.660	0.000		0.000			1.660	0.000
Ship Integration	CPFF/WR	Various (IWS 1A)	34.293	12.190	NOV-08	8.450	NOV-09		54.933	0.000
	CPAF/WR	Various (VLS)	17.028	4.418	NOV-08	4.483	NOV-09		25.929	0.000
Subtotal Product Development			524.101	182.886		127.194			CONT	0.000
Remarks:										

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Subtotal Support Costs			0.000	0.000		0.000			0.000	0.000
Remarks:										
Developmental Test & Evaluation	WR	NSWC Port Hueneme, CA	0.200	0.000		0.000			0.200	0.000
	WR	White Sands Missile Range, NM	12.580	5.690	NOV-08	1.000	NOV-09		19.270	0.000
	WR	PMRF	0.220	29.700	NOV-08	20.000	NOV-09		49.920	0.000
	WR	PT. MUGU	0.369	0.000	NOV-08	0.000			0.369	0.000
Subtotal Test and Evaluation			13.369	35.390		21.000			69.759	0.000
Remarks:										
Contractor Engineering Services	CPAF	Various	11.905	3.500	NOV-08	3.500	NOV-09		18.905	0.000
Travel			0.578	0.150	NOV-08	0.150	NOV-09		0.878	0.000
Subtotal Management Services			12.483	3.650		3.650			19.783	0.000
Remarks:										
Total Cost			549.953	221.926		151.844			CONT	0.000

CLASSIFICATION:		UNCLASSIFIED																															
EXHIBIT R-4, SCHEDULE PROFILE																												DATE		May-09			
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME																PROJECT NUMBER AND NAME					
RD TEN/BA 5												0604366N/STANDARD MISSILE IMPROVEMENTS																3092/Standard Missile 6 Program					
Fiscal Year	2008				2009				2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Acquisition Milestones				PRR			MS C			FRP Decision																							
Design Reviews/Decisions				WSES RB				WSES RB (C1-Q3)																									
Hardware Design, Prototype & Test																																	
Tactical SW Development/ Final Qualification Test (FQT)	Tactical SW Development (FQT)																																
Integration & Test	Captive Carry						CSEDS				DT WIT		OT WIT																				
Flight Tests	GTV-1																																
DT IIB1 (CTV) DT IIB2 (GTV)			GTV-2	CTV	GTV-3																												
Test & Evaluation Milestones	DT IIB2 EOA									DT IIC1																							
Development Test (DT) DT IIB2 EOA/DT IIC1/DT IIB 1DT IIC2				DT IIB1						DT IIC2/OT (1-2)																							
Production Milestones							LRIP I Award				LRIP II Award																						
LRIP I FY 09																																	
LRIP II FY 10																																	

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME 3092/Standard Missile 6 Program			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Software Design/Final Qualification Test (FQT)		1Q-4Q	1Q-4Q	1Q-4Q				
Captive Carry		1Q-4Q						
CSEDS (ACB 12) (ACB14)			1Q					
WIT				1Q & 3Q				
Flight Test DT IIB1 (CTV) DTB IIB2 (GTV)		3Q-4Q	1Q-3Q					
WSESRB		3Q	1Q-3Q					
Developmental Testing (DT-IIB1)		4Q	1Q					
Developmental Testing (DT-IIB2) Early Operational Assessment		1Q-4Q	1Q-2Q					
Preproduction Readiness Review (PRR)		3Q						
Milestone C (MS C) Review			2Q					
Low-Rate Initial Production I (LRIP I Award)			2Q					
Developmental Testing (DT-IIC1)				2Q-3Q				
Low-Rate Initial Production II (LRIP II Award)				1Q				
Developmental Testing (DT-IIC2/OT-[1&2])				2Q-3Q				
Operational Testing (OT-[3-12 & 2 Spares])				4Q				
Full-Rate Production (FRP) Decision				4Q				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Extensible Launching Systems 9D76A	0.000	2.992	0.000
RD T&E Articles Quantity	0	0	0
FY 2009: To develop system requirements and other risk mitigation tasks.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604373N/AIRBORNE MCM			
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	55.422	41.740	48.712				
0529 / ABN MINE HUNT SYSTEM	4.990	2.486	4.759				
2047 / ALMDS	12.414	6.438	11.106				
2427 / OASIS	7.576	7.035	9.832				
2473 / Airborne Mine Neutralization System	23.895	20.344	20.110				
4026 / Strat Into Medal, Tactics & Trng Organic Force	3.680	2.776	1.946				
9179 / Surf Navy Integ Undersea Tactical Tech	0.550	0.666	0.959				
9999 / CONGRESSIONAL ADDS	2.317	1.995	0.000				
A. MISSION DESCRIPTION: (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 Littoral Combat Ship (LCS) Mine Warfare Mission Module. 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. Surface Navy Integrated Undersea Tactical Technology (SNIUTT) will be used to develop an AN/SQQ-32, 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).							
B. PROGRAM CHANGE SUMMARY:							
Funding:	FY 2008	FY 2009	FY 2010				
FY09 President's Budget	55.979	39.882	33.264				
FY10 President's Budget	55.422	41.740	48.712				
Total Adjustments	-0.557	1.858	15.448				
(U) Summary of Adjustments							
Congressional Rescissions							
Congressional Adjustments		-0.113					
SBIR/STTR/FTT Assessment	-0.557						
Program Adjustments		2.000	16.120				
Rate/Misc Adjustments		-0.029	-0.672				
Total	-0.557	1.858	15.448				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.990	2.486	4.759				
RDT&E Articles Qty	0	0	0				
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 Littoral Combat Ship (LCS) Mine Warfare Mission Module.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.659	0.764	3.520
RDT&E Articles Quantity	0	0	0
FY08: - CAD/CAC software upgrades - Sensor Fusion software upgrades - Continue Real Time CAD/CAC development - Continue Environmental Data Extraction Analysis FY09: - Cable design improvement - Ferrule Hydrodynamic design - Search Sensor upgrade FY10: - Perform Through the Sensor analysis - Automated Target Recognition Development - Search Sensor upgrade			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.574	0.575	0.387
RDT&E Articles Quantity	0	0	0
FY08: - Continue performance analysis identifying design efforts required to resolve interface problems - Tactics, Mission Planning, and PMA during MH-60S OT phase - Complete Interface/integration with MH-60S, C4I Interface and MEDAL - Development of ILS and supportability products and training materials FY09: - Continue performance analysis identifying design efforts required to resolve interface problems - Tactics, Mission Planning and PMA during MH-60S OT phase			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM	
- Complete Interface/integration with MH-60S, C4I Interface and MEDAL - Begin to develop ILS and supportability product and training materials for P3I improvements FY10: - Continue to develop ILS and supportability product and training materials for P3I improvements			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.466	1.000	0.550
RDT&E Articles Quantity	0	0	0
FY08: - Began MH-60S OT - Conduct testing on P3I improvements FY09: - Conduct testing on P3I improvements FY10: - Conduct testing on P3I improvements			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.291	0.147	0.302
RDT&E Articles Quantity	0	0	0
FY08: - Provide planning and management during for the AN/AQS-20A program - Complete documentation development in support of FRPDR in FY09 - Travel FY09: - Provide planning and management during for the AN/AQS-20A program - Complete documentation development in support of FRPDR in FY09 - Travel			

CLASSIFICATION:	UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM				PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM			
FY10: - Provide planning and management during for the AN/AQS-20A program - Travel								
C. OTHER PROGRAM FUNDING SUMMARY: To Total								
Line Item No. and Name	FY 2008	FY 2009	FY 2010					Total Cost
OPN 4248 AQS-20A	14.320	0.000	14.520					28.840
OPN 1600 LCS Mission Modules	0.000	73.684	137.259					210.943
D. ACQUISITION STRATEGY: AN/AQS-20A achieved Milestone C on 10 May 2005. Sole Source to Raytheon of MH-60S systems LRIP procurement began in FY05, FY06 and FY07. E. MAJOR PERFORMERS: Major performers and various contractors, NSWC Panama City, and NAVSEA.								

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	SS/CPIF	Raytheon, Portsmouth, RI	31.120			0.000		0.000			31.120	0.000
Hardware/Software Development	C/CPFF	Raytheon, Portsmouth, RI	60.150			0.000		0.000			60.150	0.000
Hardware/Software Development	WX	NSWC, PC	13.002			0.764	OCT-08	3.520	NOV-09		CONT	0.000
Hardware/Software Development	C/FP	Northrop, Gurmman	4.572			0.000		0.000			4.572	0.000
			0.000			0.000		0.000			0.000	0.000
Subtotal Product Development			108.844			0.764		3.520			CONT	0.000
Remarks:												
Engineering Services	WX	NSWC, PC	30.192			1.000	NOV-08	0.337	NOV-09		CONT	0.000
Engineering Services	C/CPFF	Raytheon, Portsmouth, RI	3.686			0.000		0.000			3.686	0.000
Engineering Services	VAR	Various	54.018			0.000		0.000			54.018	0.000
Engineering Services	SS/CPIF	Raytheon, Portsmouth, RI	3.464			0.000		0.000			3.464	0.000
ILS Function	WX	NSWC, PC	6.312			0.025	NOV-08	0.050	NOV-09		CONT	0.000
ILS Function	SS/CPIF	Raytheon, Portsmouth, RI	1.546			0.000		0.000			1.546	0.000
ILS Function	VAR	Various	0.981			0.000		0.000			0.981	0.000
Subtotal Support Costs			100.199			1.025		0.387			CONT	0.000
Remarks:												
T&E Functions	WX	NSWC, PC	11.734			0.000		0.550	DEC-09		12.284	0.000
T&E Functions	SS/CPIF	Raytheon, Portsmouth, RI	4.134			0.550	FEB-09	0.000			4.684	0.000
T&E Functions	VAR	Various	1.583			0.000		0.000			1.583	0.000
Subtotal Test and Evaluation			17.451			0.550		0.550			18.551	0.000
Remarks:												
Management Services			4.393			0.122	JAN-09	0.277	JAN-10		CONT	0.000
Travel			0.529			0.025	OCT-08	0.025	OCT-09		0.579	0.000
Subtotal Management Services			4.922			0.147		0.302			CONT	0.000
Remarks:												

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Total Cost			231.416			2.486		4.759			CONT	0.000

CLASSIFICATION:				UNCLASSIFIED																					
EXHIBIT R-4, SCHEDULE PROFILE																		DATE May 2009							
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM								PROJECT NUMBER AND NAME 0529/ABN MINE HUNT SYSTEM												
Fiscal Year	2008				2009				2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
Acquisition Milestones																									
Test & Evaluation Milestones																									
DT-II I (MH-60S TECHEVAL)																									
OT-IIB (MH-60S OPEVAL)																									
P3I Development Phase																									
Production Milestones																									
LRIPs (FY 05, FY06 & FY07)																									
LRIPs Deliveries																									

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-4a, SCHEDULE DETAIL						DATE			
						May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDTEN/BA 5		0604373N/AIRBORNE MCM			0529/ABN MINE HUNT SYSTEM				
Schedule Profile		FY 2008	FY 2009	FY 2010					
AN/AQS-20A/MH-60S DT			3Q-4Q						
AN/AQS-20A/MH-60S OT				2Q					
Low Rate Intial Production I & II		1Q-4Q	1Q-4Q	1Q-4Q					
Full Rate Production Decision				4Q					
AN/AQS-20A P3I		1Q-4Q	1Q-4Q	1Q-4Q					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2047/ALMDS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	12.414	6.438	11.106				
RDT&E Articles Qty	0	0	0				
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.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 2047/ALMDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	7.156	1.572	7.893
RDT&E Articles Quantity	0	0	0
Hardware and Software technology development and demonstration/Engineering Services			
FY08:Continue engineering associated with Increment 1 Baseline.			
FY09: Post test engineering associated with Increment 1 Baseline			
FY10:Design and development of Increment II, full ORD performance.			
All: TDA Engineering/oversight/support of engineering efforts to meet baseline performance and full performance.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.092	0.058	0.300
RDT&E Articles Quantity	0	0	0
Integrated Logistics Support			
FY08: Training for DT IIE, Prepare for OT-IIA			
FY09: Training associated with OT IIA			
FY10: IOC preparations			
ALL: TDA support of ILS Program, to include operator training, NATOPS documentation updates, and tech/maintenance manual updates.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.460	4.685	2.038
RDT&E Articles Quantity	0	0	0

CLASSIFICATION:	UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM				PROJECT NUMBER AND NAME 2047/ALMDS			
Testing and Evaluation FY08 DT-IID Phase C, and WSIT CT. FY09 Completion of DT-IIE and OT-IIA OPEVAL FY10: IOC Preparations								
					FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost					0.706	0.123	0.875	
RDT&E Articles Quantity					0	0	0	
Project Management FY08: Production / Financial management in support of Testing of Increment 1 FY09: Financial management / Contractor Support FY10: Financial Management/ Contractor Support ALL: TDA Program Management								
C. OTHER PROGRAM FUNDING SUMMARY:								
To Total								
Line Item No. and Name	FY 2008	FY 2009	FY 2010					Total Cost
OPN 4248	20.800	6.252	22.300					49.352
OPN 1600 LCS Mission Modules	0.000	73.684	137.259					210.943

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 2047/ALMDS	
D. ACQUISITION STRATEGY: The first LRIP lot of two units was awarded as a new sole-source contract to the SD&D contractor in FY05. This is a Fixed-Price Incentive (FPI) contract with cost and schedule incentives. The March 2006 Program Review decision memorandum approved the ALMDS Program for LRIP 2 procurement of two units for FY07 pending successful demonstration of Engineering Change Proposal (ECP) I performance during DT-IID; DT-IID Phase B was conducted on an SH-60F helicopter and DT-IID phase C will be conducted on an MH-60S helicopter. LRIP Lot 2 (three units) was awarded in March of FY08. Full Rate Production (FRP) Lot 1 will also be an FRP option to LRIP I contract. FRP Lot 2 will be a new competitively awarded contract with options for the subsequent three years. E. MAJOR PERFORMERS: Major performers are various contractors, NSWC Panama City and NAVSEA.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2047/ALMDS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	WX	NSWC PC	0.661			0.000		3.303	NOV-09		3.964	0.000
Hardware/Software Development	RX	Prime Contractor	28.626			0.000		0.823	NOV-09		29.449	0.000
Hardware/Software Development	RX	Metron	0.625			0.000		0.000			0.625	0.000
Hardware/Software Development	RX	SAIC	0.200			0.000	NOV-08	0.000			0.200	0.000
Engineering Services	WX	NSWC PC	12.489			0.024	NOV-08	1.565	NOV-09		CONT	0.000
Engineering Services	RX	Prime Contractor	16.095			0.198	NOV-08	0.000			16.293	0.000
Engineering Services	VAR	Various	11.451			1.168	NOV-08	2.166	NOV-09		CONT	0.000
Engineering Services	RX	Various	3.922			0.000		0.000			3.922	0.000
Engineering Services	RX	Metron/Arete	0.700			0.182	NOV-08	0.035	NOV-09		0.917	0.000
Subtotal Product Development			74.769			1.572		7.892			CONT	0.000
Remarks:												
ILS Functions	WX	NSWC PC	2.032			0.000		0.000			CONT	0.000
ILS Functions	WX	NSWC PC (Prime Contractor)	5.725			0.000		0.000			5.725	0.000
ILS Functions	VAR	Various/NRL Stennins	1.062			0.058	NOV-08	0.300	NOV-09		1.420	0.000
ILS Functions	WX	NSWC PC	0.300			0.000		0.000			0.300	0.000
Subtotal Support Costs			9.119			0.058		0.300			CONT	0.000
Remarks:												
Testing and Evaluation	RX	NSWC PC (Prime Contractor)	11.962			2.534	NOV-08	0.569	NOV-09		CONT	0.000
Testing and Evaluation	WX	NSWC PC	17.492			1.058	NOV-08	0.770	NOV-09		CONT	0.000
Testing and Evaluation	VAR	Various	0.392			0.000		0.000			0.392	0.000
Testing and Evaluation	WX	NAWC AD PAX	0.000			1.093	NOV-08	0.700	NOV-09		1.793	0.000
Subtotal Test and Evaluation			29.846			4.685		2.039			CONT	0.000
Remarks:												
Travel	PD	NAVSEA	0.285			0.000		0.000			0.285	0.000
Management Support	VAR	Various	1.993			0.050	NOV-08	0.050	NOV-09		2.093	0.000
Management Support	WX	NSWC PC	2.450			0.073	NOV-08	0.800	NOV-09		CONT	0.000

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2047/ALMDS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Management Support	WX	NSWC PC	1.939			0.000		0.025	NOV-09		1.964	0.000
Subtotal Management Services			6.667			0.123		0.875			CONT	0.000
Remarks:												
Total Cost			120.401			6.438		11.106			CONT	0.000

CLASSIFICATION:										UNCLASSIFIED																		
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009								
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM										PROJECT NUMBER AND NAME 2047/ALMDS								
Fiscal Year	2008				2009				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	
Acquisition Milestones																												
Fabrication																												
System Development																												
Production Awards																												
Test & Evaluation Milestones																												
Contractor Test																												
Development Test																												
Operational Test																												
Production Milestones																												
LRIP FY 05																												
FRP FY 10																												
N85 Deliveries																												

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2047/ALMDS			
Schedule Profile		FY 2008	FY 2009	FY 2010				
CT/DT IID		1Q-4Q	1Q					
Physical Configuration Audit (PCA)		1Q						
Increment II Development				1Q-4Q				
Spiral 1 VSW Development and Test								
Full Rate Production (FRP) Decision				3Q				
IOC				4Q				
LRIP 2 Units Deliveries (02)				2Q				
Full Rate Production (FRP) Start (FRP 1)				4Q				
Full Rate Production (FRP) Start (FRP 2)								
Full Rate Production (FRP) Start (FRP 3)								
Full Rate Production Delivery Start (FRP 1)								
Full Rate Production Delivery Start (FRP 2)								
Full Rate Production Delivery Start (FRP 3)								
DT-II E			3Q-4Q					
OT-II A OPERATIONAL TESTING (OPEVAL)				2Q				
DT-II F								
OT-II B OPERATIONAL TESTING (OPEVAL)								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2427/OASIS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	7.576	7.035	9.832				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Organic Airborne and Surface Influence Sweep (OASIS) system is a towed Minesweeping System to be deployed from specially configured MH-60S helicopters. 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) are being developed for test and evaluation. This budget also supported an R&D effort to develop the Organic Cable Reeling Assembly (ORCA), a maintenance tool for cables used by OASIS and other systems. ORCA will provide a system for loading and unloading cables on the Carriage Stream and Recovery System (CSTRS) without the requirement for an MH60 helicopter. Areas of interest for program enhancement include but are not limited to the following: A) Real-time Mission Planning B) Threat Emulation Jamming C) Improved Power Inverter D) Light weight winch drive-train E) Improved magnetic performance. ORCA development was funded by OASIS in FY06, FY07, and FY08.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 2427/OASIS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.422	0.793	0.444
RDT&E Articles Quantity	0	0	0
Product Development FY08: Continue development of ORCA. Continue OASIS EDM development Develop solutions for forward Electrode AFT Sweep Cable FY09: Continue OASIS EDM development work issues including corrosion, forward electrode, and AFT Sweep Cable Conduct CDR for BME design FY10: Continue EDM development through MH-60 CT MS C Review			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.701	5.789	5.868
RDT&E Articles Quantity	0	0	0
FY08: Engineering and ILS support for ORCA contract Office of Naval Research program support Support for development of OASIS Maintenance Test Sets Analysis of MIL-STD 704A Testing Issues FY09: Office of Naval Research program support Engineering and ILS support for Operational Assessment Engineering and ILS BME Design and Development			

CLASSIFICATION:	UNCLASSIFIED			
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM		PROJECT NUMBER AND NAME 2427/OASIS	
FY10: Office of Naval Research program support Engineering and ILS support for CT and DT				
	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	3.058	
RDT&E Articles Quantity	0	0	0	
FY10: Conduct OASIS Operational Assessment, and begin NH-60 CT				
	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	0.453	0.453	0.462	
RDT&E Articles Quantity	0	0	0	
Monitor contractor progress with regard to schedule, cost, and technical status management				
Monitor contractor CDRL and other deliverables.				
C. OTHER PROGRAM FUNDING SUMMARY:				
To Total				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
OPN 4248 (OASIS)	0.000	0.000	0.000	0.000
OPN 4248 (ORCA)	2.102	2.893	1.200	6.195
OPN LCS Mission Modules	0.000	73.684	137.259	210.943
 D. ACQUISITION STRATEGY: After Milestone B review in FY02, a SD&D contract was awarded. In FY07, the program successfully completed MH-53 CT and Tower Testing. An Operational Assessment is planned for FY09 MH-60 CT in FY10.				
 E. MAJOR PERFORMERS: Major performers are various contractors, NSWC Panama City, NSWC Carderock, ONR, and NAVSEA.				

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2427/OASIS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	C/CPFF	EDO Corp.	1.722			0.000		0.200	NOV-09		1.922	0.000
Hardware/Software Development	C/CPIF	EDO Corp.	13.134			0.368	NOV-08	0.000			13.502	0.000
Hardware/Software Development	SS/CPFF	Aeptec Microsystems Inc.	5.898			0.000		0.000			5.898	0.000
Hardware/Software Development	WX	NSWC PC	0.609			0.425	NOV-08	0.244	NOV-09		1.278	0.000
Subtotal Product Development			21.363			0.793		0.444			22.600	0.000
Remarks:												
Engineering Services	WX	NUWC Keyport	0.659			0.000		0.000			0.659	0.000
Engineering Services	C/CPIF	EDO Corp.	14.626			1.207	NOV-08	1.526	NOV-09		CONT	0.000
Engineering Services	WX	NSWC PC	16.789			3.308	NOV-08	2.156	NOV-09		CONT	0.000
Engineering Services	WX	NSWC Carderock MD	0.300			0.000		0.000			0.300	0.000
Engineer Services/ILS	VAR	Various	0.548			0.000		0.000			0.548	0.000
Engineering Services	PD	ONR	8.349			0.674	NOV-08	1.304	NOV-09		CONT	0.000
ILS Functions	C/CPIF	EDO Corp.	4.518			0.200	NOV-08	0.146	NOV-09		CONT	0.000
ILS Functions	WX	NSWC, PC	2.868			0.400	NOV-08	0.736	NOV-09		CONT	0.000
Subtotal Support Costs			48.657			5.789		5.868			CONT	0.000
Remarks:												
T&E Functions	C/CPIF	EDO Corp	7.668			0.000	NOV-08	0.125	NOV-09		CONT	0.000
T&E Functions	WX	NSWC PC	12.290			0.000	NOV-08	2.933	NOV-09		CONT	0.000
T&E Functions	VAR	Various	0.554			0.000		0.000			0.554	0.000
Subtotal Test and Evaluation			20.512			0.000		3.058			CONT	0.000
Remarks:												
Management Services	VAR	Various	5.664			0.428	NOV-08	0.432	NOV-09		6.524	0.000
Travel	PD	NAVSEA	0.315			0.025	NOV-08	0.030	NOV-09		0.370	0.000
Subtotal Management Services			5.979			0.453		0.462			6.894	0.000
Remarks:												

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2427/OASIS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Total Cost			96.511			7.035		9.832			CONT	0.000

CLASSIFICATION:										UNCLASSIFIED																			
EXHIBIT R-4, SCHEDULE PROFILE																		DATE May 2009											
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM										PROJECT NUMBER AND NAME 2427/OASIS									
Fiscal Year		2008				2009				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	
OASIS																													
Acquisition Milestones																													
System Development																													
Test & Evaluation Milestones																													
Contractor Test																													
Development Test																													
Operational Test																													
Production Milestones																													

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2427/OASIS			
Schedule Profile		FY 2008	FY 2009	FY 2010				
MH-53 OA				3Q				
CT MH-60s Testing				4Q				
DT Testing								
OPEVAL								
Milestone C (LRIP)								
Post Milestone PRR								
LRIP Contract Award								
FRP Contract Award								
Initial Operational Capability								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	23.895	20.344	20.110				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: AMNS will provide the MH-60S helicopter with the capability to neutralize bottom and moored mines using an expendable mine neutralization device. The AMNS is being tested on the MH-53E helicopter to prove out the neutralization effectiveness. The system will be deployed from the MH-60S helicopter as part of the Littoral Combat Ship (LCS) Mine Warfare Mission Module. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA). 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: (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. The system will be deployed from the MH-60S helicopter and will provide organic airborne mine defense as part of Littoral Combat Ship (LCS) Mine Warfare Mission Module. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA).							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.643	2.307	2.141
RDT&E Articles Quantity	0	0	0
AMNS			
FY08 - FY10: Develop logistics products, including training materials and interactive technical manual. Provide engineering support, including review for product development and integration.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	6.053	3.029	5.041
RDT&E Articles Quantity	0	0	0
AMNS			
FY08: Initiate MH-60S TECHEVAL.			
FY09: Conduct Regression Testing prior to re-entry MH-60S TECHEVAL.			
FY10: Support Testing on untethered LHS.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.333	0.164	0.183
RDT&E Articles Quantity	0	0	0
AMNS			
FY08 - FY10: Provide program management support and travel for AMNS.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000
RDT&E Articles Quantity	0	0	0
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.200	4.383	3.400
RDT&E Articles Quantity	0	0	0
RAMICS			
FY08: Continue RAMICS design and fabrication of Engineering Development Models (EDMs). Conduct Contractor Testing (CT)			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System	
FY09: Conduct Alternate Platform Testing/OA, Contractor Testing (CT), WIST Ground Testing, EDM Delivery, captive carriage and jettison testing on the MH-60s helicopter.			
FY10: Conduct WSIT CT Testing and MS C.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.738	4.645	4.695
RDT&E Articles Quantity	0	0	0
RAMICS			
FY08: Support Project management, system engineering, ILS and Software Development.			
FY09: Support Project management, system engineering, ILS and Software Development.			
FY10: Support Project management, System engineering, ILS and Software Development.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.481	4.766	3.850
RDT&E Articles Quantity	0	0	0
RAMICS			
FY08: Support Contractor Testing (CT) and Integration.			
FY09: Support Alternate Platform Testing CC&J, and Environmental Qualls.			
FY10: Support WIST CT Testing and MS C.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.447	1.050	0.800
RDT&E Articles Quantity	0	0	0
RAMICS			
FY08: Support all Program Management and T&E efforts.			
FY09: Support all Program Management and T&E efforts.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM				PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System			
FY10: Support all Program Management and T&E efforts.									
C. OTHER PROGRAM FUNDING SUMMARY:									
To Total									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						
AMNS	0.000	0.000	0.000						
OPN 4248	7.946	10.956	11.300						
AMNS	0.000	0.000	0.000						
WPN 4225	6.522	8.593	4.439						
OPN 1600 LCS Mission Modules	0.000	73.684	137.259						
RAMICS	0.000	0.000	0.000						
WPN 4225	0.000	0.000	0.000						
RAMICS	0.000	0.000	0.000						
PANMC 1960	0.000	0.967	0.000						
WPN 4221 LCS RAMICS	0.000	0.000	0.000						
D. ACQUISITION STRATEGY:									
AMNS: In FY08 following a successful alternate platform test, contractor test on an MH-60S, and MS-C, the Navy exposed three (3) LRIP options in the current AMNS SD&D contract with Raytheon. Following the successful completion of DT on an MH-60S and a Gate 6 review in FY09, the Navy will award four (4) additional LRIP Units to Raytheon.									
Following a successful OT on an MH-60S, FRP is planned for FY10. The Navy has awarded a sole source contract for BAE for Common Neutralizer procurements, which began in FY08.									
RAMICS: Achieved MS B in July 2002 and awarded SD&D contract in August 2002 based on a full and open competition.									
E. MAJOR PERFORMERS:									
Major performers and various contractors, NSWC PC, COTF, and NAVSEA.									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	C/845	Lockheed Syracuse, NY	3.331			0.000		0.000			3.331	0.000
Hardware/Software Development	VAR	Various	3.359			0.000		0.000			3.359	0.000
Hardware/Software Development	WX	NSWC PC	2.275			0.000		0.000			2.275	0.000
Hardware/Software Development	C/CPIF	Raytheon, Portsmouth RI	16.354			0.000		0.000			22.136	0.000
Untethered Hardware Development	C/CPIF	TBD	0.000			0.000		0.000			1.258	0.000
Untethered Hardware Development	WX	NSWC PC	0.000			0.000		0.000			0.000	0.000
Subtotal Product Development			25.319			0.000		0.000			32.359	0.000
Remarks: AMNS ONLY												
Engineering Services	VAR	Various	3.300			0.000		0.000			3.300	0.000
Engineering Services	WX	NSWC	19.467			1.083	NOV-08	1.273	NOV-09		21.823	0.000
Engineering Services	C/CPIF	Raytheon, Portsmouth RI	8.895			0.807	NOV-08	0.590	NOV-09		10.292	0.000
Untethered Engineering Services	C/CPIF	TBD	0.000			0.000		0.000			0.995	0.000
Untethered Engineering Services	WX	NSWC PC	0.000			0.000		0.000			1.549	0.000
ILS Functions	WX	NSWC	4.506			0.291	NOV-08	0.194	NOV-09		4.991	0.000
ILS Functions	SS/BOA	Lockheed Syracuse NY	0.227			0.000		0.000			0.227	0.000
ILS Functions	C/CPIF	Raytheon, Portsmouth RI	1.986			0.126	NOV-08	0.084	NOV-09		2.196	0.000
Untethered ILS Functions	C/CPIF	TBD	0.000			0.000		0.000			0.229	0.000
Untethered ILS Functions	WX	NSWC PC	0.000			0.000		0.000			1.052	0.000
Subtotal Support Costs			38.381			2.307		2.141			46.654	0.000
Remarks: AMNS ONLY												
Development Test & Evaluation	VAR	Various	0.300			0.000		0.000			0.300	0.000
Development Test & Evaluation	WX	NSWC	20.652			3.029	NOV-08	2.787	NOV-09		26.468	0.000
Development Test & Evaluation	SS/BOA	Lockheed Syracuse NY	1.254			0.000		0.000			1.254	0.000
Development Test & Evaluation	C/CPIF	Raytheon Portsmouth RI	6.907			0.000		0.000			6.907	0.000
Operational Test & Evaluation	WX	COTF Norfolk VA	1.388			0.000	NOV-08	2.254	NOV-09		3.642	0.000

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Operational Test & Evaluation	SS/BOA	Lockheed Syracuse NY	0.767			0.000		0.000			0.767	0.000
Test Assets	C/CPIF	Raytheon Portsmouth RI	3.065			0.000		0.000			3.065	0.000
Untethered Test and Evaluation	C/CPIF	TBD	0.000			0.000		0.000			0.559	0.000
Untethered Test and Evaluation	WX	NSWC PC	0.000			0.000		0.000			2.798	0.000
Subtotal Test and Evaluation			34.333			3.029		5.041			45.760	0.000
Remarks: AMNS ONLY												
Program Management Support	VAR	Various	2.778			0.124	NOV-08	0.143	NOV-09		3.045	0.000
Travel	PD	NAVSEA	0.334			0.040	NOV-08	0.040	NOV-09		0.414	0.000
Untethered Program Management	VAR	TBD	0.000			0.000		0.000			0.406	0.000
Subtotal Management Services			3.112			0.164		0.183			3.865	0.000
Remarks: AMNS ONLY												
Hardware/Software Development	C/CPIF	Northrop Grumman, FL	32.129			2.750	OCT-08	2.335	OCT-09		38.214	0.000
Hardware/Software Development	WX	NSWC PC	1.854			1.258	OCT-08	0.690	OCT-09		4.812	0.000
Hardware/Software Development	RCP	Crane - Crane IN	2.595			0.375	OCT-08	0.375	OCT-09		3.395	0.000
Subtotal PRODUCT DEVELOPMENT RAMICS			36.578			4.383		3.400			46.421	0.000
Remarks: RAMICS ONLY												
Engineering Services	C/CPIF	Northrop Grumman FL	13.557			2.000	OCT-08	2.000	OCT-09		19.057	0.000
Engineering Services	WX	NSWC PC	9.984			1.500	OCT-08	1.500	OCT-09		14.484	0.000
Engineering Services	Various	Crane - Crane IN	3.107			0.045	OCT-08	0.045	OCT-09		3.297	0.000
Engineering Services	WX	Various	2.507			0.100	OCT-08	0.100	OCT-09		2.807	0.000
ILS Functions	C/CPIF	Northrop Grumman FL	6.495			0.350	OCT-08	0.350	OCT-09		7.695	0.000
ILS Functions	WX	NSWC PC	1.535			0.175	OCT-08	0.175	OCT-09		2.885	0.000
ILS Functions	Various	Various	2.580			0.475	OCT-08	0.525	OCT-09		3.680	0.000

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Subtotal SUPPORT COSTS RAMICS			39.765			4.645		4.695			53.905	0.000
Remarks: RAMICS ONLY												
Test & Evaluation	C/CPIF	Northrop Grumman, FL	7.915			3.758	OCT-08	3.095	OCT-09		15.518	0.000
Test & Evaluation	WX	NSWC PC	4.914			0.599	OCT-08	0.455	OCT-09		6.718	0.000
Test & Evaluation	WX	Crane - Crane IN	1.899			0.206	OCT-08	0.000	OCT-09		3.105	0.000
Test & Evaluation	Various	Various	7.838			0.203	OCT-08	0.300	OCT-09		9.091	0.000
Test & Evaluation	FFP	QinetiQ, UK	3.000			0.000	OCT-08	0.000	OCT-09		3.000	0.000
Subtotal TEST AND EVALUATION RAMICS			25.566			4.766		3.850			37.432	0.000
Remarks:												
Management Support	Various	Various	5.433			1.000	OCT-08	0.750	OCT-09		7.983	0.000
Management Support	PD	Travel	0.280			0.050	OCT-08	0.050	OCT-09		0.480	0.000
Subtotal MANAGEMENT SERVICES RAMICS			5.713			1.050		0.800			8.463	0.000
Remarks: RAMICS ONLY												
Total Cost			208.767			20.344		20.110			274.859	0.000

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE											DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System				

Fiscal Year	2008				2009				2010			
AMNS	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones		M S C ▲										
Prototype Phase	S D & D						[Bar from 2009 Q3 to 2010 Q2]					
ED M Contract Award												
Significant Events												
ED M Deliveries												
Test & Evaluation Milestones												
Developmental Testing (DT)			D T I / I I ■						D T I I I / L F T [Bar]			
Operational Testing (OT)											O T [Bar]	
Production Milestones												
LR IP		L R I P ▲										
FR P												
Deliveries												
LR IP								▲	[Bar from 2009 Q4 to 2010 Q4]			
FR P												

CLASSIFICATION:					UNCLASSIFIED																								
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009									
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM										PROJECT NUMBER AND NAME 2473A/RAMICS														
Fiscal Year	2008				2009				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		
Acquisition Milestones																													
Program Phases	System Development and Demonstration (SD&D)																												
Significant Events																													
EDM Delivery																													
Test & Evaluation Milestones																													
Production Milestones																													
LRIP																													
FRP																													

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 2473/Airborne Mine Neutralization System			
Schedule Profile		FY 2008	FY 2009	FY 2010				
AMNS								
SD&D Phase		1Q-4Q	1Q-4Q	1Q-2Q				
Milestone C (MS C)		2Q						
LRIP (MH-60S) Start		2Q						
Development Testing (MH-60s)		3Q-4Q		1Q-2Q				
Operational Testing (MH-60s) Start				4Q				
FRPDR (MH-60s)								
LRIP Delivers Start			4Q					
FRP (MH-60s) Start								
FRP Delivers Start								
RAMICS								
System Development and Demonstration (SD&D) Phase		1Q-4Q	1Q-4Q	1Q-4Q				
Program Assessmnet			2Q-3Q					
Software Requirements Verification			2Q-4Q	1Q-3Q				
Modeling			3Q-4Q					
SIM/STIM				3Q-4Q				
Engineering Development			3Q-4Q	1Q-4Q				
EDM Delivery			2Q					
Contractor Performance Testing (no AC)			1Q					
Flight Qualification Testing			3Q-4Q	1Q				
LIDAR Data Collection			3Q-4Q	2Q-3Q				
Gun Fire Testing				1Q-2Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 4026/Strat Into Medal, Tactics & Trng Organic Force		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	3.680	2.776	1.946				
RDT&E Articles Qty	0	0	0				
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.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 4026/Strat Into Medal, Tactics & Trng Organic Force	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.175	0.762	0.816
RDT&E Articles Quantity	0	0	0
FY08: Hardware/Software Development:			
FY09: Code core OPMA module			
FY10: Code system-specific OPMA Modules			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.342	1.851	1.015
RDT&E Articles Quantity	0	0	0
Engineering Services/ILS:			
FY08: OAMCM Tactics Continuum materials			
FY09: Reachback Support for tactical employment of OAMCM systems			
FY10: Incorporate tactics lessons learned into TACMEMOs			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.115
RDT&E Articles Quantity	0	0	0
T&E Support for MEDAL/PMA integration during WSIT CT and DT			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.163	0.163	0.000
RDT&E Articles Quantity	0	0	0
FY08: Field Activity program management and travel			
FY09: MEDAL contractor management support to CTMP			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM				PROJECT NUMBER AND NAME 4026/Strat Into Medal, Tactics & Trng Organic Force			
FY11: MEDAL contractor management support to CTMP									
C. OTHER PROGRAM FUNDING SUMMARY: To Total									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					Total Cost
OPN 4248, S0090, OPMA		0.256	0.256	0.256					0.768
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.									
E. MAJOR PERFORMERS: Major performers are various contractors, NAVO, and NSWC PC.									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM					PROJECT NUMBER AND NAME 4026/"Strat Into Medal, Tactics & Trng Organic Force"					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware/Software Development	RX	SAIC	1.256			0.250	NOV-08	0.275	NOV-09		1.781	0.000
Hardware/Software Development	WX	NSWC PC	1.993			0.512	OCT-08	0.541	OCT-09		3.046	0.000
Subtotal Product Development			3.249			0.762		0.816			4.827	0.000
Remarks:												
Engineering Services	WX	NAVO	0.030			0.004	OCT-08	0.000	OCT-09		CONT	0.000
Engineering Services	VAR	Various	0.560			0.172	OCT-08	0.272	OCT-09		CONT	0.000
Engineering Services	WX	NSWC PC	2.226			0.834	OCT-08	0.578	OCT-09		3.638	0.000
Engineering Services	RX	BAE	0.579			0.369	NOV-08	0.000			0.948	0.000
Engineering Services	RX	SAIC	0.590			0.150	NOV-08	0.000			0.740	0.000
ILS	WX	NSWC PC	0.893			0.322	OCT-08	0.165	OCT-09		1.380	0.000
Subtotal Support Costs			4.878			1.851		1.015			CONT	0.000
Remarks:												
Test and Evaluation	WX	NSWC PC	0.040			0.000		0.000			0.040	0.000
Subtotal Test and Evaluation			0.040			0.000		0.000			0.040	0.000
Remarks:												
Management Support	WX	NSWC PC	0.687			0.140	OCT-08	0.090	OCT-09		0.917	0.000
Management Support	RX	SAIC	0.083			0.023	NOV-08	0.025	NOV-09		0.131	0.000
Subtotal Management Services			0.770			0.163		0.115			1.048	0.000
Remarks:												
Total Cost			8.937			2.776		1.946			CONT	0.000

CLASSIFICATION:		UNCLASSIFIED																														
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5								PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM								PROJECT NUMBER AND NAME 4026/"Strat Into Medal, Tactics & Trng Organic Force"																
Fiscal Year	2008				2009				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					
MEDAL	Training development ALMDS				Training development RAMICS																											
									Post-FAT bug fixes, RAMICS																							
Organic PMA	Ongoing development for OAMCM P3I; software support																															
	OASIS S/W rqmts.				OASIS S/W																											
	ALMDS S/W rqmts.																															
	ALMDS S/W																															
	AMNS S/W								RAMICS S/W																							
Tactics & Databases Develop overarching CONOE for integrated MCM																																
Incorporate DT/OT Lessons Learned into TACMEMO					Q-20				OASIS																							
									ALMDS																							
					AMNS																											
Reachback support OAMCM																																
Establish and update Gear & Mine Database for OAMCM																																
Tactics, techniques, & procedures for environmental survey																																

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 4026/"Strat Into Medal, Tactics & Trng Organic Force"			
Schedule Profile		FY 2008	FY 2009	FY 2010				
MEDAL: ALMDS training development		1Q-4Q						
MEDAL: RAMICS training development			1Q-4Q					
MEDAL: RAMICS post FAT bug fixes			4Q					
OPMA: ongoing development for P3I; software		1Q-4Q	1Q-4Q	1Q-4Q				
OPMA: OASIS S/W requirements		3Q						
OPMA: ALMDS S/W requirements		1Q						
OPMA: ALMDS S/W		1Q-4Q						
OPMA: AMNS S/W		1Q-2Q						
OPMA: OASIS S/W			1Q-4Q	1Q-2Q				
OPMA: RAMICS S/W				1Q-4Q				
Develop CONOE for integrated MCM								
Incorporate DT/OT lessons learned into TACMEMO; Q20			1Q-4Q					
Incorporate DT/OT lessons learned into TACMEMO; AMNS			1Q-4Q					
Incorporate DT/OT lessons learned into TACMEMO; ALMDS			3Q-4Q	1Q-2Q				
Incorporate DT/OT lessons learned into TACMEMO; OASIS				1Q-4Q				
Incorporate DT/OT lessons learned into TACMEMO; RAMICS								
Reachback support, OAMCM		1Q-4Q	1Q-4Q	1Q-4Q				
Establish and update Gear & Mine database for OAMCM				1Q-4Q				
Tactics, techniques, & procedures for environmental survey								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM			PROJECT NUMBER AND NAME 9179/Surf Navy Integ Undersea Tactical Tech		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.550	0.666	0.959				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Surface Navy Integrated Undersea Tactical Technology (SNIUTT) will be used to develop an AN/SQQ-32, AN/AQS-14, AN/AQS-24, AN/AQS-20A and future OAMCM sensor training modules.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM				PROJECT NUMBER AND NAME 9179/Surf Navy Integ Undersea Tactical Tech			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		0.460		0.552		0.830			
RDT&E Articles Quantity		0		0		0			
Development of an AN/SQQ-32, AN/AQS-14, AN/AQS-24 and AN/AQS-20A sensor training module. Also development of a Scenario Generator software system for REMUS for mine like contact recognition training and ALMDS sensor training modules.									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		0.090		0.114		0.129			
RDT&E Articles Quantity		0		0		0			
SNIUTT In-Service Engineering Agent (ISEA) and development support is provided by Naval Surface Warfare Center, Panama City (NSWC PC).									
C. OTHER PROGRAM FUNDING SUMMARY:									
To Total									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
OPN 4248, S0090, SNUITT	0.120	0.120	0.120						0.360
D. ACQUISITION STRATEGY:									
Surface Navy Integrated Undersea Tactical Technology (SNIUTT) has been used to develop an AN/SQQ-32, AN/AQS-14, AN/AQS-24 and AN/AQS-20A sensor training modules. Funds will continue to support training for these four sonar systems, as well as training for the REMUS sonar systems and other OAMCM systems in the same format as previous training. The SNIUTT sensor training modules will be developed by NSWC PC, Panama City, FL, in association with Advanced Acoustic Concepts (AAC), Ronkonkoma, NY. NSWC PC will contract with AAC for this work under a Cost Plus Fixed-Fee (CPFF) scenario. Funds are being provided for development and delivery of refresher scenario based contact recognition training, and the update and modification of contact recognition training (interactive web based training and proficiency focused stand-alone training) in support of the SNIUTT program.									
E. MAJOR PERFORMERS:									
Major performers are various contractors, and NSWC PC.									

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604373N/AIRBORNE MCM	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.317	1.995	0.000
RD T&E Articles Quantity	0	0	0
Technology - In support of Airborne Mine Countermeasure (AMCM) systems, this initiative will provide open systems migration of unique military standard sensors, electronics, and software system components to lower cost/higher performance commercial equivalent capabilities. This effort will develop and accelerate an Open Architecture Multi-static Technology Insertion solution for the Navy's Airborne Mine Countermeasures Program. The anticipated result is lower cost/higher performance equivalent capabilities based on open architecture software and hardware components.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604378N/NAVAL INTEGRATED FIRE CONTROL			
COST (In Millions)				FY 2008	FY 2009	FY 2010	
Total PE Cost				14.612	13.295	11.727	
3159 / Naval Integrated Fire Control-Counter Air SE&I				11.144	10.503	11.727	
9999 / CONGRESSIONAL ADDS				3.468	2.792	0.000	
A. MISSION DESCRIPTION: A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3159 Naval Integrated Fire Control - Counter Air (NIFC-CA) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to extend the Naval Theater Air and Missile Defense battlespace out to the maximum kinematic range of our weapons. This includes targets beyond the detection range of the shooter, including Engage On Remote (EoR) and Over the Horizon (OTH) targets. The NIFC-CA project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates them together, performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize future air defense capabilities. NIFC-CA consists of three kill chains called From the Air (FTA), From the Sea (FTS), and From the Land (FTL). As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) kill chain consisting of the E-2D Advanced Hawkeye, Cooperative Engagement Capability (CEC), AEGIS, and SM-6 missile. This PE will support efforts including system definition and architecture development, performance prediction, performance assessment, system test and risk reduction efforts, system analysis, modeling and simulation, and capability demonstrations for the FTS kill chain. The project also facilitates the development of the concept of operations with the warfighter to maximize effectiveness when deployed with the Fleet. This PE also includes SEI&T activities to integrate the US Army's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) into the FTS kill chain as an elevated sensor and conduct a joint demonstration of that capability when the Navy systems are mature. 9999 The AN/SPS-49 Radar received a Congressional Add in 2008 and 2009. AN/SPS-49(V) radar system has become a Dimishing Manufacturing Source (DMS) issue with more than 17 Lowest Replaceable Units (LRU's) that are UTP (Unable To Procure). The AN/SPS-49(V) radar system is the Navy's primary two-dimensional (2D) long-range search radar. AN/SPS-49(V) radar systems are installed in CG, CVN, FFG, LSD, LHD classes and are planned for installation in the LHA (R) ship class. The AN/SPS-49 is scheduled to be in service another 40 years. The FY08 and FY09 Congressional Add enables continued support of the SPS-49 current fielded systems in the interim period before the Radar Common Signal Data Processor is fielded. This address the obsolescence and DMS issues associated with the many Automated Test Equipment platforms utilized to repair the radar components and facilitates the development and implementation of an interim test and repair strategy for the current radar platforms.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604378N/NAVAL INTEGRATED FIRE CONTROL	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	14.829	10.533	12.075
FY10 President's Budget	14.612	13.295	11.727
Total Adjustments	-0.217	2.762	-0.348
(U) Summary of Adjustments			
Congressional Adjustments	0.000	2.762	0.000
SBIR/STTR/FTT Assessment	-0.094	0.000	0.000
Program Adjustments	-0.123	0.000	-0.345
Rate/Misc Adjustments	0.000	0.000	-0.003
Total	-0.217	2.762	-0.348
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
Other RDT&E Related:	0.000	0.000	0.000
0603658N (CEC)	1.100	2.850	2.080
0604366N (Standard Missile SM-6)	190.678	221.956	151.844
0604307N (AEGIS)	9.007	19.421	24.978
BLI 019500 E-2D AIRCRAFT	0.000	13.049	13.365
D. ACQUISITION STRATEGY:			
Not Applicable			
E. MAJOR PERFORMERS:			
NSWC Dahlgren Division (NSWC DD), Dahlgren, VA			
Lockheed Martin (LM) Maritime Systems and Sensors (MS2), Moorestown, NJ			
Raytheon Co., Tucson, AZ			
Northrop Grumman Systems Corp, Integrated Systems (IS), Bethpage, NY			

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604378N/NAVAL INTEGRATED FIRE CONTROL	
Boeing Integrated Defense Systems (IDS), St. Louis, MO Johns Hopkins University (JHU) Applied Physics Laboratory (APL), Laurel, MD NSWC Port Hueneme (NSWC/PHD), Port Hueneme, CA Alion/MEI, Mclean, VA		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL				PROJECT NUMBER AND NAME 3159/Naval Integrated Fire Control-Counter Air SE&I		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	11.144	10.503	11.727				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3159 Naval Integrated Fire Control - Counter Air (NIFC-CA) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to extend the Naval Theater Air and Missile Defense battlespace out to the maximum kinematic range of our weapons. This includes targets beyond the detection range of the shooter, including Engage On Remote (EoR) and Over the Horizon (OTH) targets. The NIFC-CA project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates them together, performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize future air defense capabilities. NIFC-CA consists of three kill chains called From the Air (FTA), From the Sea (FTS), and From the Land (FTL). As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) kill chain consisting of the E-2D Advanced Hawkeye, Cooperative Engagement Capability (CEC), AEGIS, and SM-6 missile. This PE will support efforts including system definition and architecture development, performance prediction, performance assessment, system test and risk reduction efforts, system analysis, modeling and simulation, and capability demonstrations for the FTS kill chain. The project also facilitates the development of the concept of operations with the warfighter to maximize effectiveness when deployed with the Fleet. This PE also includes SEI&T activities to integrate the US Army's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) into the FTS kill chain as an elevated sensor and conduct a joint demonstration of that capability when the Navy systems are mature.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL	PROJECT NUMBER AND NAME 3159/Naval Integrated Fire Control-Counter Air SE&I	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.197	2.064	3.500
RDT&E Articles Quantity	0	0	0
Efforts: The Integration and Test (I&T) Integrated Product Team (IPT) develops and executes the test plan to assess the FTS operational capability, performs risk reduction testing leveraging various component system tests. Test data will be used over time to verify, validate, and accredit the FTS simulation federation. I&T IPT provides support to the Integrated Master Schedule (IMS) to include test design and planning, test security plans, data management and collection plans.			
FY08 Plan: Develops risk reduction plan for FTS deployment, NIFC-CA FTS Test Strategy, supports and monitors Advanced Area Defense Interceptor (AADi) test operations and results.			
FY09 Plan: Develops plans for JLENS demonstration, participates in SM-6 live-fire tests, provides test data to FTS simulation federation, E-2D test planning. Supports predictive analysis for program test events.			
FY10 Plan: Participates in CEC/E-2D and CEC/AEGIS test and integration planning, SM-6 development test/operational test (DT/OT) testing, JLENS system testing and integration into FTS kill chain for demonstration.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.339	3.066	0.400
RDT&E Articles Quantity	0	0	0
Efforts: The SEI&T Integrated Master Schedule (IMS) is used as the primary tool for project planning and monitoring the efforts being performed by the SEI&T government and industry teams. This integrated engineering plan integrates the FTS Programs of Record schedules and how they relate to the FTS SEI&T effort, and the critical path to deployment. The IMS measures program performance (Earned Value (EV)-like metrics), and is used as a planning tool as the FTS contributing programs deploy at different times. The IMS contains all the tasks required to support deployment of the FTS capability.			
FY08: Continue refinement of IMS established in FY07; establish project-level EV-like metrics; add SoS risk mitigation activities; continue to update and monitor.			
FY09: Incorporate detailed JLENS program schedule into IMS; add JLENS demonstration activities to IMS; update and monitor as required.			
FY10: Update and monitor as required.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.284	5.049	7.556
RDT&E Articles Quantity	0	0	0
Efforts: Engineering management and system definition including the development of the Systems Performance Document (SPD), SoS functional allocations, requirements, traceability, SoS trades studies, SoS information exchange requirements, interface specifications, and sensor network capability analysis. Provides for complete FTS kill chain performance analysis and interface verification through development of a federation of simulations provided directly from the FTS Programs of Record. Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain for deployment.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL	PROJECT NUMBER AND NAME 3159/Naval Integrated Fire Control-Counter Air SE&I	
FY08 Plan: Established system requirements, measure of effectiveness/measures of performance (MOE/MOPs), SoS interface requirement specs, integrate From the Air/From the Sea conops, continue builds for SoS Federation, conduct Performance Assessment Reports (system performance analysis), continue risk management and mitigation efforts, supports JLENS System Development and Demonstration (SDD) program for IFC issues, establish and update SoS Requirements Verification Matrix, finalize system architecture documentation. FY09 Plan: Update MOE/MOPs, update SoS interface requirement specs, continue builds for SoS Federation, conduct Performance Assessment Reports (system performance analysis), continue risk management and mitigation efforts, supports JLENS SDD program for IFC issues, update SoS Requirements Verification Matrix, support development of Fleet TacMemos. FY10 Plan: Update MOE/MOPs, update SoS interface requirement specs, continue builds for SoS Federation based on SoS test programs and results, conduct Performance Assessment Reports (SoS performance analysis), continue risk management and mitigation efforts, performs JLENS integration for demonstration.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.324	0.324	0.271
RDT&E Articles Quantity	0	0	0
Efforts: Perform Systems Engineering, Integration and Test with Army JLENS program. Supports modeling and simulation and predictive analysis with JLENS as airborne sensor in the FTS kill chain. Provides for demonstration planning, execution, and data analysis. FY08 Plan: Establish and integrate JLENS program into FTS SEI&T activities, provide system architecture documents and interface specs to JLENS, establish MOEs/MOPs for demonstration, incorporate JLENS risks into FTS risk management plans, preliminary modeling of performance. FY09 Plan: Continue participation in JLENS SDD, support demonstration planning efforts. FY10 Plan: Continue participation in JLENS SDD, finalize demonstration planning.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 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 Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Systems Engineering	WR	NSWC/DD - DAHLGREN VA	2.123			0.549	OCT-08	0.635	OCT-09		CONT	0.000
Systems Engineering	See Remark	Various	3.579			1.304	OCT-08	0.962	OCT-09		CONT	0.000
Systems Engineering	CPAF	JHU/APL - LAUREL MD	0.300			0.200	OCT-08	0.325	OCT-09		CONT	0.000
Systems Engineering	CPAF	NGMS - RESTON VA	0.452			0.200	OCT-08	0.310	OCT-09		CONT	0.000
Systems Engineering	CPAF	NGIS - Bethpage NY	1.780			0.800	OCT-08	1.070	OCT-09		CONT	0.000
Systems Engineering	CPAF	LM MS2 - Moorestown NJ	1.655			0.800	OCT-08	0.920	OCT-09		CONT	0.000
Systems Engineering	CPAF	RAYTHEON CO - TUCSON AZ	3.403			1.001	OCT-08	1.057	OCT-09		CONT	0.000
Systems Engineering	CPAF	Boeing IDS - ST LOUIS, MO	0.698			0.200	OCT-08	0.460	OCT-09		CONT	0.000
Systems Engineering	CPAF	CSCI - Springfield VA	0.500			0.200	OCT-08	0.000			CONT	0.000
Systems Engineering	WR	SWDG - Norfolk, VA	0.236			0.103	OCT-08	0.120	OCT-09		CONT	0.000
Systems Engineering	WR	COTF - Norfolk, VA	0.156			0.103	OCT-08	0.225	OCT-09		CONT	0.000
Systems Engineering	WR	NSWC/PHD	0.000			0.000		0.265	OCT-09		CONT	0.000
Subtotal Systems Engineering			14.882			5.460		6.349			CONT	0.000
Remarks: There are various types of contract and field activity costs for this category (Various).												
Integration and Test	WR	NSWC/DD - Dahlgren, VA	0.501			0.300	OCT-08	0.520	OCT-09		CONT	0.000
Integration and Test	CPAF	Raytheon Co., Tucson, AZ	0.300			0.400	OCT-08	0.470	OCT-09		CONT	0.000
Integration and Test	CPAF	LM MS2 - Moorestown, NJ	0.100			0.200	OCT-08	0.240	OCT-09		CONT	0.000
Integration and Test	CPAF	NGIS - Bethpage, NY	0.100			0.200	OCT-08	0.250	OCT-09		CONT	0.000
Integration and Test	See Remark	Various	3.487			1.214	OCT-08	1.120	OCT-09		CONT	0.000
Integration and Test	WR	NSWC/PHD	0.000			0.000		0.620	OCT-09		0.620	0.000
Subtotal Integration and Test			4.488			2.314		3.220			CONT	0.000
Remarks: These are various types of contract and field activity costs for this category (Various).												
Project Planning and Management	CPAF	Boeing IDS - St. Louis, MO	0.300			0.150	OCT-08	0.150	OCT-09		CONT	0.000
Project Planning and Management	CPAF	Raytheon Co. - Tucson, AZ	0.624			0.312	OCT-08	0.360	OCT-09		CONT	0.000
Project Planning and Management	CPAF	LM MS2 - Moorestown, NJ	0.594			0.297	OCT-08	0.297	OCT-09		CONT	0.000

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 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 Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Project Planning and Management	CPAF	NGIS - Bethpage, NY	0.594			0.297	OCT-08	0.360	OCT-09		CONT	0.000
Project Planning and Management	WR	NSWC/DD - Dahlgren, VA	0.450			0.225	OCT-08	0.261	OCT-09		CONT	0.000
Project Planning and Management	CPFF	MEI - Arlington, VA	1.056			0.531	OCT-08	0.610	OCT-09		CONT	0.000
Project Planning and Management	See Remark	Various	2.515			0.917	OCT-08	0.120	OCT-09		CONT	0.000
Subtotal Project Planning and Management			6.133			2.729		2.158			CONT	0.000
Remarks: These are various types of contract and field activity costs for this category (Various).												
Total Cost			25.503			10.503		11.727			CONT	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL	PROJECT NUMBER AND NAME 3159/Naval Integrated Fire Control-Counter Air SE&I	



NIFC-CA Planning Schedule

Other Related Programs

Capability	FY 08	FY 09	FY 10
NIFC-CA Project Activity	WSMR Events		
E-2D (AHE)	MS C		
CEC AN/USG-3A AHE Integration			
CEC AN/USG-2A AWS Integration			
CEC JLENS Integration			
Aegis Weapon System			
SM-6	Block I IOC		
JLENS			

Distribution Statement F: Further dissemination only as directed by PED IWS 7.0 (7 Jan 2008) or higher authority. Revision Dated: 16 April 2009

From the Sea (FTS) From the Air (FTA)

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL			PROJECT NUMBER AND NAME 3159/Naval Integrated Fire Control-Counter Air SE&I		
Schedule Profile		FY 2008	FY 2009	FY 2010			
WSMR Events		1Q-4Q	1Q				
E-2D IOC			1Q				
SM-6 IOC				4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604378N/NAVAL INTEGRATED FIRE CONTROL			PROJECT NUMBER AND NAME 9999/SUSTAINABILITY OF AN/NPS-49 COMMON SIGNAL DATA PRO		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	3.468	2.792	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 9C13A - AN/SPS-49(V) Radar received a Congressional Add in FY2008 and 2009. The AN/SPS-49(V) radar system has become a DMS issue with more than 17 LRUs (Lowest Replaceable Units) that are UTP (Unable To Procure). AN/SPS-49(V) radar system is the Navy's primary two-dimensional (2D) long-range search radar. AN/SPS-49(V) radar systems are installed in CG, CVN, FFG, LSD, LHD classes and are planned for installation in the LHA(R)ship class. The AN/SPS-49 is scheduled to be in service another 40 years. This enables continued support of the SPS-49 in the interim period before the Radar Common Signal Data Processor is fielded. This address the obsolescence and DMS issues associated with the many Automated Test Equipment platforms utilized to repair the radar components and facilitates the development and implementation of an interim test and repair strategy for the current radar platforms.							

CLASSIFICATION:			UNCLASSIFIED				
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604501N/ADVANCED ABOVE WATER SENSORS				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	113.107	138.546	236.078				
3186 / Air and Missile Defense Radar	92.920	106.250	190.046				
3187 / Periscope Detection	14.733	7.525	7.237				
3188 / Dual-Band Radar	5.454	5.624	5.697				
3232 / Multi-Mission Signal Processor	0.000	0.000	33.098				
9999 / CONGRESSIONAL ADDS	0.000	19.147	0.000				

A. MISSION DESCRIPTION:

Air and Missile Defense Radar (AMDR): The AMDR suite is being developed to fulfill Integrated Air and Missile Defense requirements for the next generation cruisers and destroyers. The AMDR will provide multi-mission capabilities, supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area 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 Area Air 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 and material provide for the development of an active phased array radar with the required capabilities to pace the evolving threat. 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. Additional funding was requested based on an updated program cost estimate developed to reflect the current system concept, radar sensitivity requirements, and acquisition strategy. The updated program cost estimate also identified additional required scope in the areas of software development, systems engineering and testing.

Periscope Detection: The CVN Periscope Detection Radar program develops and delivers a radar that provides automatic detection and discrimination of submarine periscopes using advanced algorithms enabling discrimination of periscopes from surface contacts, buoys, small boats, floating mines, etc. This effort is based on an advanced development model, developed in the PE 0603553N Antisubmarine Warfare. System Engineering efforts under RDT&E funding will convert the Advanced Demonstration Model (ADM) variant previously developed and being installed to a production representative model that addresses manufacturability, supportability and reliability aspects as well as full system certification.

Dual-Band Radar (DBR) Upgrades: The DBR Upgrades will fund future upgrades/technology insertion efforts for the Multi-Function Radar (MFR)/Volume Search Radar (VSR)/Dual Band Radar (DBR) suite. Upgrades and technology inserts are required to maintain the level of force protection needed for ship defense against all threats envisioned in the littoral environment. The upgrades will include all aspects of the radar system/subsystems, including hardware and software. Specific subsystem areas include the Array, T/R module, Receiver/Exciter, Signal Data Processor and power/cooling systems.

CLASSIFICATION:	UNCLASSIFIED																																										
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009																																								
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604501N/ADVANCED ABOVE WATER SENSORS																																										
Multi-Mission Signal Processor: Multi-Mission Signal Processor (MMSP) provides AAW/BMD Multi-mission capability for DDG 51-78 as part of DDG Modernization Program. Modifies SPY-1D Transmitter to enable dual beam for reduced frame times and better reaction time, and provides stability for all D(V) waveforms and avoid operational degradation. It improves performance in littoral, ducted clutter environments. Detects, tracks and support engagements of a broader range of threats. MMSP provides reduced environmental effects, and better track continuity on small threats in land clutter. Improves performance in electronic attack (EA) and chaff environments and provides greater commonality in computer programs and equipment. B. PROGRAM CHANGE SUMMARY: This PE was established for the FY2008 President's Budget. Previous Budget Submissions were PE 0604307N AEGIS Combat System Engineering - project 3044/Solid State Spy Radar and PE 0603513N/Shipboard System Component Development - project 4019/Radar Upgrades. Congressional Adds: Congressional Adds are for development of a common digital sensor architecture and development a National Radio Frequency R&D and Tech Transfer Center. Deployed above water sensors will be in service beyond FY45 and are unable to achieve or sustain operational effectiveness. Requirement is to develop supportability solution for deployed above water sensors. RF technology for above water sensors is required to meet Navy Radar Program objectives. RF technology will be brought to a readiness level in preparation for insertion into manufacturing. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Funding:</th> <th style="width: 15%;">FY 2008</th> <th style="width: 15%;">FY 2009</th> <th style="width: 15%;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>FY09 President's Budget</td> <td style="text-align: right;">118.900</td> <td style="text-align: right;">153.558</td> <td style="text-align: right;">158.296</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: right;">113.107</td> <td style="text-align: right;">138.546</td> <td style="text-align: right;">236.078</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">-5.793</td> <td style="text-align: right;">-15.012</td> <td style="text-align: right;">77.782</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">18.823</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td style="text-align: right;">-1.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: right;">-4.793</td> <td style="text-align: right;">-33.805</td> <td style="text-align: right;">81.687</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-0.030</td> <td style="text-align: right;">-3.905</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">-5.793</td> <td style="text-align: right;">-15.012</td> <td style="text-align: right;">77.782</td> </tr> </tbody> </table>				Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	118.900	153.558	158.296	FY10 President's Budget	113.107	138.546	236.078	Total Adjustments	-5.793	-15.012	77.782	(U) Summary of Adjustments				Congressional Adjustments	0.000	18.823	0.000	SBIR/STTR/FTT Assessment	-1.000	0.000	0.000	Program Adjustments	-4.793	-33.805	81.687	Rate/Misc Adjustments	0.000	-0.030	-3.905	Total	-5.793	-15.012	77.782
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	92.920	106.250	190.046				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Air and Missile Defense Radar (AMDR): The AMDR suite is being developed to fulfill Integrated Air and Missile Defense requirements for the next generation cruisers and destroyers. The AMDR will provide multi-mission capabilities, supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area 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 Area Air 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 and material provide for the development of an active phased array radar with the required capabilities to pace the evolving threat. 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. Additional funding was requested based on an updated program cost estimate developed to reflect the current system concept, radar sensitivity requirements, and acquisition strategy. The updated program cost estimate also identified additional required scope in the areas of software development, systems engineering and testing.							

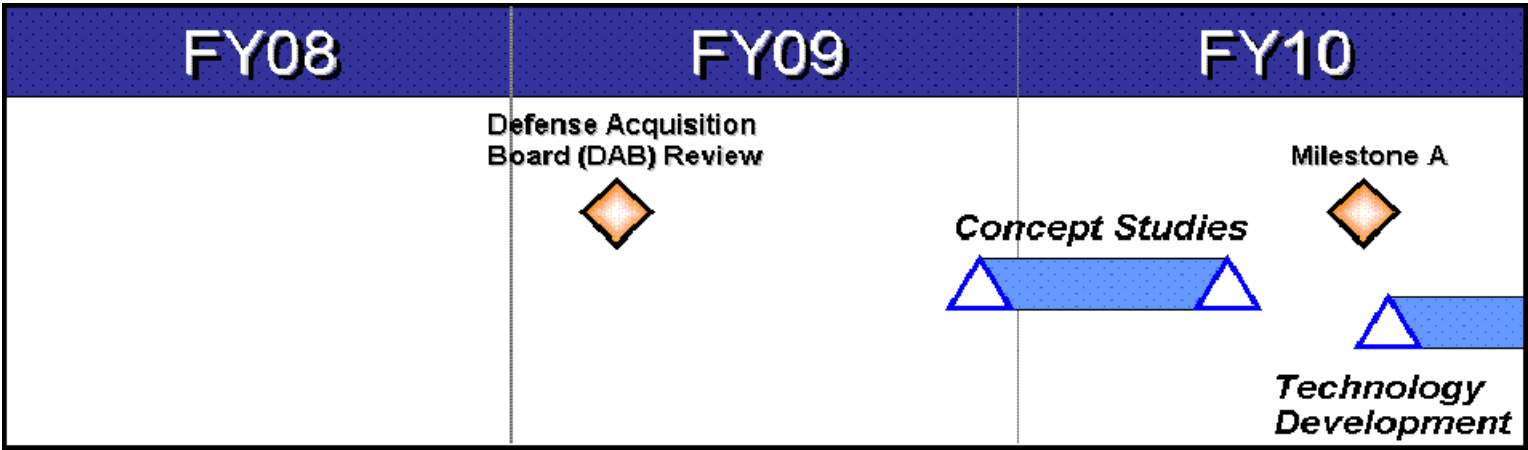
CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS	PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	43.273	15.000	4.500
RDT&E Articles Quantity	0	0	0
R&D / RISK REDUCTION			
Planned:			
- High Voltage (HV) GaAs Field Effect Transistor (FET) technology producibility - Technology Risk reduction of Digital Array Radar (DAR) / digital beamforming, array architectures, T/R modules, thermal management, and RF semiconductors. - Critical component and subsystem demonstrations, integration and testing - Conduct related international cooperative research projects, including ARTIST (U.K.), AUSPAR (Australia), and JUSRR (Japan).			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	38.483	76.450	169.846
RDT&E Articles Quantity	0	0	0
SYSTEMS ENGINEERING			
Planned:			
- Participate in the development of threat definitions, performance requirements and radar specifications; perform radar systems performance analysis. - Complete system requirements; resolve combat system and ship interfaces. - Develop T&E master plan. - Conduct AMDR competition and award development contract. - Conduct System Functional Review (SFR); decompose radar design requirements.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	11.164	14.800	15.700
RDT&E Articles Quantity	0	0	0
PROGRAM MANAGEMENT SUPPORT			
Planned:			
- Program planning, assessment of technical alternatives, risk identification and mitigation. - Cost and schedule development and execution.			

CLASSIFICATION:	UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS				PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar			
C. OTHER PROGRAM FUNDING SUMMARY:								
Line Item No. and Name	FY 2008	FY 2009	FY 2010					Total Cost
RD TEN 0604300N - 3107 CG(X) Development	84.078	84.518	0.000					168.596
RD TEN 0604300N - 3106 Combat System Integration	0.819	57.467	0.000					58.286
RD TEN 0204201N - 3107 CG(X) Development	0.000	0.000	99.131					99.131
RD TEN 0204201N - 3106 Combat System Integration	0.000	0.000	50.891					50.891
D. ACQUISITION STRATEGY: AMDR: Plans for the Air and Missile Defense Radar are to leverage research and development investments, integrate sufficiently 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 develop a product with the lowest life-cycle cost. Program scope includes systems engineering design and development; development and testing of a pilot array; completion of a full Engineering Development Model (EDM) for land-based testing; and transition to production.								
E. MAJOR PERFORMERS: R&D/Risk Reduction: Raytheon, Northrop Grumman, Lockheed Martin AMDR: TBD (Competitive Procurement)								

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS					PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Risk Reduction	WR	SCSC, Wallops	0.812			1.840	DEC-08	4.080	DEC-09		6.732	0.000
	MIPR	DMEA	33.270			7.743	DEC-08	2.600	DEC-09		43.613	0.000
	CPFF	JHU/APL	1.300			1.105	DEC-08	1.000	DEC-09		3.405	0.000
	MIPR	MIT	0.600			0.640	DEC-08	0.500	DEC-09		1.740	0.000
	WR	NRL	2.500			2.645	DEC-08	0.425	DEC-09		5.570	0.000
	CPAF	BAE Systems	0.800			1.049	DEC-08	0.500	DEC-09		2.349	0.000
	WR	NAVFAC MID-ATLANTIC	3.991			0.000	DEC-08	0.000			3.991	0.000
	WR	NSWC/DD	0.000			1.912	DEC-08	0.500	DEC-09		2.412	0.000
	MIPR	DARPA	0.000			4.500	DEC-08	0.000			4.500	0.00
System Engineering	CPIF	TBD - CR/TD	0.000			30.000	SEP-09	132.000	JUL-10		162.000	0.000
	WR	VARIOUS-System Engineering	0.000			0.000	DEC-08	0.000			0.000	0.000
	CPFF	JHU/APL	13.462			14.339	DEC-08	13.595	DEC-09		41.396	0.000
	MIPR	MIT	3.069			2.360	DEC-08	2.431	DEC-09		7.860	0.000
	WR	NSWC/PHD	1.202			0.912	DEC-08	0.939	DEC-09		3.053	0.000
	WR	NSWC/CR	0.556			0.245	DEC-08	0.432	DEC-09		1.233	0.000
	WR	NRL	0.125			1.218	DEC-08	1.375	DEC-09		2.718	0.000
	CPFF	GTRI	0.467			1.264	DEC-08	1.302	DEC-09		3.033	0.000
	CPAF	BAE Systems	7.451			2.085	DEC-08	2.148	DEC-09		11.684	0.000
	VAR	VARIOUS-SPECIAL	3.078			0.000		0.000			3.078	0.000
	WR	NSWC/DD	11.716			9.338	DEC-08	9.618	DEC-09		30.672	0.000
	WR	PMRF	0.000			0.499	DEC-08	0.918	DEC-09		1.417	0.000
Subtotal Product Development			84.399			83.694		174.363			342.456	0.000
Remarks:												
Support/ Management Services	CPAF	BAE Systems	2.000			2.489		0.000			4.489	0.000
	Various	Various	9.063			19.137	VAR	12.064	VAR		40.264	0.000
Support Management Services	CPIF	TBD - PSS	0.000			0.830	JUL-09	3.419	JUL-10		4.249	0.000
Travel			0.100			0.100	NOV-08	0.200	NOV-09		0.400	0.000
Subtotal Management Services			11.163			22.556		15.683			49.402	0.000
Remarks:												

CLASSIFICATION:			UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5			PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS					PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Total Cost			95.562			106.250		190.046			391.858	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE September 2008
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS	PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar	

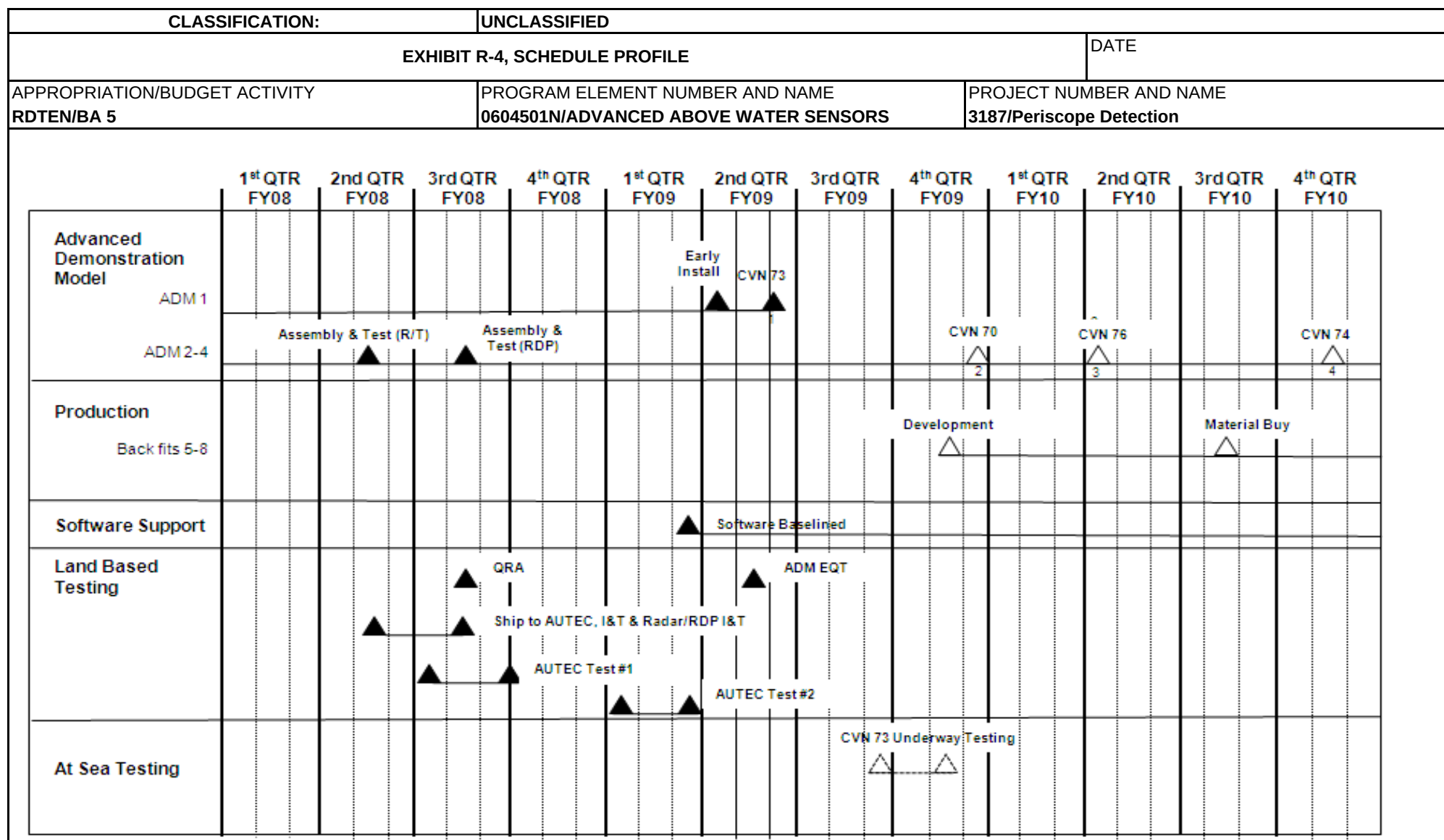


CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3186/Air and Missile Defense Radar		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Defense Acquisition Board (DAB) Review			Q2				
Concept Studies			Q4	Q1-Q2			
Milestone A				Q4			
Technology Development				Q4			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3187/Periscope Detection		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	14.733	7.525	7.237				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The CVN Periscope Detection Radar program develops and delivers a radar that provides semi-automatic detection and discrimination of submarine periscopes using advanced algorithms enabling discrimination of periscopes from surface contacts, buoys, small boats, floating mines, etc. This effort is based on an advanced development model, developed in the PE 0603553N, Surface Antisubmarine Warfare. System Engineering efforts under RDT&E funding will convert the Advanced Demonstration Model (ADM) variant previously developed and being installed to a production representative model that addresses manufacturability, supportability and reliability aspects as well as full system certification.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS				PROJECT NUMBER AND NAME 3187/Periscope Detection			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		14.733		7.525		7.237			
RDT&E Articles Quantity		0		0		0			
Planned: - Design an ADM using established capabilities from previous radars (Algorithms utilized by Automatic Radar Periscope Detection Discrimination (ARPDD), technology based in part on the AN/SPQ-9B Anti-Ship Cruise Missile (ASCM) Radar)) with modern computing advances in processing capability being inserted into the system using an Open Architecture approach. - Install ADM on platform(s) - Perform test and evaluation									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					Total Cost
02042228N/2040 Radar Support (OPN)		0.000	10.463	9.968					20.431
D. ACQUISITION STRATEGY:									
Periscope Detection : Current Program scope is for 11 total units - 10 for installation onboard CVNs and 1 at a to be determined shore site. Of these 11 units, 4 will be Advanced Demonstration Models (ADMs) and 7 will be Production Model units. Funding for 4 of the units will come from R&D (ADMs) in FY 06, FY 07 and FY 08 procurements, and 7 will be funded using OPN. The current proposed plan is for all units to be awarded sole source to Northrop Grumman Corporation (NGC) and 3 Phoenix Corporation. NGC will be responsible for the antenna, transmitter, and receiver. 3 Phoenix will be responsible for the processor for all 11 RDC units. Funding is also to be used to procure and install back-fit hardware/software to bring the first four ADM variants to production configuration.									
E. MAJOR PERFORMERS:									
NGC will be manufacturing the radar antenna, transmitter, and receiver. 3 Phoenix will be designing the initial radar signal processor under an existing SBIR contract. NSWCC Crane will assume full integration responsibility for the three prototype RDCs and the seven production RDC units.									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS					PROJECT NUMBER AND NAME 3187/Periscope Detection					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
System Engineering	CPFF	NGC	7.430			5.209	JAN-09	2.255	DEC-09		14.894	0.000
System Installation	TBD	TBD	6.903			2.016	JAN-09	4.512	DEC-09		13.431	0.000
Subtotal Product Development			14.333			7.225		6.767			28.325	0.000
NSWC PHD	WR		0.200			0.200	NOV-08	0.200	NOV-09		0.600	0.000
OPTEVFOR	WR		0.000			0.000		0.200	NOV-09		0.200	0.000
Travel			0.200			0.100	NOV-08	0.070	NOV-09		0.370	0.000
Subtotal Test and Evaluation			0.400			0.300		0.470			1.170	0.000
Total Cost			14.733			7.525		7.237			29.495	0.000



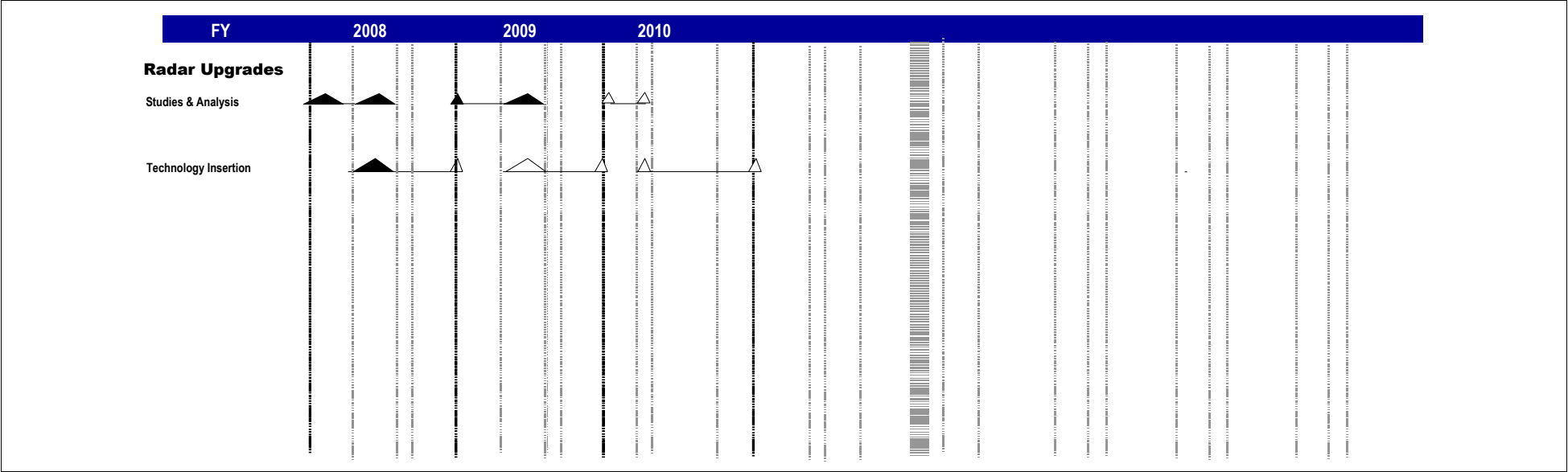
CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3187/Periscope Detection			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Advanced Demonstration Model (ADM)		Q1-Q4	Q1-Q4	Q1-Q4				
Production			Q4	Q1-Q4				
Software Support			Q1-Q4	Q1-Q4				
Land Based Testing (AUTEC)		Q3-Q4	Q1-Q2					
At Sea Testing			Q3-Q4					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3188/Dual-Band Radar		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	5.454	5.624	5.697				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Dual-Band Radar (DBR) Upgrades will fund future upgrades/technology insertion efforts for the Multi-Function Radar (MFR)/Volume Search Radar (VSR)/Dual Band Radar (DBR) suite. Upgrades and technology inserts are required to maintain the level of force protection needed for ship defense against all threats envisioned in the littoral environment. The upgrades will include all aspects of the radar system/subsystems, including hardware and software. Specific subsystem areas include the Array, T/R module, Receiver/Exciter, Signal Data Processor and power/cooling systems.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS				PROJECT NUMBER AND NAME 3188/Dual-Band Radar			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		3.140		3.000		3.000			
RDT&E Articles Quantity		0		0		0			
Radar Upgrades and Technology Insertion for the MFR/VSRR/DBR hardware and software.									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		2.314		2.374		2.422			
RDT&E Articles Quantity		0		0		0			
Government Engineering Services and Program Management support for radar upgrades and technology insertion of the MFR/VSRR/DBR radars. Perform oversight and assessment of efforts associated with this phase of the program.									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		0.000		0.250		0.275			
RDT&E Articles Quantity		0		0		0			
Provide Program Management in support of radar upgrades and technology insertion.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					Total Cost
BLI 211900/SCN DDG-1000		2,906.867	1,504.297	1,083.715					5,494.879
BLI 2001/SCN CARRIER REPLACEMENT PROGRAM		242.597	0.000	0.000					242.597
D. ACQUISITION STRATEGY:									
Upgrades will be developed to address lessons learned and technology refresh for DBR systems on multiple ship classes.									
E. MAJOR PERFORMERS:									
Northrop Grumman Ship Systems, Raytheon and Lockheed Martin.									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS					PROJECT NUMBER AND NAME 3188/Dual-Band Radar					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Systems Engineering	C/CPAF	DD (X) Design Agent	3.140			3.000	FEB-09	3.000	FEB-10		9.140	0.000
Subtotal Product Development			3.140			3.000		3.000			9.140	0.000
Remarks:												
Program Management Support	C/CPFF	Various	0.000			0.250	DEC-08	0.275	DEC-09		0.525	0.000
Subtotal Management Services			0.000			0.250		0.275			0.525	0.000
Remarks:												
	WR	Other Government Activities	0.479			0.574	DEC-08	0.497	DEC-09		1.550	0.000
	WR	NSWC/Dahlgren	0.450			0.550	DEC-08	0.600	DEC-09		1.600	0.000
	WR	NSWC/PHD	0.725			0.450	DEC-08	0.475	DEC-09		1.650	0.000
	WR	NSWC Crane	0.150			0.200	DEC-08	0.225	DEC-09		0.575	0.000
	WR	NRL	0.150			0.200	DEC-08	0.225	DEC-09		0.575	0.000
	CPFF	JHU/APL	0.060			0.100	FEB-09	0.100	FEB-10		0.260	0.000
		NSMA	0.300			0.300	FEB-09	0.300	FEB-10		0.900	0.000
Subtotal Government Engineering Support			2.314			2.374		2.422			7.110	0.000
Remarks:												
Total Cost			5.454			5.624		5.697			16.775	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS	PROJECT NUMBER AND NAME 3188/Dual-Band Radar	



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3188/Dual-Band Radar			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Radar Upgrade Studies and Analysis		Q1	Q1	Q1				
Radar Upgrade Technology Insertion		Q2-Q4	Q2-Q4	Q2-Q4				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3232/Multi-Mission Signal Processor		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	33.098				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Multi-Mission Signal Processor (MMSP) provides AAW/BMD Multi-mission capability for DDG 51-78 as part of DDG Modernization Program. Modifies SPY-1D Transmitter to enable dual beam for reduced frame times and better reaction time, and provides stability for all D(V) waveforms and avoid operational degradation. It improves performance in littoral, ducted clutter environments. Detects, tracks and support engagements of a broader range of threats. MMSP provides reduced environmental effects, and better track continuity on small threats in land clutter. Improves performance in electronic attack (EA) and chaff environments and provides greater commonality in computer programs and equipment. Multi-Mission Signal Processor FY 10							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS				PROJECT NUMBER AND NAME 3232/Multi-Mission Signal Processor			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
				FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost				0.000		0.000		33.098	
RDT&E Articles Quantity				0		0		0	
SYSTEMS ENGINEERING									
Multi-Mission Signal Processor FY 10 and outyear funding for Cruisers/Destroyers recently transferred from 0604307N/1447 to 0604501N/3232.									
FY10 Plan: Support Initial Capability Demonstration at Combat System Development Engineering Site.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008		FY 2009		FY 2010		Total Cost	
BLI 2980/OPN Items Less Than \$5M		6.000		0.200		18.000		24.200	
D. ACQUISITION STRATEGY:									
Multi-Mission Signal Processor (MMSP) provides AAW/BMD Multi-mission capability for DDG 51-78 as part of DDG Modernization Program and leverages BMD 4.0.1 and SPY-1D(V) designs. This MMSP development efforts will lead to the OPN procurement for sites and shipsets.									
E. MAJOR PERFORMERS:									
Lockheed Martin, Moorestown, NJ									

CLASSIFICATION:			UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5			PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS					PROJECT NUMBER AND NAME 3232/Multi-Mission Signal Processor				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
SYSTEM ENGINEERING	CPFF	Lockheed Martin	0.000			0.000		22.800	DEC-09		22.800	0.000
SYSTEM ENGINEERING	VAR	VARIOUS	0.000			0.000		10.298	DEC-09		10.298	0.000
Subtotal Product Development			0.000			0.000		33.098			33.098	0.000
Remarks:												
Total Cost			0.000			0.000		33.098			33.098	0.000

CLASSIFICATION:				UNCLASSIFIED												
EXHIBIT R-4, SCHEDULE PROFILE												DATE May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS				PROJECT NUMBER AND NAME 3232/Multi-Mission Signal Processor								
Fiscal Year	2010															
	1	2	3	4												
Multi-Mission Signal Processor	CSEDS ALO															
	10		4													
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 3232/Multi-Mission Signal Processor		
Schedule Profile		FY 2008	FY 2009	FY 2010			
MMSP CSEDS AEGIS Light Off (ALO)				Q1			
MMSP Production Readiness Review (PRR)				Q3			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604501N/ADVANCED ABOVE WATER SENSORS			PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	19.147	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Common Below Decks Affordable Architecture (9D77A / \$3.191M) - Congressional Add is to develop a common digital sensor architecture and to develop supportability solution for deployed above water sensors. National Radio Frequency R&D and Tech Transfer Center (9D78A / \$3.989M) - Congressional Add for RF technology. RF technology for above water sensors is required to meet Navy Radar Program objectives. RF technology will be brought to a readiness level in preparation for insertion into manufacturing. Advanced Sensor Development (9D79A / \$11.967M) - Congressional Add to develop and demonstrate the technology required to sustain supportability solution for deployed above water sensors. Efforts to be performed will be in the technology development phase to include interpreting user needs and operational capabilities, developing system performance and limitation specification, developing functional definitions for technologies, demonstrate system functionality, demonstrate integrated system ,and demonstrate and validate systems concepts and technology maturity.							

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604503N/SSN-688 AND TRIDENT MODERNIZATION					
COST (In Millions)		FY 2008	FY 2009	FY 2010				
Total PE Cost		114.354	142.836	122.733				
0219 / Sub Sonar Improvement (ENG)		59.548	67.651	59.321				
0742 / SUB INTEGRATED ANT SYS		31.818	57.851	40.667				
0775 / Submarine Supt Equip Prog		1.379	1.412	1.451				
1411 / SUBM TACT COMM SYS		15.439	15.922	21.294				
9999 / CONGRESSIONAL ADDS		6.170	0.000	0.000				
A. MISSION DESCRIPTION: 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.								

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604503N/SSN-688 AND TRIDENT MODERNIZATION	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	118.713	143.453	148.028
FY10 President's Budget	114.354	142.836	122.733
Total Adjustments	-4.359	-0.617	-25.295
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	-0.388	0.000
SBIR/STTR/FTT Assessment	-1.086	0.000	0.000
Program Adjustments	-2.887	-0.050	-24.252
Rate/Misc Adjustments	-0.386	-0.179	-1.043
Total	-4.359	-0.617	-25.295
FY09 through FY10 funding decrease due to the majority of the development CSD Inc 1 and SubHDR UNDEX being completed.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	59.548	67.651	59.321				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program delivers block updates to Sonar Systems installed on SSN 688, 688I Flight, SSN 21, SSGN, Virginia, and SSBN Class Submarines to maintain clear acoustical, tactical and operational superiority over submarines and surface combatants in all scenarios through detection, classification, localization and contact following. Acoustics Rapid COTS Insertion (A-RCI) was a multi-phased evolutionary development geared toward addressing Acoustic Superiority issues through the rapid introduction of interim development products applicable to all classes of submarines. A-RCI Phase I and II introduced towed array processing improvements, Phase III introduced spherical array processing improvements, and Phase IV provided High Frequency Array processing improvements for SSN 688I, SSGN, Virginia and SSN 21 Class Submarines. As part of CNO N872's plan to maintain acoustic superiority for In-Service Submarines a joint cooperative effort with PEO IWS-5 to deliver annual Advanced Processing Builds (APBs) to prevent obsolescence and deliver capability improvements is ongoing. The capabilities in the APBs will be integrated as part of A-RCI certified systems. Current developments to maintain Acoustic Superiority with new capability and prevent obsolescence are accomplished through annual Advanced Processing Builds (APBs). The capabilities in the APBs are integrated as part of the A-RCI certified systems. Sensor efforts provide increased operational capabilities for Littoral operations, situational awareness and reliability improvements. Towed system's development efforts provide increased operational capabilities and reliability 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, the Next Generation Fatline Towed Array (TB-34) which provide improved Littoral Operational capability and the Low Cost Conformal Array, an HF array that provides enhanced situational awareness.							

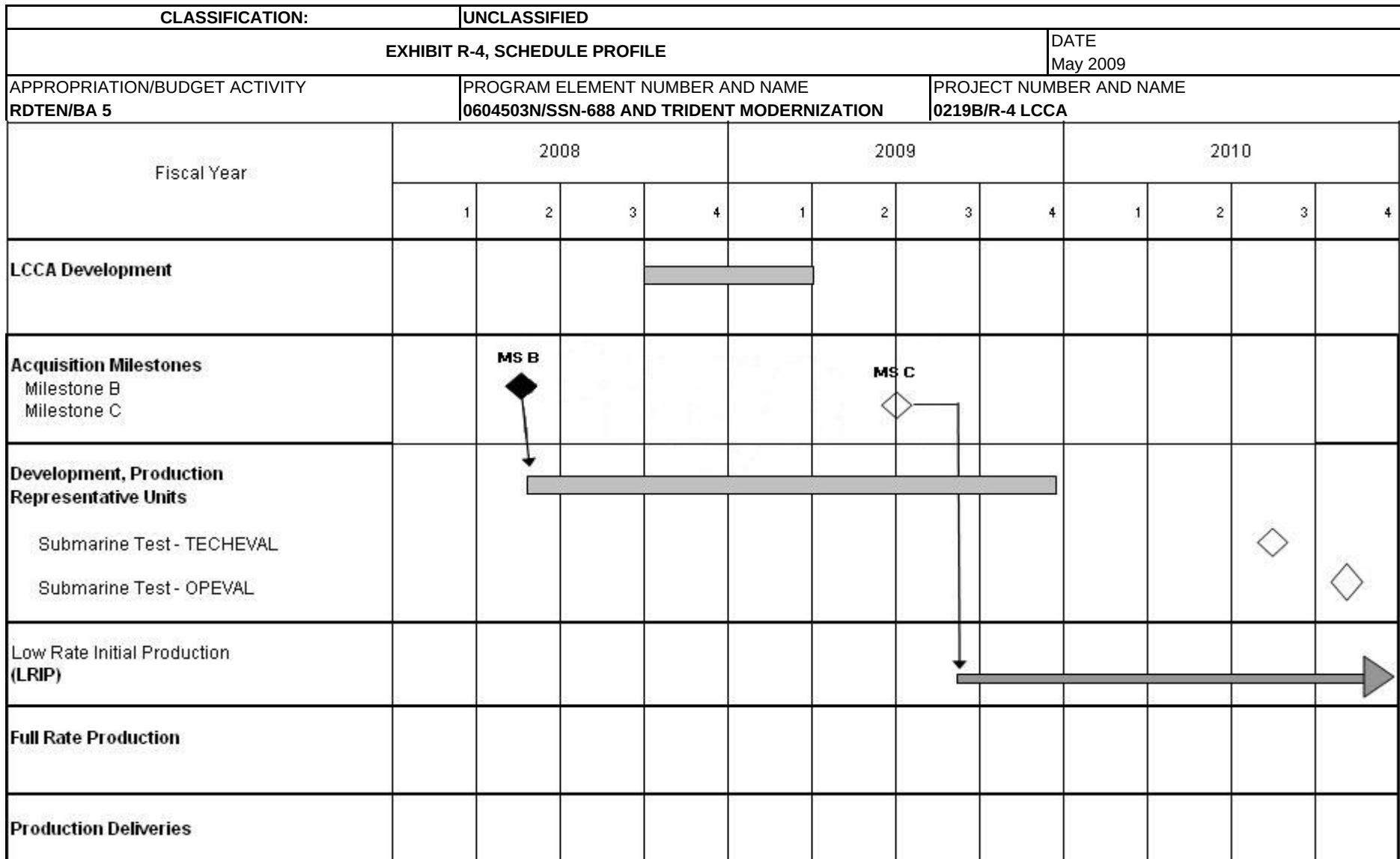
CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	14.106	14.562	15.476
RDT&E Articles Quantity	0	0	0
APB Productionization			
FY08 through FY10 - 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.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	28.224	32.298	40.489
RDT&E Articles Quantity	0	0	0
Integration and Testing.			
Awarded new contracts to Lockheed Martin and General Dynamics in FY04 for continued A-RCI and MPP development, integration and test.			
FY08 through FY10 - Continued Integration and testing to support the introduction of Advanced Processing Builds to be installed on SSN 688I, SSN 688, SSBN 730, SSN 21, SSGN 726, VA Class, and new sensors TB-34 Towed Arrays, TB-33 Towed Arrays and Low Cost Conformal Array (LCCA).			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.000	2.200	0.000
RDT&E Articles Quantity	0	0	0
HF Precision Imaging Active Sonar			
Begin development efforts for HF Precision Imaging Active Sonar in FY07. The HF Precision Imaging Active Sonar provides improvements for under-ice capability and mine detection. This will assist the submarine in maneuvering near the bottom in medium and littoral waters, as well as the marginal ice zone and ice pack regions.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	9.818	3.000	1.700
RDT&E Articles Quantity	0	0	0
Low Cost Conformal Array (LCCA) is a low cost HF array that provides enhanced situational awareness, providing the capability to extend passive detection range in littoral environments against quiet threats and multi-path ranging beyond first bottom bounce capability. The program is being developed by PEO-IWS-5 (PE 0603561N) and is currently scheduled to transition in FY08. EDM procurements, fabrication and assembly will begin in FY08. EDM Deliveries will be accepted in FY10. ARCI Integration, TECHEVAL and OPEVAL testing is planned for FY10.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.400	2.066	0.000

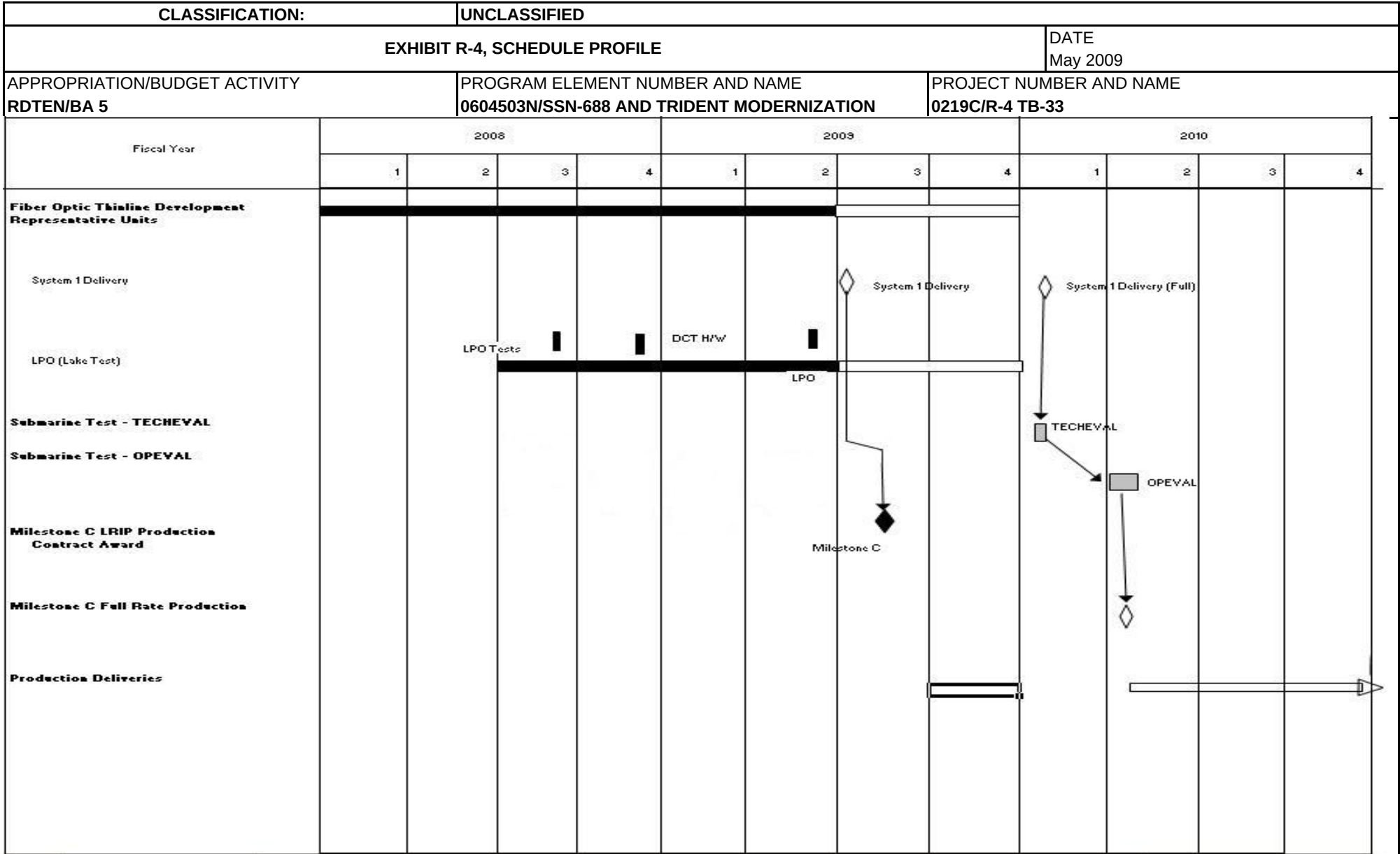
CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)			
RDT&E Articles Quantity			0		0		0	
Affordable Towed Array Technology (TB-33) development provides more affordable and reliable thinline arrays using fiber optic technology and eliminating "wet end" electronics. Program began development in FY04, completed Critical Design Review in FY06 and has transitioned to Production Representative Unit (PRU) Fabrication.								
FY08 - Continue development of ATAT and begin operational testing in support of MS C decision.								
FY09 - Complete development and transition to MS C low rate initial production (LRIP).								
			FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost			0.000		13.525		1.656	
RDT&E Articles Quantity			0		0		0	
Future Sensor Capability - Providing array capability improves long range passive detection and wide area search capability.								
C. OTHER PROGRAM FUNDING SUMMARY:								
Line Item No. and Name		FY 2008	FY 2009	FY 2010				
OPN BLI 214700 SSN Acoustics		235.979	203.311	243.052				
OPN BLI 214705 SSN Acoustics Installation		74.609	71.903	56.910				
Total		310.588	275.214	299.962				
D. ACQUISITION STRATEGY:								
Acoustic Systems:								
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 incentive fee contract will be awarded to Lockheed Martin Maritime Systems & Sensors and General Dynamics, Advanced Information Systems in December 2008. Program Review with Milestone Decision Authority will be conducted in November 2008 granting approval for the FY09 production option.								
Thinline Arrays:								
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. CDR was completed in FY06 and the program has transitioned to fabrication of Production Representative Units. Contract award for follow-on development awarded in 1st quarter FY07.								

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)	
Fatline Arrays: In FY04 Towed Systems awarded multiple competitive contracts for the development of a Fatline Towed Array which will provide better littoral operations and ranging. Development is complete and this program has now transitioned to initial production. Results of operational testing are expected in FY09. Hull Mounted Arrays: The Low Cost Conformal Array (LCCA) will transition from PEO IWS in FY08 with a competitive contract being awarded for the PRU development. PRU procurements, fabrication and assembly will begin in FY10. PRU Deliveries will be accepted in FY10. ARCI Integration, TECHEVAL and OPEVAL testing is planned for FY10. E. 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. 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.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION					PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Primary Hardware Development	SS/CPIF	LMC, Manassas, VA	189.925			16.500	FEB-09	25.447	DEC-09			
Primary Hardware Development	Various	Chesapeake Sciences, MD	31.626			1.724	DEC-08	0.000				
Ancillary Hardware Development	SS/CP	ARL University of Texas, TX	14.058			4.000	FEB-09	2.534	FEB-10			
Systems Engineering	SS/CP	John Hopkins APL, MD	16.742			3.800	DEC-08	1.642	DEC-09			
Systems Engineering	SS/CPAF	Lockheed Eagan, MN	12.032			2.500	JAN-09	1.085	JAN-10			
Primary Hardware Development	SS/CPAF	Progeny Systems, VA	20.481			2.200	JAN-09	6.221	JAN-10			
Primary Hardware Development	SS/CPIF	LM Syracuse, NY	10.318			3.000	DEC-08	0.500				
Systems Engineering	WR	NUWC, Newport, RI	120.922			7.400	DEC-08	7.615	DEC-09			
Systems Engineering	WR	NSWC, Carderock, MD	8.990			1.500	DEC-08	1.557	DEC-09			
Systems Engineering	WR	NSWC, Crane IN	0.503			0.000		0.000				
Systems Engineering	WR	Naval Research Lab, DC	1.342			0.300	DEC-08	0.000				
Primary hardware Development	SS/CPIF	LM (IWS 5)	0.000			11.768	JAN-09	4.752	JAN-10			
Hardware/Software Development	Various	SBIR (Various)	1.728			0.013	JUN-09	0.128	JUN-10			
Subtotal Product Development			428.667			54.705		51.481				
Remarks: Program Review 09 program increase of \$14.2M in FY09 to support transition of Twin Line thin Line Towed Array development from PEO-IWS-5 to PMS401.												
Primary Software Development	SS/CPAF	General Dynamics, AIS	132.726			4.957	MAY-09	2.449	DEC-09			
Primary Software Development	SS/CPFF	Sedna Digital, VA	6.880			5.629	DEC-08	3.604	DEC-09			
Subtotal Support Costs			139.606			10.586		6.053				
Remarks:												
Operational Test and Evaluation	WR	OPTEVFOR	4.987			1.400	DEC-08	0.684	DEC-09			
Subtotal Test and Evaluation			4.987			1.400		0.684				
Remarks:												
Management Support Services	C/CP	EG&G Technical Services	8.522			0.810	FEB-09	0.853	FEB-10			
Travel	WR	NAVSEA	1.050			0.150	NOV-08	0.250	NOV-09			
Subtotal Management Services			9.572			0.960		1.103				
Remarks:												
Total Cost			582.832			67.651		59.321				

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 0219/Sub Sonar Improvement (ENG)					
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones	Annual MDA Program Review ▲				Annual MDA Program Review ▲				Annual MDA Program Review △				
A-RCI APB I&T, Certification					APB-09								
Tech Insertion Development, I&T, Certification						TI-08							
Test & Evaluation Milestones			▲				△				△		
APB Sea Tests		▲				△			△				
Production FY08 FY09 FY10													





CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 0219D/R-4 TB-34					
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Milestone C Decision (LRIP)/ ARB	◆												
Additional LPO Prototype Performance and Reliability Testing		■											
Production Contract Award	◆												
Material Procurement, Fab and Assembly	■	■	■	■									
SEA Test (Including LPO)				■									
Submarine Test - TECHEVAL						■							
Submarine Test - OPEVAL								■					
Phase III Operational Test										◆			
Milestone C Decision (FRP)/ ARB													
Production Deliveries										■	■	■	
												▶	

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219A/R-4 Acoustics			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Milestone II (MS II) FY95								
ARCI APB Integration		1Q-2Q	1Q	1Q				
Annual Program Review		1Q-4Q	1Q-4Q	1Q-4Q				
Milestone C (MS C) FY04								
Production Awards		2Q	2Q	2Q				
APB Test Readiness Review (TRR)		2Q-3Q	4Q					
APB Sea Tests		2Q	3Q	2Q				
APB Deliveries		1Q	3Q	3Q				
Tech Insertions		1Q	4Q					
Installation Periods		1Q-4Q	1Q-4Q	1Q-4Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219B/R-4 LCCA		
Schedule Profile		FY 2008	FY 2009	FY 2010			
LCCA Development FY08-FY09		4Q	1Q				
Acquisition Milestone B (MS B) Start		2Q					
Acquisition Milestone C			3Q				
Acquisition Milestone B (MS B) Complete			4Q				
Production Representative Units Delivery		2Q-4Q	1Q-4Q				
Submarine Test - TECHEVAL				3Q			
Submarine Test - OPEVAL				4Q			
Low Rate Initial Production			3Q-4Q	1Q-4Q			

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EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219C/R-4 TB-33		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Fiber Optic Thinline Development FY02-FY09		1Q-4Q	1Q-4Q				
Detailed Design CDR FY06							
System Deliveries			3Q	1Q			
LPO Test (Lake Test)		3Q-4Q	2Q				
Submarine Test - TECHEVAL				1Q			
Submarine Test - OPEVAL				2Q			
MS C LRIP Production Contract Award			3Q				
MS C Full Rate Production				3Q			
Production Deliveries				3Q-4Q			

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EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0219D/R-4 TB-34		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Multiple Development Contracts Awarded FY05							
Additional LPO Prototype Performance and Reliability Testing		2Q-3Q					
Production Contract Award		1Q					
Protests Resolved		1Q					
Submarine Test - TECHEVAL			3Q				
Submarine Test - OPEVAL				1Q			
Milestone C Decision (FRP) / ARB				2Q			
Production Deliveries				2Q-4Q			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	31.818	57.851	40.667				
RDT&E Articles Qty	0	0	0				
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 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 transreceiver 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) Pre-Planned Product Improvement (P3I) efforts to existing antennas including Outboard Electronics-538/BRC (OE-538/BRC) Multi-Function Antenna, (2) OE-562 Submarine, High Data Rate (SubHDR) system development of Underwater Explosion (UNDEX) modification kits, (3) Development of new systems including Advanced High Data Rate (AdvHDR) and (4) 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. Notes/Comments: 1) FY09 through FY10 funding decrease due to the majority of the development CSD Inc 1 and SubHDR UNDEX being completed.							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Antenna Transition Engineering	3.601	4.531	4.536
RDT&E Articles Quantity			
FY08: Provided emerging requirements and satellite communications database/link analysis for other development programs (i.e. Mobile Users Objective System (MUOS)), WGS, High Frequency Internet Protocol (HF IP), Automatic Identification System (AIS). Continued P3I investigation and development efforts for the legacy antenna systems. Continued concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications. Investigated multiple usage antennas, i.e. antennas that can be used for communications and other purposes. FY09: Continue to provide emerging requirements and satellite communications database/link analysis for other development programs i.e. MUOS, Mobile Networking High-band (MNH), Intra-Battlegroup Wireless Network (IBGWN), Wideband Global SATCOM (WGS), Advanced EHF, Link 16, HF IP. Continue P3I investigation and development efforts for the legacy antenna systems. Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications; specifically to assess the impact to the sail and hull penetrators on different classes of submarines. Continue to investigate multiple usage antennas including antennas that can be used for communication and future submarine sail development. FY10: Continue to provide emerging requirements and satellite communications database/link analysis for other development programs i.e. MUOS, Link 16, WGS, Advanced EHF, other new waveforms. Continue P3I investigation and development efforts for the legacy antenna systems. Continue to investigate multiple usage antennas including antennas that can be used for communication in future submarine sail development. Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications; specifically to assess the impact to the sail and hull penetrators on different classes of submarines.			
	FY 2008	FY 2009	FY 2010
OE-538	2.202	6.884	10.376
RDT&E Articles Quantity			
FY08: Prepared required acquisition and contract documents in preparation for OE-538 Increment 2 Milestone B decision to support MUOS, Link 16, and Iridium incorporation into the OE-538 antenna. FY 09: Continue system design for Increment 2 EDM hardware/software. Commence preparation of integration and system testing of Increment 2 system. Continue system engineering including development of documentation in preparation for a Milestone B contract award and Integrated Logistics Support (ILS) products for Increment 2. FY10: Continue system design for Increment 2 EDM hardware/software. Continue integration and system testing of Increment 2 system. Continue system engineering including development of documentation and Integrated Logistics Support (ILS) products for Increment 2. Commence development/update of required Milestone C acquisition documents.			

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION		PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS	
	FY 2008	FY 2009	FY 2010	
SubHDR P3I	2.093	8.329	1.722	
RDT&E Articles Quantity				
FY08: Commenced concept development and System Engineering for SubHDR antenna enhancement efforts required for compatibility with grade-A shock requirements. Commenced program planning, ECP/Integrated Logistic System (ILS) documentation and test support development of Grade-A shock requirements.				
FY09: Continue system engineering for the development efforts to meet grade-A shock requirement. Commence development of grade-A shock (UNDEX) improvement kits. Continue program planning, ECP/ILS documentation development, system integration and Design Verification Test (DVT) procedures.				
FY10: Continue UNDEX development and testing. Commence research and analysis on SubHDR components to increase performance reliability.				
	FY 2008	FY 2009	FY 2010	
Advanced HDR	4.284	14.007	7.830	
RDT&E Articles Quantity				
FY08: Commenced system definition/risk reduction and system development efforts. Initiated technology demonstration to prove maturity of system concept. Developed system development test documents and procedures. Commenced Milestone B documentation preparation.				
FY09: Continue design and acquisition documentation development in support of Milestone B. Continue system definition/risk reduction and system development efforts. Continue technology maturation and demonstration efforts. Continue system development engineering efforts.				
FY10: Continue design and acquisition documentation development in support of Milestone B. Continue system definition/risk reduction and system development efforts. Continue technology maturation and demonstration efforts. Continue system development engineering efforts.				
	FY 2008	FY 2009	FY 2010	
Communications (Comms) at Speed and Depth	19.638	24.100	16.203	
RDT&E Articles Quantity				
FY08: Continued cost share technology development with ONR for SeaDeep project. Continued to develop acquisition documentation, program management, contract management and systems engineering oversight in support of a Milestone B decision. Awarded a design/development contract for Increment 1 Engineering Development Models (EDMs). Installed the RTOF system aboard an OHIO Class submarine and provided technical oversight for the at-sea test. Removed RTOF and restored the boat to its original configuration. Continued testing and participating in the Sea Eagle Advanced Capability Technology Demonstration (ACTD) Military Utility Assessment (MUA) for Deep Siren Tactical Paging Buoy.				
FY09: Continue to develop Increment 1 EDMs and test assets for certification. Plan for developmental testing and an operational assessment (DT/OA) of the EDMs to				

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)							DATE		
							May 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RD TEN/BA 5		0604503N/SSN-688 AND TRIDENT MODERNIZATION			0742/SUB INTEGRATED ANT SYS				
include updating the Test and Evaluation Master Plan (TEMP). Prepare Ship Alterations (SHIPALTs) in support of the EDM installations. Development of Increment 1 Capabilities Production Document (CPD), update acquisition documentation program management, contract management and systems engineering documentation in support of Milestone C - Low Rate Initial Production (LRIP).									
FY10: Continue the design and development of the Increment 1 EDMs and test assets including integrating the CSD capability into the shore Broadcast Control Authority (BCA). Conduct developmental testing and an operational assessment (DT/OA) of the EDMs. Provide ongoing acquisition, program management, contracting and systems engineering oversight in support of CSD to include updating all acquisition documentation in preparation for a Milestone C decision.									
C. OTHER PROGRAM FUNDING SUMMARY:									
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.									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						
3130 Submarine Communications	82.773	79.526	48.729						
D. ACQUISITION STRATEGY:									
Program Milestones: FY08 3rd QTR CSD Milestone B (MS-B) for Increment 1; FY09 2nd QTR OE-538 INC 2 MS B.									
The acquisition strategy of the CSD program is an Evolutionary Acquisition effort that will produce various capabilities to be fielded in Increments. The Program of Record will enter the Joint Capability Integration and Development System (JCIDS) process, in accordance with DoD 5000.2. The CSD Program focuses on providing Internet Protocol (IP), medium data rate, two-way communication with a submerged submarine throughout the full range of tactically relevant speeds and depths. A family of solutions is required to meet the multitude of communications and operational requirements on general Information Technology (IT) capabilities used by ship and shore operators.									
T&E Milestones:									
Contract Milestones:									
OE-538: 4th QTR FY09 Development Contract Award									
SubHDR: 2nd QTR FY08 FOT/SHF Procurement Contract									
SubHDR: 4th QTR FY08 GBS/SHF Procurement Contract									
CSD: 2nd QTR FY09 Development Contract Award									

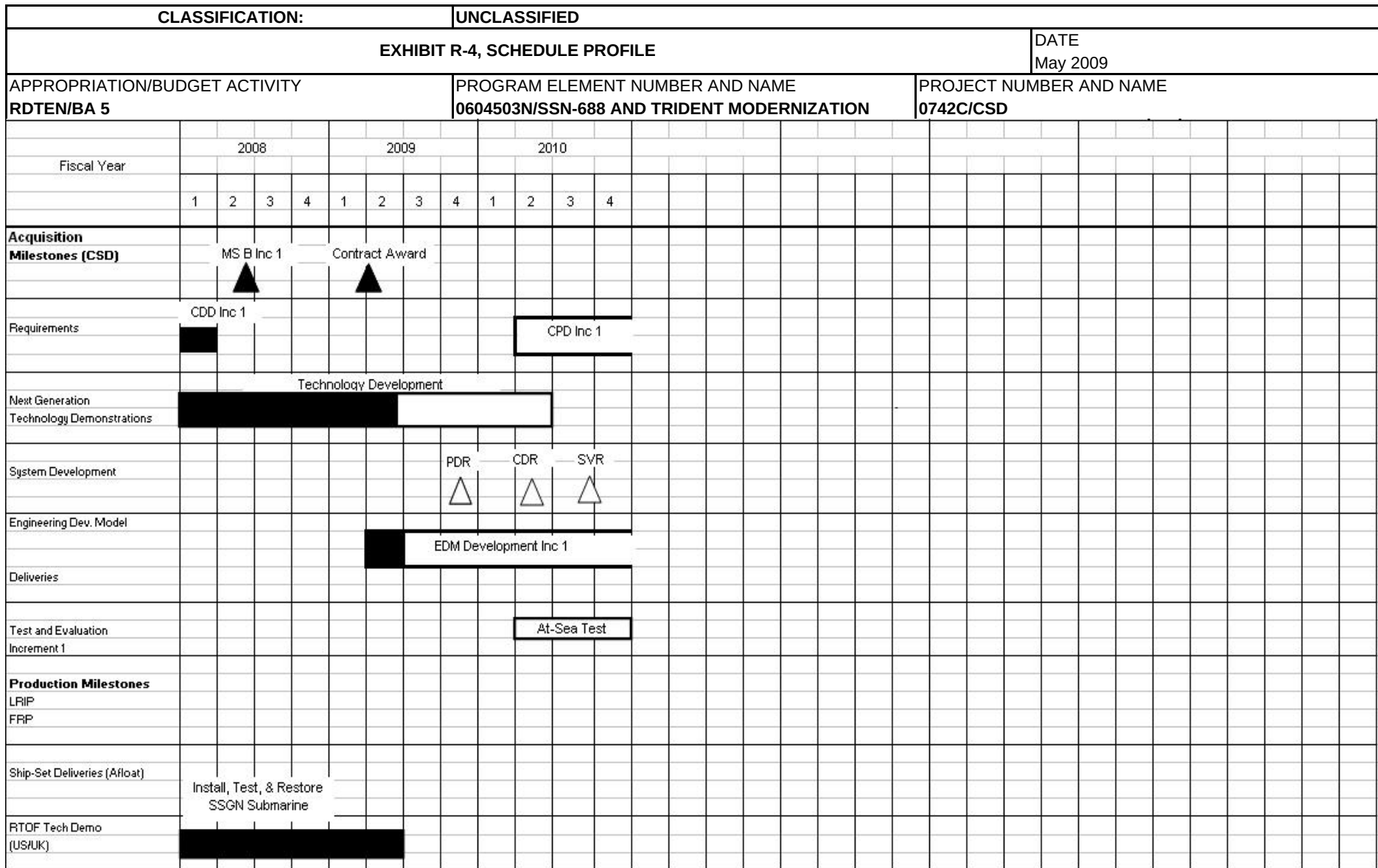
CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS	
E. MAJOR PERFORMERS: Raytheon, Marlboro, MA - SHF/FOT Development, SubHDR Development Naval Undersea Warfare Center, Division Newport, RI - System Engineering, Technical Design Agent			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION					PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Digital Interface Dev (SubHDR)	CPAF	Raytheon, Marlboro, MA	3.545			0.000		0.000				
Digital Dev (SubHDR)	CPAF	Raytheon, Marlboro, MA	8.182			0.000		0.000				
Hardware Dev (SubHDR)	WX	NUWC, Newport, RI	2.723			0.477	DEC-08	0.250	DEC-09			
Hardware Dev (HDR SHF/FOT)	CPAF	Raytheon, Marlboro, MA	14.632			0.000		0.000				
Hardware Dev (AdvHDR)	WX	NUWC, Newport, RI	0.000			0.000		0.000				
Hardware Dev (Trans Eng)	CPAF	Sippican Marion, MA	1.910			0.000		0.000				
Hardware Dev (CSD)	CPAF	Apogen, CA	2.800			0.000		0.000				
Systems/Hardware Dev (CSD)	CPAF	Various	14.453			16.381	NOV-08	6.902	NOV-09			
Hardware Dev (OE-538)	CPAF	TBD	0.000			3.213	MAY-09	7.049	JAN-10			
Systems Engineering (OE-538)	CPAF	TBD	1.105			1.497	MAY-09	1.000	JAN-10			
Systems Engineering (OE-538)	WX	NUWC, Newport, RI	1.177			1.600	DEC-08	1.000	DEC-09			
Systems Engineering (SubHDR)	CPFF	Raytheon, Marlboro, MA	6.717			3.350	FEB-09	0.000				
System Engineering (SubHDR)	WX	NUWC, Newport, RI	12.571			1.850	DEC-08	0.000				
Systems Engineering (AdvHDR)	WX	NUWC, Newport, RI	7.316			7.662	DEC-08	2.450	DEC-09			
System Engineering (Trans Eng)	WX	NUWC, Newport, RI	16.360			3.583	DEC-08	3.450	DEC-09			
System Engineering (Trans Eng)	Various	Various	5.415			0.950	DEC-08	0.965	DEC-09			
System Engineering (CSD)	Various	Various	5.126			2.000	DEC-08	2.541	DEC-09			
System Engineering (CSD)	WX	SSC-SD, San Diego, CA	2.157			1.035	DEC-08	1.680	DEC-09			
Systems Engineering (CSD)	WX	NUWC, Newport, RI	9.333			1.850	DEC-08	1.809	DEC-09			
UNDEX Kit Development (SubHDR)	CPAF	Raytheon, Marlboro, MA	0.000			1.782	FEB-09	1.222	FEB-10			
Technology Maturation/Demonstrations Dev(AdvHDR)	CPAF	Various	0.000			6.345	JAN-09	6.176	JAN-10			
Research and Analysis Reliability Dev (SubHDR)	CPAF	TBD	0.000			0.000		0.000				
Subtotal Product Development			115.522			53.575		36.494				
Remarks:												
Software Development	WX	NUWC, Newport, RI	0.739			0.000		0.000				
Integrated Logistics Support	Various	Various	3.670			1.185	DEC-08	1.293	DEC-09			
Subtotal Support Costs			4.409			1.185		1.293				
Remarks:												

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION					PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Test & Evaluation (CSD)	WX	COTF	0.230			0.120	DEC-08	0.265	DEC-09			
Test & Evaluation (OE-538)	WX	COTF	0.070			0.070	NOV-08	0.082	NOV-09			
Test & Evaluation (SubHDR)	WX	NUWC, Newport, RI	0.272			0.750	DEC-08	0.550	DEC-09			
Developmental/Operational T&E	Various	Various	1.267			0.000		0.000				
Test & Evaluation (CSD)	WX	SSC-SD, CA	0.268			0.850	DEC-08	0.560	DEC-09			
Subtotal Test and Evaluation			2.107			1.790		1.457				
Remarks:												
Program Management Support	Various	Various	6.602			1.301	NOV-08	1.423	NOV-09			
Subtotal Management Services			6.602			1.301		1.423				
Remarks:												
Total Cost			128.640			57.851		40.667				

CLASSIFICATION:		UNCLASSIFIED																											
EXHIBIT R-4, SCHEDULE PROFILE																							DATE May 2009						
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION										PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS														
Fiscal Year	2008				2009				2010																				
	1	2	3	4	1	2	3	4	1	2	3	4																	
Acquisition (SubHDR) Milestones	★ FOT/SHF IOC																												
System Development					Underwater Explosion (UNDEX)																								
Performance Reliability Development/Testing											Research & Analysis for Performance Reliability																		
Production Representative EDM Deliveries	▲	▲▲																											
Hardware Delivery Initial Build Final Build																													
Test & Evaluation Milestones																													
Development Testing Technical Evaluation Operational Evaluation	▲ OT																												
FOT/SHF Procurement Contract Award	26	Option 1	▲						31	Option 1	▲																		
FOT/SHF Production Deliveries												26	▲																
GBM/SHF Procurement Contract Award						19	▲	29	Option 1	▲																			
GBM/SHF Production Deliveries												19	29	▲															

CLASSIFICATION:		UNCLASSIFIED																																		
EXHIBIT R-4, SCHEDULE PROFILE																							DATE					May 2009								
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME														PROJECT NUMBER AND NAME													
RD TEN/BA 5									0604503N/SSN-688 AND TRIDENT MODERNIZATION														0742B/Adv HDR													
Fiscal Year	2008				2009				2010																											
	1	2	3	4	1	2	3	4	1	2	3	4																								
Acquisition (AdvHDR)									Technology Development																											
Milestones																																				
Requirements																																				
Technology Demonstration																																				
System Development																																				
Engineering Dev Model																																				
Development Test																																				
Contract/Deliveries (Down select)																																				
Vendor 1																																				
Vendor 2																																				



CLASSIFICATION:					UNCLASSIFIED																								
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009									
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION										PROJECT NUMBER AND NAME 0742D/OE-538														
Fiscal Year	2008				2009				2010																				
	1	2	3	4	1	2	3	4	1	2	3	4																	
Acquisition OE-538 Inc 2 Milestones						MS B																							
Requirements	CDD									CPD																			
System Development									PDR																				
Engineering Dev. Model										System Development																			
Development Contract Award										EDM Development																			
Testing																													
Contract Deliveries																													
LRIP Contract Option																													
LRIP Deliveries																													
FRP Contract Option																													
FRP Deliveries																													

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0742/SUB INTEGRATED ANT SYS		
Schedule Profile		FY 2008	FY 2009	FY 2010			
FOT/SHF Production Representative EDM		1-2Q					
FOT/SHF Operational Evaluation (OPEVAL)		1Q					
Research & Analysis for Performance Reliability				1-4Q			
Performance Reliability Development/Test							
FOT/SHF IOC		1Q					
FOT/SHF Contract Award		2Q					
FOT/SHF Full Rate Production (FRP) First Delivery			3Q				
GBS/SHF Contract Award		4Q					
GBS/SHF Full Rate Production (FRP) First Delivery				1Q			
UNDEX Development			1-4Q	1Q			
UNDEX Contract Option				2Q			
UNDEX Full Rate Production (FRP) First Delivery							

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0742B/Adv HDR		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Milestone B Decision (MS B)							
Milestone C Decision (MS C)							
EDM Award							
EDM Delivery							
Capabilities Development Document (CDD)			3Q-4Q	1Q-2Q			
Capabilities Production Document (CPD)							
Preliminary Design Review (PDR)							
Critical Design Review (CDR)							
Operational Assessment (OA)							
LRIP Award							

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0742C/CSD		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Technology Demonstrations		1Q-4Q	1Q-4Q	1Q-4Q			
RTOF Install, Test, and Restore		1Q-4Q	1Q-2Q				
Capabilities Development Document Increment 1		1Q					
Milestone B Decision Increment 1		2Q					
Contract Award Increment 1		4Q					
EDM Development Increment 1		4Q	1Q-4Q	1Q-4Q			
Preliminary Design Review (PDR) Increment 1			3Q				
Critical Design Review (CDR) Increment 1			4Q				
EDM Deliveries Increment 1				1Q			
Capabilities Production Document (CPD) Increment 1			1Q-4Q				
Test and Evaluation Increment 1				1Q-4Q			
Milestone C Decision Increment 1							
Initial Operational Capability (IOC) Increment 1							
Follow-on Test & Evaluation Increment 1							
Capabilities Development Document (CDD) Increment 2							
Milestone B Decision Increment 2							
EDM Development Increment 2							
Development Acquisition Documentation Increment 2							

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0742D/OE-538			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Capability Development Document (CDD)		1Q-4Q						
Milestone B Decision (MS B)			2Q					
Development Contract Award			3Q					
System Development			3Q-4Q	1Q-4Q				
Engineering Development Model Development			3Q-4Q	1Q-4Q				
Preliminary Design Review (PDR)			4Q					
Critical Design Review (CDR)								
Eng Dev Model (EDM) - Delivery								
Developmental Test (DT)								
Operational Assessment								
Operational Test (OT)								
Capability Production Document (CPD)				1Q-4Q				
Milestone C (MS C) Decision								
LRIP								
LRIP First Delivery								
Full Rate Production Decision								
IOC								
Full Rate Production Contract Award								
Full Rate Production First Delivery								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0775/Submarine Supt Equip Prog		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.379	1.412	1.451				
RDT&E Articles Qty	0	0	0				
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; Information Operations, Special Operations Force (SOF) Support; 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) Resolution of software trouble reports during technology updates, from fleet feedback reports, and Submarine Warfare Federated Tactical System (SWFTS)/Non Propulsion Electronic System (NPES) Tactical Local Area Network (TACLAN) migrations; (3) Integration, test, and installation of COTS technology for system enhancements. The Advanced Electronic Warfare Support (ES) Development Projects include the development of: PATRIOT Phase B - Low Probability of Intercept (LPI) Radar, LPI Direction Finding (DF), Distant ES Support and Remote Log-In, Specific Emitter Identification (SEI) Improvements, ES Vulnerability Tool, Integrated ES and ECS Radio Frequency Distribution Unit (RFDU), Multi-function Modular Mast (MMM) payloads, Mast Signature Reduction, PATRIOT Non-Scanning LPI Radar, Capability and Technical Initiatives, and next generation processes and radar wideband miniaturization. RDTE Funding line supports the entire AN/BLQ-10 ES procurement program. Average FY OPN and SCN hardware procurement yearly funds are \$100M.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 0775/Submarine Supt Equip Prog	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.379	1.412	1.451
RDT&E Articles Quantity	0	0	0
FY 08 Conduct Test of Specific Emitter Identification enhancements, Automatic Contact Correlation, LPI Receiver DF, EVS Test, Auto Calibration & testing, IO payload development, algorithm development. NPES and SWFTS software baseline changes.			
FY 09 Conduct Test of Specific Emitter Identification, Automatic Contact Correlation, and LPI Receiver. Passive Ranging Development and Processor improvements. Research and resolve AN/BLQ-10 SPRs			
FY 10 Complete Test of LPI Receiver. Develop remote maintenance, processor improvements, Advanced EW tuners, and IO payloads. Research and resolve AN/BLQ-10 SPRs. NPES and SWFTS software baseline changes.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN LI 2560/Submarine Supt Equip Prog	118.896	103.291	98.645
SCN LI 201300/Virginia Class Submarine	25.824	28.045	28.206
Related RDT&E:			
(U) PE 0603562N/Submarine Tactical Warfare System			
D. ACQUISITION STRATEGY:			
AN/BLQ-10 (V) ES System - Procurements are executed/managed in accordance with the Acquisition Strategy Report (Rev 4) for AN/BLQ-10(V) ES System dtd 3/7/06 and the Acquisition Plan (Rev 6) for AN/BLQ-10(V) ES System dtd 3/7/06.			
E. 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:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION					PROJECT NUMBER AND NAME 0775/Submarine Supt Equip Prog					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
AN/BLQ-10 ES Product Development	CPFF	Various Contractors	1.770			0.626	MAR-09	0.471	MAR-10			
Systems Engineering & Test Spt	WX	NUWC, Newport, RI	1.312			0.380	MAR-09	0.500	MAR-10			
Miscellaneous	Various	Various	0.235			0.041	MAR-09	0.100	MAR-10			
Subtotal Product Development			3.317			1.047		1.071				
Remarks:												
Engineering Technical Services	CPAF	AT&T GSI, VA	0.680			0.221	MAR-09	0.230	MAR-10			
Subtotal Support Costs			0.680			0.221		0.230				
Remarks:												
Travel	WX	NAVSEA	0.240			0.087	TBD	0.020	TBD			
SBIR Assessment			0.168			0.057	TBD	0.060	TBD			
Labor (Research Personnel)			0.052			0.000	TBD	0.070	TBD			
Subtotal Management Services			0.460			0.144		0.150				
Remarks:												
Total Cost			4.457			1.412		1.451				

CLASSIFICATION:					UNCLASSIFIED																								
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009									
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION										PROJECT NUMBER AND NAME 0775/Submarine Supt Equip Prog														
Fiscal Year	2008				2009				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	
SSEP F0775 SCHEDULE																													
AN/BLQ-10 Baseline SWFTS and NPES Changes, SPR Resolution and Software Enhancements		S/W Update △				S/W Update △				S/W Update △																			
Specific Emitter ID/Auto Contact Correlation			Spiral 1 △																										
Low Probability of Intercept DF (LPI)		At Sea test △				Spiral 1 △																							
Advanced EW Tuners			Test △			Integrate △						Research △																	
Multifunction Modular Mast (MMM) Payload																													
Processor Upgrade											Research △																		
Remote Maintenance		Integrate △																											
EVS									Research △																				
Capability Insertions						Research △				Research △																			

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 0775/Submarine Supt Equip Prog			
Schedule Profile		FY 2008	FY 2009	FY 2010				
AN/BLQ-10 BASELINE CHANGES, SPR RESOLUTION, AND SOFTWARE ENHANC		2Q	2Q	2Q				
SPECIFIC EMITTER ID/ACC & VIRGINIA DT/OT								
--Test								
--Spiral 1		3Q						
LOW PROBABILITY OF INTERCEPT DF (LPI)								
--Integrate								
--At-Sea Test		2Q						
--Spiral 1			3Q					
ADVANCED EW TUNERS								
--Research				4Q				
--Test		3Q						
--Integrate			1Q					
CAPABILITY INSERTIONS (NRE for Integration)								
--Research								
--PROCESSOR UPGRADE								
--Test								
--Integrate								
--Research				3Q				
REMOTE MAINTENANCE								
--Test								
--Integrate		2Q						
EVS								
--Research				1Q				
--Test								
--Integrate								
--Research								
PULSE DIGITIZER UPGRADE								
Capability Insertions								
--Research			2Q	3Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	15.439	15.922	21.294				
RDT&E Articles Qty	0	0	0				
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 United States (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 leverages the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) design. The project utilizes land-based integration test facilities to integrate C4I Program of Record (POR) components into the open architecture prior to fleet implementation on all submarine platforms. 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 submarines to connect to the Global Information Grid (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. Notes/Comments: 1) FY09 through FY10 funding increase due to Increment 1 Ver 3 and the addition of LOS ANGELES platform development into CSRR. 2) Per Acquisition Decision Memorandum signed by ASN RDA dated 15 July 2008 approval to consolidate Increments 1 and 2 to a single Increment 1 with multiple block upgrades (Versions).							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
BCA OPCON architecture	0.497	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY08: Completed system engineering supporting BCA/OPCON architecture (\$0.497).			
	FY 2008	FY 2009	FY 2010
Common Sub Radio Room/Sub Comms Support System	14.942	15.922	21.294
RDT&E Articles Quantity	0	0	0
FY08: Completed software integration of the CSRR Information Assurance (IA) requirements for Digital Modular Radio (DMR) and other component programs into the Control & Management (C&M) software (\$1.335). Completed systems engineering for DMR 6.4 and Super High Frequency (SHF) integration into the CSRR architecture (\$1.643). Completed system engineering/design development for Submarine Communications Support Systems (SCSS) modernization (\$0.232). Commenced system engineering and development of Multi-Purpose Reconfigurable Training System (MRTS) for maintenance trainers (\$2.101). Continued implementation of security upgrades to meet IA, Information Security (INFOSEC) and multiple levels of certification requirements General Service (GENSER) and Sensitive Compartmented Information (SCI) for all CSRR platforms (\$3.879). Commenced software integration of new technologies for CSRR Increment 1 Ver 2 into the C&M control system (\$2.878). Commenced systems engineering design development testing supporting CSRR modernization Increment 1 Ver 2 (\$2.874).			
FY09: Continue system engineering and development of maintenance trainers Increment 1 Ver 1, and upgrade maintenance operator MRTS to CSRR Increment 1 Ver 2 baseline (\$3.274). Continue implementation of security upgrades to meet IA, INFOSEC and multiple levels of certification requirements for General Service (GENSER) and SCI for all CSRR platforms (\$3.606). Continue systems engineering/design development and to support testing for CSRR Increment 1 Ver 2 for VIRGINIA FLT 1&2, SEAWOLF and complete Ship Submersible Guided Nuclear (SSGN) platforms (\$5.088). Upgrade Control & Management (C&M) software integration of CSRR Increment 1 Ver 2 capabilities (\$3.081). Commence systems engineering development efforts supporting CSRR modernization Increment 1 Ver 3 for LOS ANGELES class submarines (\$0.950).			
FY10: Complete MRTS software upgrade for Increment 1 Ver 1 and Ver 2 CSRR baselines (\$1.105). Commence MRTS software upgrade for Increment 1 Ver 3 (\$1.900). Continue implementation of security upgrades to meet IA, INFOSEC and multiple levels of certification requirements for GENSER and SCI on all CSRR platforms. (\$4.566). Complete systems engineering/design development and testing for CSRR Increment 1 Ver 2 for VIRGINIA FLT 1&2 and SEAWOLF platforms (\$2.045). Continue systems engineering development efforts for CSRR modernization Increment 1 Ver 3 for LOS ANGELES (LA) class submarines (\$1.866). Commence systems engineering development efforts supporting CSRR modernization Increment 1 Ver 3 for SEAWOLF, VIRGINIA and OHIO (SSGN) class submarines (\$3.882). Commence upgrade of C&M software to include Increment 1 Ver 3 capabilities (\$5.521). Conduct Follow on Test and Evaluation (FOT&E), Developmental Testing (DT) and Operation Assessment (OA) efforts on the CSRR platforms (\$0.700).			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS			
C. OTHER PROGRAM FUNDING SUMMARY: Related RDT&E PE 0602232N Space and Electronic Warfare (SEW) Technology PE 0204163N Fleet Communications									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					
31300 Submarine Communications		82.773	79.526	48.729					
D. ACQUISITION STRATEGY: CSRR transforms LOS ANGELES, OHIO and SEAWOLF Class radio rooms from suites of class-specific, closed system equipment to a common design which incorporates Open System Architecture (OSA) communications equipment. CSRR will leverage VIRGINIA Class Exterior Communication System (ECS) design, utilize VIRGINIA Class ECS Control and Management (C&M) 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: Increment 1 CSRR - FRP 4Q FY07, T&E Milestones: Completed CSRR SSBN TECHEVAL 2Q FY07, CSRR SSBN OPEVAL 2Q FY07, CSRR SSGN TECHEVAL 1Q FY07, CSRR SSGN OPEVAL 3Q FY07. All FY07 testing reported operationally suitable and operationally effective. Increment 1 Ver 2 FOT&E DT scheduled 2Q FY10, OT 3Q on SSGN platform.									
E. MAJOR PERFORMERS: Naval Undersea Warfare Center, Division Newport, RI - Technical Design Agent & System Integration Lockheed Martin/Maritime Sensors & Systems, Eagan, MN - Software Development									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION					PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Hardware Development	CPFF	SSC-SD/NUWC Newport, RI	2.776			0.000		0.000				
Hardware Development*	CPFF	SSCs/NUWC Newport, RI	0.211			0.000		0.000				
MCS Development	Various	Motorola, misc labs	10.214			0.000		0.000				
H/W Development Facilities	Various	NUWC Newport, RI	0.000			0.000		0.000				
Software Development	CPFF/WX	SSC-SD San Diego, CA	2.068			0.000		0.000				
Software Development	WX	NUWC Newport, RI	5.498			0.000		0.000				
MRTS Development	CPFF	NAVAIR, Orlando	5.592			3.274	JAN-09	3.005	JAN-10			
Systems Engineering	Various	Misc Labs	21.262			4.087	JAN-09	4.669	DEC-09			
Systems Eng/Design 688 Class	Various	Misc Labs	3.606			0.950	JAN-09	1.866	DEC-09			
Site Platform Integration/Certification	Various	NUWC Newport, RI	10.762			0.323	JAN-09	0.598	DEC-09			
BCA/OPCON architecture	WX	NUWC Newport, RI	3.683			0.000		0.000				
Subtotal Product Development			65.672			8.634		10.138				
Remarks: * CSRR Development for OHIO Class submarines												
Software Development (CSRR)	CPAF	Lockheed Martin Tech Sys	19.120			2.493	JAN-09	4.964	JAN-10			
Integrated Logistics Support	WR	NUWC Newport, RI	1.828			0.253	DEC-08	0.488	DEC-09			
Software Engineering	WR	SSC-SD San Diego, CA	1.153			0.588	DEC-08	0.605	DEC-09			
INFOSEC/IA Certification	Various	Various	6.854			3.206	DEC-08	3.629	DEC-09			
Subtotal Support Costs			28.955			6.540		9.686				
Remarks:												
Developmental/Operational T&E	Various	Various	8.583			0.000	DEC-08	0.700	DEC-09			
Subtotal Test and Evaluation			8.583			0.000		0.700				
Remarks:												
Program Management Support	Various	Various	7.843			0.748	DEC-08	0.770	DEC-09			
Subtotal Management Services			7.843			0.748		0.770				
Total Cost			111.053			15.922		21.294				
Remarks:												

CLASSIFICATION:				UNCLASSIFIED																				
EXHIBIT R-4, SCHEDULE PROFILE																DATE May 2009								
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5								PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION								PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS								
Fiscal Year	2008				2009				2010															
	1	2	3	4	1	2	3	4	1	2	3	4												
Acquisition Milestones	Gate 6 Review ▲								Inc1V2 Fielding Decision * △															
Technical Reviews	SSGN I1V2 CDR ● SW I1V2 PDR ●				SSBN I1V1 VCD ● I1V3 PDR ○ SW I1V2 CDR ○				I1V3 CDR ○															
Contracts	Contract Award																							
Software/Lockheed Martin	▲																							
System Development	Inc 1 v1 Development Phase				Certification Testing																			
Technology Demonstration	Inc 1 v2 Development Phase																							
Engineering Dev. Model					Inc 1 v3 Development Phase																			
Test & Evaluation									CSRR Inc1V2 FOT&E															
Development Test									Inc1V2 DT △ JTC Cert															
Operational Test									Inc1V2 OT △															
Production (Increment 1)																								
LRIP																								
LRIP Deliveries	4 ▲ FRP (1)				1 ▲ FRP (1)																			
FRP Award					2 ▲				4 ▲				△ 1											
FRP Deliveries																								
Procurement Inc 1 mod kits	15 ▲				11 ▲				9 △															
Installation Inc 1 mod kits	14 ▲				21 ▲				9 △															

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION			PROJECT NUMBER AND NAME 1411/SUBM TACT COMM SYS		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Gate 6 Review		3Q					
Fielding Decision (Increment 1 V2)				4Q			
Fielding Decision (Increment 1 V3)							
Fielding Decision (Increment 1 V4)							
Technology Demonstration (Increment 1 V1)		1-3Q					
Technology Demonstration (Increment 1 V2)		1-4Q	1-4Q				
Technology Demonstration (Increment 1 V3)			3-4Q	1-4Q			
Technology Demonstration (Increment 1 V4)							
DT (Increment 1 V2)				2Q			
OT (Increment 1 V2)				3Q			
DT (Increment 1 V3)							
OT (Increment 1 V2)							
DT (Increment 1 V4)							
OT (Increment 1 V2)							

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604503N/SSN-688 AND TRIDENT MODERNIZATION		PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
	FY 2008	FY 2009	FY 2010	
9840A/ Improved Submarine Towed Array Handler and Reliability	3.085	0.000	0.000	
RDT&E Articles Quantity	0	0	0	
Improved Submarine Towed Array Reliability 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 2008	FY 2009	FY 2010	
9C14A/ Advanced Intercept and Ranging System (AIRS)	3.085	0.000	0.000	
RDT&E Articles Quantity	0	0	0	
The Active intercept and Ranging System will test a laboratory theory at sea for an active intercept and ranging system that uses GPS and cellular phone localization algorithms on a submarine. Should the test prove successful and should additional funds become available then the algorithms will be integrated into the sonar systems aboard US Navy submarines.				

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604504N, AIR CONTROL			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	4.348	8.063	6.533					
0718 MARINE AIR TRAFFIC (MATCALs)	1.429	2.224	0.510					
0993 CARRIER ATC	2.919	5.394	5.580					
1657 ATC IMPROVEMENT		0.445	0.443					
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 (NASs) and Marine Corps Air Stations (MCASs) and Fleet Area Control and Surveillance Facilities (FACSFAC) worldwide. Funded programs are required to upgrade or replace aging ATC and landing system equipment on aircraft, aircraft carriers, amphibious ships, NASs, MCASs and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites.								

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604504N, AIR CONTROL

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	4.072	8.191	6.594
President's Budget FY 10:	4.348	8.063	6.533
Total Adjustments	0.276	-0.128	-0.061

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments		-0.106	
SBIR/STTR/FTT Assessments	0.010		
Program Adjustments	0.266		-0.056
Rate/Misc Adjustments		-0.022	-0.005
Subtotal	0.276	-0.128	-0.061

Schedule:

Project Unit 0718: The MATCALs Air Surveillance and Precision Approach Radar Control System (ASPARCS) Production Contract Award and Delivery milestones have been modified to reflect the most current program schedule. The MATCALs ATC Command and Control System (C2S) schedule has been extended out to FY 2012 due to a budget reduction in FY 2008 and to better align with the C2S program.

Project Unit 0993: From PB09 the AN/TPX-42 ATC Common Console Field Change 3 development effort was extended three months to accommodate integration and environmental testing issues. The Test Readiness Review (TRR), Operational Assessment (OA) and Production milestones have been modified to reflect the most current program schedule. The AN/TPX-42B ATC Common Console extended the System Development phase from 4Q FY10 to 3Q FY12 and also added a Pre-planned Product Improvement effort beginning 3Q FY12.

Technical: Not Applicable

R-1 SHOPPING LIST - Item No. 107

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EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 0718, MARINE AIR TRAFFIC (MATCAL)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
	1.429	2.224	0.510					
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 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 (HMMWV) 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 December 2004. P3I includes the design and development of software code to interface Command and Control System (C2S) input/output to existing software, incorporating Radar Range Extension and Mapping functionality, enhanced simulation and training and providing increased operator workstations.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 0718, MARINE AIR TRAFFIC (MATCAL)																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">ASPARCS Improvements</td><td style="width: 10%;">FY 08</td><td style="width: 10%;">FY 09</td><td style="width: 10%;">FY 10</td><td style="width: 10%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>0.921</td><td>0.639</td><td>0.510</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					ASPARCS Improvements	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.921	0.639	0.510		RDT&E Articles Quantity				
ASPARCS Improvements	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.921	0.639	0.510																
RDT&E Articles Quantity																			
Investigate and resolve obsolescence issues. Perform studies and analyses to implement P3I and other evolutionary improvements. Develop criteria for existing ASPARCS software to achieve Defense Information Infrastructure-Common Operating Environment Level 5 compliance, Information Assurance, Radar Range Extension and Mapping functionality, and enhanced simulation and training into the existing ASPARCS software. Perform studies and analyses.																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">ATC Interface with C2S</td><td style="width: 10%;">FY 08</td><td style="width: 10%;">FY 09</td><td style="width: 10%;">FY 10</td><td style="width: 10%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>0.508</td><td>1.585</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					ATC Interface with C2S	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.508	1.585			RDT&E Articles Quantity				
ATC Interface with C2S	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.508	1.585																	
RDT&E Articles Quantity																			
Develop the ATC interface increment for the Command and Control System (C2S) , which will allow the ATC detachment to exchange radar track data with the Marine Air Command and Control Squadron and joint agencies.																			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604504N, AIR CONTROL	0718, MARINE AIR TRAFFIC (MATCAL)	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
OPN BLI 2815 Marine Air Traffic Control and Landing Systems (MATCAL) P-1#56	44.594	76.601	17.868

D. ACQUISITION STRATEGY:

ASPARCS is an ACAT IVT program. Lockheed Martin was awarded the contract for this effort in June 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 in Jan 2005 approving the procurement of the Army AN/TPN-31 System to fulfill the ASPARCS requirement for July 2006. The Marine Corps Requirements Oversight Council (MROC) Decision Memorandum 11-2005 of December 2004 outlined the evolutionary improvements envisioned by Headquarters Marine Corps (HQMC). This program has joined with the Army to implement Pre-Planned Product Improvement (P3I) and evolutionary product improvements.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 0993, CARRIER ATC			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	2.919	5.394	5.580					
RDT&E Articles Qty								

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. Dual efforts are underway to improve the AN/SPN-46 system availability and supportability until at least September 2020. These efforts include various Engineering Change Proposals (ECPs), 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 three 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, integrating and interface with Mode 5 IFF, 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 Computer Group, a test article is required to perform a series of tests beginning December 2007 and completing in September 2009. 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 4th quarter FY2008. The test article is best 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 (JPALS).

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 0993, CARRIER ATC																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;">SPN-46 COMPUTER GROUP</th><th style="width: 15%;">FY 08</th><th style="width: 15%;">FY 09</th><th style="width: 15%;">FY 10</th><th style="width: 25%;"></th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">2.919</td><td style="text-align: center;">4.520</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>					SPN-46 COMPUTER GROUP	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	2.919	4.520			RDT&E Articles Quantity				
SPN-46 COMPUTER GROUP	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	2.919	4.520																	
RDT&E Articles Quantity																			
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 from December 2007 to September 2009. 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").																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;">AN/TPX-42 Improvements</th><th style="width: 15%;">FY 08</th><th style="width: 15%;">FY 09</th><th style="width: 15%;">FY 10</th><th style="width: 25%;"></th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">0.874</td><td style="text-align: center;">5.580</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>					AN/TPX-42 Improvements	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		0.874	5.580		RDT&E Articles Quantity				
AN/TPX-42 Improvements	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		0.874	5.580																
RDT&E Articles Quantity																			
Complete development of a Field Change 3 configuration to integrate Mode 5 capability, 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 'E', 'F' and 'G' Kits. Begin development of the final Air Traffic Control Console configuration in FY08 to include JPALS interface and replacement of SPN-35 Operator displays. 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 'H' Kits.																			

R-1 SHOPPING LIST - Item No. 107

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5		0604504N, AIR CONTROL	0993, CARRIER ATC	
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
OPN BLI 2831 Shipboard Air Traffic Control P-1#57	7.667	7.921	7.970	
OPN BLI 2832 Automatic Carrier Landing Systems P-1#5E	18.279	16.239	18.878	
D. ACQUISITION STRATEGY:				
AN/SPN-46 Computer Group replacement subprojects are part of the AN/SPN-46 Life Cycle Extension (LCE) project, which is an Engineering Change Proposal (ECP). Initial contract was awarded in November 2003 for the Radar Control Group, and the contract for the Computer Group was awarded in December 2005. AN/TPX-42 Common Console is an anticipated Engineer Change Proposal (ECP), 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.				

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604504N AIR CONTROL			0993 CARRIER ATC							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary HDW Develop- SPN-46	WX	NAWCAD, PAX River, MD	11.548										
Primary HDW Develop- SPN-46	SS-CPIF	SNC, Sierra, NV	6.356										
Primary HDW Develop- TPX-42	WX	NAWCAD, St Inigoes, MD	2.623										
Subtotal Product Development			20.527										
Remarks:													
Software Development-SPN-46	WX	NAWCAD, PAX River, MD	6.554	0.384	12/08								
Software Development-SPN-46	WX	NAWCAD, PAX River, MD	3.119	3.063	12/08								
Software Development-TPX-42	WX	NAWCAD, PAX River, MD	2.929	0.874	12/08								
Integrated Logistics Support-TPX-42	WX	NAWCAD, PAX River, MD	0.632			4.800	12/09						
Studies & Analyses-SPN-46	WX	NAWCAD, PAX River, MD	0.273			0.231	12/09						
Subtotal Support			13.507	4.321		5.031							
Remarks:													

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604504N AIR CONTROL			0993 CARRIER ATC						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Develop Test & Evaluation-SPN-46	WX	NAWCAD, PAX River, MD	0.626	1.019	12/09							
Develop Test & Evaluation-TPX-42	WX	NAWCAD, PAX River, MD	0.748			0.143	12/09					
Operational Test & Evaluation-TPX-4	WX	OPTEVOR, Norfolk, VA	0.062									
Subtotal T&E			1.436	1.019		0.143						
Remarks:												
Program Management Support	C-CPFF	TBD, Pax River, MD	1.420	0.039	12/09	0.406	12/09					
Travel	TO	NAVAIRHQ, Pax River, MD	0.090	0.015	11/09							
Subtotal Management			1.510	0.054		0.406						
Remarks:												
Total Cost			36.980	5.394		5.580						
Remarks:												

EXHIBIT R-3
RDT&E PROJECT COST ANALYSISUNCLASSIFIED
R-1 Line Item No. 107

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:	May 2009
AN/TPX-42B Air Traffic Control Common Console													
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME	
RDT&E, N / BA-5						0604504N, AIR CONTROL						0993, CARRIER ATC	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
System Requirements Review of AN/TPX-42B													
Preliminary Design Review													
System Development													
Pre-Planned Product Improvements													
Critical Design Review													
Quality Design and Build													
EDM Radar Delivery (Qty 1)													
Test Readiness Review													
Test & Evaluation Milestones													
Development Test													
Operational Test													
Production Milestones													
Full Rate Production (FRP)													
Production Deliveries													

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail AN/TPX-42B Air Traffic Control Common Console						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 0993, CARRIER ATC			
Schedule Profile	FY 2008	FY 2009	FY 2010					
System Requirement Review (SRR)		1Q-4Q						
Preliminary Design Review (PDR)			1Q					
System Development			1Q-4Q					
Pre-Planned Product Improvement								
Critical Design Review (CDR)			4Q					
Quality Design and Build			4Q					

R-1 SHOPPING LIST - Item No. 107

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 1657, ATC IMPROVEMENT			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
		0.445	0.443					
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 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 Air Traffic Control Systems. These systems are critical to Naval Aviation and provide for safe, efficient air operations. Additionally, the Federal Aviation Administration (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 in Project 1657 include the Visual Information Display System (VIDS) and follow-on Preplanned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf (COTS) ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & Fleet Area Control & Surveillance Facilities (FACSFACs) 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.								

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 1657, ATC IMPROVEMENT																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">NAS MOD VIDS</td><td style="width: 15%;">FY 08</td><td style="width: 15%;">FY 09</td><td style="width: 15%;">FY 10</td><td style="width: 25%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.419</td><td>0.421</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					NAS MOD VIDS	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		0.419	0.421		RDT&E Articles Quantity				
NAS MOD VIDS	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		0.419	0.421																
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">FLEET ATC SYSTEMS</td><td style="width: 15%;">FY 08</td><td style="width: 15%;">FY 09</td><td style="width: 15%;">FY 10</td><td style="width: 25%;"></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.026</td><td>0.022</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					FLEET ATC SYSTEMS	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		0.026	0.022		RDT&E Articles Quantity				
FLEET ATC SYSTEMS	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		0.026	0.022																
RDT&E Articles Quantity																			

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604504N, AIR CONTROL	1657, ATC IMPROVEMENT		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
OPN BLI 2840 National Air Space System P-1#59	25.236	28.980	28.988	
OPN BLI 2845 Fleet Air Traffic Control Systems P-1# 60	12.832	8.214	8.203	
D. ACQUISITION STRATEGY:				
All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent requirements or address supportability and cost of ownership problems.				

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	37.495	45.301	80.623					
2232 - CV Launch & Recovery System	37.495	42.509	80.623					
9999 - Congressional Adds		2.792						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 2232 - CV Launch & Recovery System - 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:

(1). Advanced Arresting Gear (AAG): AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability. AAG will provide the U.S. Navy with important new operational advances for safety and efficiently recover all existing and projected carrier based tailhook-equipped air vehicles well into the 21st century.

(2). Aviation Data Management and Control System (ADMACS): ADMACS will use state-of-the-art information technology and decision support systems to automate collection and distribution of information , enabling aviation operations on board aircraft carriers to be accomplished in a more efficient manner.

(a). ADMACS Block 2: Is a shipboard aviation information management system providing CVN aviation planning, execution & readiness assessment using integrated decision aids and supporting systems built into a highly adaptive Net-Centric comprehensive system for sea & land. ADMACS Block 2 provides real time, fault tolerant (redundant), tactical information management system.

(b). ADMACS Block 3: This is new start for FY 2010. ADMACS Block 3 begins to automate data input through various system interfaces. It also adds intelligent agent and decision aides. These are added to the Block 2 architecture established during the development and installation.

(3). Technology insertion for the Electromagnetic Aircraft Launch System (EMALS):

(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.

(4). Swaging Machine: This program funded by ONR (OSD PE# 060051D8Z) in FY 2009. The High-Density Swaging Machine replaces the current process for attaching the terminal on the arresting gear purchase cable and will produce 2200 Tons of pressing force in a compact, lightweight package. The current process for attaching the terminal on the arresting gear purchase cable is very workload intensive and hazardous. The High-Density Swaging Machine would enable sailors to attach arresting cable terminal safely and decrease the potential for cable failure.

R-1 SHOPPING LIST - Item No. **108**

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems
BA-5		
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (5). Aircraft Launch & Recovery Equipment (ALRE) Modernization: This is new start for FY 2010. Enhance ADMACS horizontal integration with Improved Fresnel Lens Optical Landing System (IFLOLS), Improved Manually Operated Visual Landing Aid System (IMOVLAS), Embarked Aircraft Track System (EATS) and other shipboard systems to improve carrier aviation operations through a network-centric environment able to transform and deliver critical data directly to the warfighter as actionable knowledge. The combination of the following improvements will enable ADMACS to serve as an overarching Horizontal Integrator, creating an Aircraft Launch & Recovery System "system-of systems" that enables the warfighter to execute missions more efficiently and effectively. (a). Improved Fresnel Lens Optical Landing System (IFLOLS) Phase 4: Control system processor and digital interfaces upgrades to support Built-In-Test (BIT), ADMACS integration & maintenance /obsolescence reduction. Development is required to introduce integration with IFLOLS Phase 4 Control System Processor, digital interfaces, and to support IFLOLS built in test (BIT) maintenance concepts. (b). Embarked Aircraft Track System (EATS): Automate and improve aircraft on -deck tracking throughout flight and transitions. EATS integration will improve aircraft tracking and situational awareness. (c). Improved Manually Operated Visual Landing Aid System (IMOVLAS): This will be the manual backup for IFLOLS which is the primary carrier Visual Landing Aid (VLA). Used in high sea states or if IFLOLS is inoperable and will mirror current IFLOLS configuration 100% in size & display, light source, transmission performance & reliability. (d). ALRE MK-7 System: This effort involves the re-design of the two (2) components below for the MK-7 Arresting Gear system that were identified as major maintenance intensive components by the TYCOM: 1. Replacement of 7 of 10 Retractable Sheaves on the flight deck with a fixed deck sheave design and 2. Design of a new sheave with a sealed bearing which would eliminate the requirements to periodically lubricate the bearings. 9D80A - Sensorless Control of Linear Motors in EMALS - The Navy will initiate the development of advanced sensorless control capability for the Electromagnetic Aircraft Launch System (EMALS) program.		

R-1 SHOPPING LIST - Item No. 108

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:	27.499	42.843	62.670
FY 10 President's Budget	37.495	45.301	80.623
Total Adjustments	9.996	2.458	17.953

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		2.582	
SBIR/STTR/FTT Assessments	-0.004		
Program Adjustments	10.000		17.971
Rate/Misc Adjustments		-0.124	-0.018
Subtotal	9.996	2.458	17.953

Schedule:

2232: AAG - The AAG Critical Design Review (CDR) was successfully completed in April 2007, five months later than the originally scheduled date of Nov 2006, because of contractor difficulty in establishing the product baseline which included delays in utilizing the design for system hardware and software, and clearing the backlog of technical documentation required for CDR. Additionally the contractor did not complete production drawings until March 2008. AAG's funding changes across FYDP since PB-09 reflect the net result of the program cost growth and removal of the Operational Evaluation (OPEVAL) ship set. AAG cannot be installed during a Docking Planned Incremental Availability (DPIA) installation as planned in PB-09 for initial (OPEVAL) shipset. Retrofits must be completed during a Refueling Complex Overhaul (RCOH) availability. In order to live within the FY08 & 09 budgets, the schedule was slipped two years in order to POM for the cost growth. Combined with an increase in production lead time in the manufacturing of test unit hardware and software which will continue through FY 2009 which forced Integrated Testing into FY 2010 through FY 2012. Completed Integrated Baseline Review (IBR), Schedule Risks Assessment (SRA), and revised Estimate At Completion (EAC) in Oct 2008. Updated Acquisition Program Baseline (APB) is in routing.

2232: ADMACS Block 2: ADMACS Block 2 procurement and subsequent installation of the first Low Rate Initial Procurement (LRIP) ship, the CVN-72 in FY09.

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009	
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 2008	FY 2009	FY 2010				
Project Cost	37.495	42.509	80.623				
RDT&E Articles Qty			2				

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 under Project 2232, including the funding of production representative models (PRM) for:

(1). Advanced Arresting Gear (AAG): AAG replaces the MK-7 arresting gear, which has reached the limits of its operating capability. The test articles consist of single land based arresting gear wire with all associated hardware and system components to use for reliability and environment qualification testing. FY09 quantity one (1) for RDT&E article was removed. AAG cannot be retrofit during docking planned incremental (DPIA) carrier availability due to length of time to install. Will only be retrofit on Nimitz class carriers during Refueling Complex Overhaul (RCOH) availabilities (will be funded by Shipbuilding and Conversion, Navy (SCN)).

(2). Aviation Data Management and Control System (ADMACS): ADMACS will use state-of-the-art information technology and decision support systems to automate collection and distribution of information, enabling aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner.

(a). ADMACS Block 2: Is a shipboard aviation information management system providing CVN aviation planning, execution & readiness assessment using integrated decision aids and supporting systems built into a highly adaptive Net-Centric comprehensive system for sea & land. ADMACS Block 2 provides real time, fault tolerant (redundant), tactical information management system.

(b). ADMACS Block 3: This is new start for FY 2010. ADMACS Block 3 begins to automate data input through various system interfaces. It also adds intelligent agent and decision aides. These are added to the Block 2 architecture established during that development and installation.

(3). Technology Insertion Effort for the Electromagnetic Aircraft Launch System (EMALS):

(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.

(4). Swaging Machine: This program funded by ONR (OSD PE# 060051D8Z) in FY 2009. Replaces the current process for attaching the terminal on the arresting gear purchase cable and will produce 2200 Tons of pressing force in a compact, lightweight package. The current process for attaching the terminal on the arresting gear purchase cable is very workload intensive and hazardous. The High-Density Swaging Machine would enable sailors to attach arresting cable terminal safely and decrease the potential for cable failure.

(5). Aircraft Launch & Recovery Equipment (ALRE) Modernization: This is new start for FY 2010. This will enable ADMACS to serve as an overarching Horizontal Integrator, creating an Aircraft Launch & Recovery System "system-of systems" that enables the warfighter to execute missions more efficiently and effectively.

(a). Improved Fresnel Lens Optical Landing System (IFLOLS) Phase 4: Control system processor and digital interfaces upgrades to support Built-In-Test (BIT), ADMACS integration & maintenance /obsolescence reduction.

(b). Embarked Aircraft Track System (EATS): Automate and improve aircraft on -deck tracking throughout flight and transitions.

(c). Improved Manually Operated Visual Landing Aid System (IMOVLAS): This will be the manual backup for IFLOLS which is the primary carrier Visual Landing Aid (VLA). Used in high sea states or if IFLOLS is inoperable and will mirror current IFLOLS configuration 100% in size & display, light source, transmission performance & reliability.

(d). ALRE MK-7 System: This effort involves the re-design of two (2) components for the MK-7 Arresting Gear system that were identified as major maintenance intensive components by the TYCOM.

(1). Replace 7 of 10 Retractable Sheaves on the flight deck with a fixed deck sheave design. (2). Design a new sheave with a sealed bearing which would eliminate the requirements to periodically lubricate the bearings.

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	May 2009

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

B. Accomplishments/Planned Program

AAG	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	35.770	41.129	66.604	
RDT&E Articles Quantity				

Close out Critical Design Review. Purchase one (1) AAG production representative test system to support shorebased integrated testing. Fabricate test systems hardware. Complete test site upgrades. Deliver test system to the NAVAIR Lakehurst Jet Car Test Site. Install test system. Conduct Test Readiness Review. Conduct IT-B1, IT-B2, IT-B3, IT-B5 integrated testing, and initiates IT-B4. Provide engineering and management support to the program. Prepare Runway Arrested Landing Site (RALS). FY09 quantity one (1) for RDT&E article was removed. AAG cannot be retrofit during docking planned incremental (DPIA) carrier availability due to length of time to install. Will only be retrofit on Nimitz class carriers during Refueling Complex Overhaul (RCOH) availabilities (will be funded by Shipbuilding and Conversion, Navy (SCN)).

ADMACS Block 2	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.725	1.380	0.000	
RDT&E Articles Quantity				

Purchase an 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. Integrate the test Block 2 software and hardware.

ADMACS Block 2 was funded under Project 9071 (Congressional Add) and Project 3126 (ONR) in FY 2002-2005

ADMACS Block 3	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.513	
RDT&E Articles Quantity				

ADMACS Block 3 begins to automate data input through various system interfaces. It also adds intelligent agent and decision aides. These are added to the Block 2 architecture established during the development and installation. Build one (1) Engineering Developmental Model (EDM) for developmental test (software).

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
			May 2009
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	

B. Accomplishments/Planned Program (Cont.)

TECHNOLOGY INSERTION FOR EMALS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.056	
RDT&E Articles Quantity				

Re-Code EMALS Advanced Control algorithm into Capability Maturity Model (CMM) Level 3 coding. Design new production board populated with new chips and manufacture new production board. Install new production board into Circuit Card Assembly (CCA) in motor controller. Conduct development testing of CCA. Install CCA at SDD land based site. Conduct SDD site testing. Continue to develop process to produce a large quantity of the Nano Particle Barium Titanate Impregnated Dielectric to be tested and manufactured into capacitors for EMALS. Re-design power train system for integration into ship-set design. Manufacture, install, and test the capacitors. Conduct high cycle, life, environmental qualification and system integration testing. Provide development, management, system engineering, test and ship integration support. Conduct sensor prototype testing and algorithm development.

SWAGING MACHINE	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.400	
RDT&E Articles Quantity			1	

This program will replace the current process for attaching the terminal on the arresting gear purchase cable and will produce 2200 tons of pressing force in a compact, lightweight package. Conduct performance test on prototype 1 which will have been developed under Defense Acquisition Challenge Program funding (OSD PE 0604051D8Z). Conduct Electro-Magnetic Interference (EMI) shock/environmental test. Develop prototype #2, which will be optimized for manufacturability, maintainability and production cost. Prepare for MS C. This program will be funded by ONR (OSD PE# 060051D8Z) in FY 2009.

ALRE MODERNIZATION	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.050	
RDT&E Articles Quantity			1	

Enhance ADMACS horizontal integration with IFLOLS, IMOVLAS, EATS and other shipboard systems to improve carrier aviation operations through a network-centric environment able to transform and deliver critical data directly to the warfighter as actionable knowledge. These improvements will enable ADMACS to serve as an overarching Horizontal Integrator, creating an Aircraft Launch & Recovery System "system-of systems" that enables the warfighter to execute missions more efficiently and effectively.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
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

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
OPN Line Item: P-1 # 94	38.600	46.225	48.670
Aircraft Launch and Recovery Equipment, OPN BLI 4216			

D. ACQUISITION STRATEGY:

AAG: The Navy competitively awarded two Cost Plus Fixed Fee Technical Development 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 option to General Atomics for the System Development and Demonstration phase to develop and demonstrate a production representative AAG at the NAVAIR Lakehurst Jet Car and Runway Aircraft Landing test sites. After successful demonstration of the production representative AAG, the Navy will award Fixed Price Incentive 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 system will be procured from multiple sources, and integrated and deployed by NAWCAD Lakehurst, N.J. or possibly by a system integrator contractor.

Technology Insertion for the Electromagnetic Aircraft Launch System (EMALS):

EMALS Advanced Energy Storage: The Navy will develop an advanced capability of energy storage for the EMALS program. Capacitor material will be developed and tested by SBIR phase 3 contractor. After a successful demonstration of the advanced material's capability, the Navy will award a CPFF type contract to develop and test advanced energy storage as it specifically relates to the EMALS system. Components will be installed at the EMALS test site and tested for performance and system integration. After a successful development and test program, the Navy will award a FFP for production quantities. This is to further the development and insertion of the high density storage devices into EMALS. Recent developments in energy storage technologies will allow significant weight reductions for EMALS, creating additional service life margin for the CVN-21 Class Ships. Additional improvements in reliability, maintainability, availability and efficiency will improve CVN-21 operational capabilities.

EMALS Advanced Control: The Navy will develop an advanced control capability for the EMALS program. An SBIR contractor will complete development and test of advanced control algorithms. The Navy will award a CPFF contract to design and test a new controller board. EMALS test site will be used to demonstrate performance and system integration. After a successful development and test program, the Navy will award a FFP for production quantities.

Swaging Machine: The Navy will amend an existing Small Business Technology Transfer (STTR) Phase III contract in order to test Prototype #1, which will have been developed under Defense Acquisition Challenge Program funding (OSD PE 060051D8Z), and develop Prototype # 2, which will be optimized for manufacturability, maintainability and production cost.

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Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604512N Shipboard Aviation Systems			2232 - CV Launch & Recovery Systems					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Primary H/W Development (AAG)	C/CPFF	Northrop Grum/Sunnyvale, CA	12.418								
Primary H/W Development (AAG)	C/CPAF	Gen Atomics/San Diego, CA	91.102	27.545	12/08	39.130	12/09				
H/W Fabrication/Install Initial Shipset (AAG)	SS/TBD	Gen Atomics/San Diego, CA									
Award Fees (AAG)	C/CPAF	Gen Atomics/San Diego, CA	1.548	0.175	12/08	3.400	12/09				
Primary H/W Development (AAG)	WX	NAWCAD, Lakehurst NJ	4.236	2.177	11/08	5.028	11/09				
Systems Engineering (AAG)	WX	NAWCAD, Lakehurst NJ	8.017	3.400	11/08	5.350	11/09				
Shipboard Integration (AAG)	WX	NAWCAD, Lakehurst NJ	1.194	3.659	11/08	5.350	11/09				
Primary H/W Development (ADMACS)	Var	NAWCAD, Lakehurst NJ	3.445	0.500	11/08	3.513	11/09				
Shipboard Integration (ADMACS)	WX	NAWCAD, Lakehurst NJ	1.200	0.665	11/08						
System Engineering (ADMACS)	WX	NAWCAD, Lakehurst NJ	0.140			1.000	11/09				
Primary H/W Development (Tech Insert- EMALS)	CPFF	TBD				1.500	12/09				
Primary H/W Development - (Tech Insert- Adv CAT Cntrl)	Var	NAWCAD, Lakehurst NJ				0.866	11/09				
Primary S/W Development - (Tech Insert-Adv CAT Cntrl)	Var	NAWCAD, Lakehurst NJ				0.500	11/09				
System Engineering (Tech Insert-EMALS)	WX	NAWCAD, Lakehurst NJ				0.187	11/09				
System Engineering (Tech Insert-Adv CAT Cntrl)	WX	NAWCAD, Lakehurst NJ				0.453	11/09				
Shipboard Integration (Tech Insert-Adv CAT Cntrl)	WX	NAWCAD, Lakehurst NJ				0.100	11/09				
H/W Fabr/Install Initial Shipset (Tech Insert-Adv CAT Cntrl)	Var	NAWCAD, Lakehurst NJ				0.100	11/09				
Primary H/W Development (Swaging Machine)	SS/Ccst	Creare Inc/Hanover, NH				0.500	01/10				
Shipboard Integration (Swaging Machine)	SS/Ccst	Creare Inc/Hanover, NH				0.200	01/10				
System Engineering (Swaging Machine)	WX	NAWCAD, Lakehurst NJ				0.347	11/09				
Development Support (Swaging Machine)	WX	NAWCAD, Lakehurst NJ				0.300	11/09				
Primary H/W Development (ALRE Modern - IFLOLS)	WX	NAWCAD, Lakehurst NJ				0.250	11/09				
System Engineering (ALRE Modern - IFLOLS)	WX	NAWCAD, Lakehurst NJ				1.150	11/09				
Primary H/W Development (ALRE Modern - EATS)	CPFF	Develosoft Corp				0.800	01/10				
System Engineering (ALRE Mod - EATS)	WX	NAWCAD, Lakehurst NJ				0.400	11/09				
Primary Hardware Development (ALRE Modern - MK7)	WX	NAWCAD, Lakehurst NJ				0.800	11/09				
System Engineering (ALRE Modern - MK7)	WX	NAWCAD, Lakehurst NJ				0.100	11/09				
Subtotal Product Development			123.300	38.121		71.324					
Remarks: . Award fee is 0% fixed and 12% (max) of total contract.											
Integrated Logistics Support (AAG)	WX	NAWCAD, Lakehurst NJ	3.249	1.449	11/08	2.179	11/09				
Integrated Logistics Support (ADMACS)	WX	NAWCAD, Lakehurst NJ	0.150								
Integrated Logistics Supt (Tech Insert-EMALS)	WX	NAWCAD, Lakehurst NJ				0.050	11/09				
Integrated Logistics Supt (Tech Insert-Adv CAT Cntrl)	WX	NAWCAD, Lakehurst NJ				0.200	11/09				
Integrated Logistics Support (Swaging Machine)	WX	NAWCAD, Lakehurst NJ				0.053	11/09				
Integrated Logistics Supt (ALRE Modern IFLOLS)	WX	NAWCAD, Lakehurst NJ				0.050	11/09				
Integrated Logistics Supt (ALRE Modern EATS)	WX	NAWCAD, Lakehurst NJ				0.200	11/09				
Integrated Logistics Supt (ALRE Modern MK7)	WX	NAWCAD, Lakehurst NJ				0.050	11/09				
Subtotal Support			3.399	1.449		2.782					
Remarks:											

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604512N Shipboard Aviation Systems				2232 - CV Launch & Recovery Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Dev Test & Eval (AAG)	WX	NAWCAD Lakehurst, NJ	3.527	0.842	11/08	1.308	11/09						
Operational Test & Evaluation (AAG)	Var	Various	0.680	0.150	Var.								
Facility Testing - JCTS (AAG)	WX	NAWCAD Lakehurst, NJ	2.799	1.518	11/08	4.642	11/09						
Dev Test Lab (ADMACS)	WX	NAWCAD Lakehurst, NJ	0.450										
Integrated Testing (ADMACS)	WX	NAWCAD Lakehurst, NJ		0.215	11/08								
Dev Test & Eval (Tech Insert-EMALS)	WX	NAWCAD Lakehurst, NJ											
Dev Test & Eval (Tech Insert-Adv CAT Cntrl)	WX	NAWCAD Lakehurst, NJ				0.100	11/09						
Dev Test & Eval (ALRE Modern-IFLOLS)	WX	NAWCAD, Lakehurst NJ				0.250	11/09						
Dev Test & Eval (ALRE Modern-MK7)	WX	NAWCAD, Lakehurst NJ											
Subtotal T&E			7.456	2.725		6.300							
Remarks:													
Program Management Support	CPFF	TBD	0.416	0.154	11/08	0.157	11/09						
Travel	TO	NAVAIR Patuxent River, MD	0.552	0.060	Var	0.060	Var						
Subtotal Management			0.968	0.214		0.217							
Remarks:													
Total Cost			135.123	42.509		80.623							
Remarks:													

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EXHIBIT R4, Schedule Profile												DATE: May 2009													
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									
Fiscal Year	2008				2009				2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
Acquisition Milestones																									
Acquisition Phase	System Development & Demonstration																								
System Development & Test & Evaluation Milestones	Test EquipmentManufacturing								△ TRR																
														JCTS Test											

*Completed Integrated Baseline Review (IBR), Schedule Risks Assessment (SRA) and revised Estimate at Completion (EAC) in Oct 2008. Above is the current schedule for AAG program.

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Exhibit R-2, RD TEN Budget Item Justification Sheet

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EXHIBIT R4, Schedule Profile												ADMACS BLOCK 2				DATE: May 2009							
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							
Fiscal Year	2008				2009				2010														
	1	2	3	4	1	2	3	4	1	2	3	4											
Milestones/Phase	SDD				LRIP				Full Rate Production														
							△ MS C					△ FRPDR											
Program Events	△ CDR	△ TRR	△ TRR																				
Procurement/Integration/Installation			△ PRR																				
			Procure/Integrate CVN-72				Install CVN-72																
								△ LRIP	△ LRIP														
Deliveries			△ SW Rel 3																				
Testing					Design & Dev				Ship Integration														
					IT-B2				IT-C1														
					IT-B3																		
									△ DTR														

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Exhibit R-2, RDTEN Budget Item Justification Sheet

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EXHIBIT R4, Schedule Profile													ADMACS BLOCK 3				DATE: May 2009	
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				
Fiscal Year	2008				2009				2010									
	1	2	3	4	1	2	3	4	1	2	3	4						
Milestones/Phases									Development & Testing									
Program Events											PDR △							
Procurement/Integration/Installation																		
Deliveries																		
Testing																		

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EXHIBIT R4, Schedule Profile										TECHNOLOGY INSERTION FOR THE EMALS (CONT'D)										DATE: May 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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EXHIBIT R4, Schedule Profile												DATE: May 2009	
SWAGING MACHINE													
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	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Milestones/Phases											Proto- type 2 Build		
Testing & Evaluation										Perf Test			
										EMI Shock Env Test			

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EXHIBIT R4, Schedule Profile													DATE: May 2009				
ALRE MODERNIZATION																	
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				
Fiscal Year	2008				2009				2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
a) Embarked Aircraft Track Sys (EATS)																	
Acquisition Milestone																	CDR △
Test & Evaluation																	
Production Milestone																	

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EXHIBIT R4, Schedule Profile												ALRE MODERNIZATION (CONT'D)				DATE: May 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E, N / BA-5		0604512N Shipboard Aviation Systems			9999 - Congressional Adds			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost			2.792					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Add

B. Accomplishments/Planned Program:

9D80A Sensorless Control of Linear Motors in EMALS	FY08	FY09	FY10	
Accomplishment/Effort/Subtotal Cost		2.792		
RDT&E Article Quantity				

The Navy will initiate the development of advanced sensorless control capability for the Electromagnetic Aircraft Launch System (EMALS) program.

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604518N/COMBAT INFORMATION CENTER CONVERSION					
COST (In Millions)		FY 2008	FY 2009	FY 2010			
Total PE Cost		18.163	17.709	13.305			
3094 / USW Decision Support		16.616	14.717	13.305			
9999 / Congressional Add		1.547	2.992	0.000			
A. MISSION DESCRIPTION: The objective of this Program Element (PE), under Project 3094, is to develop a net-centric Undersea Warfare Decision Support System (USW-DSS) capability to support the Theater Anti-Submarine Warfare (ASW) Commander (TASWC), Sea Combat Commander (SCC), Anti-Submarine Warfare Commander (ASWC) and the Mine Warfare Commander (MIWC). USW-DSS will primarily of computer software components that will be developed and implemented to comply with FORCENet and Open Architecture Computing Environment (OACE) architecture standards and guidance. The resultant system will yield a single software architecture for afloat ASW Combat Command and Control (C2) that will bridge the Command, Control, Communications, Computers, & Intelligence (C4I) domain and the combat systems, to achieve the capabilities described in USW-DSS Increment 1 Capabilities Production Document (CPD). USW-DSS will provide the following integrated capabilities on board selected Carrier Strike Groups (CSGs): plan, conduct, and coordinate USW operations with multiple ASW and MIW platforms; rapidly receive and implement the directions of the SCC, respond to the actions of other assigned platforms and make inputs to the SCC and other platforms concerning the current state of the tactical situation; encompass other assets that may be available in the form of deployed sensor fields, autonomous vehicles and other similar capabilities; communicated intentions, on-going actions, requirements, and results to peer-level warfare commanders, supporting commands and higher authority; integrate functionality and interoperate with the needs of the TASWC and capabilities already available at theater commands; receive and distribute contact/track data, Tactical Decision Aid (TDA) data, and other information necessary for data fusion and providing coordinated situational awareness. Assets assigned to the TASWC and the SCC may include surface combatants; ASW aircraft; dedicated Mine Countermeasure (MCM) platforms; submarines; undersea surveillance platforms; shore processing facilities; supporting commands. These form a hierarchy of participants that will each be provided with varying levels of net-centric USW-DSS functionality. Beginning in FY09, USW-DSS (Advanced Capability Build (ACB) 2) will be hosted on the Integrated Shipboard Network System (ISNS) as one of the first Early Adopters, leveraging initial Service Oriented Architecture (SOA) Reference Implementation. USW-DSS (ACB 3 and beyond) will be hosted on the Consolidated Adaptive Networks and Edge Services (CANES) architecture, which will be fully SOA enabled. The objective of this PE, under Project 9C15A in FY08, is to develop an environmentally sealed, ruggedized, large-scale display for Tactical Operations Centers. This effort consists of the development, testing, and delivery of a production representative, environmentally sealed, 82-inch fan-less Light Emitting Diode (LED) driven, SCRAMscreen polyplaner array display system for the USN ASW Dead-Reckoning Table program.							

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604518N/COMBAT INFORMATION CENTER CONVERSION	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	18.365	14.792	13.811
FY10 President's Budget	18.163	17.709	13.305
Total Adjustments	-0.202	2.917	-0.506
(U) Summary of Adjustments			
Congressional Rescissions	-0.021	0.000	0.000
Congressional Adjustments	0.000	2.992	0.000
SBIR/STTR/FTT Assessment	-0.181	0.000	0.000
Program Adjustments	0.000	0.000	0.000
Rate/Misc Adjustments	0.000	-0.075	-0.506
Total	-0.202	2.917	-0.506
C. OTHER PROGRAM FUNDING SUMMARY:			
OPN BLI 2176 / USW Support Equipment			
Specific Sub-Procurement Item:			
Space Information Command and Control Programs (N61), Undersea Warfare-Decision Support System (USW-DSS)			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN/BLI 2176/USW Support Equipment (Grand Total BLI)	14.805	15.532	38.705
OPN/BLI 2176/USW Support Equipment (Related N61 Portion)	6.100	2.299	2.752
			Total Cost
			69.042
			11.151
D. ACQUISITION STRATEGY:			
- Hardware/Software integration contractor to be funded through SBIR Phase III contract.			
E. MAJOR PERFORMERS:			
- Johns Hopkins University Applied Physics Laboratory (JHU/APL), Laurel, MD - USW-DSS OMI/HSI support, test & evaluation support			
- NAVSEA, Carderock, MD - USW-DSS interface design and documentation, software management, test & evaluation			
- NAVSEA, Keyport, WA - USW-DSS Carrier integration, track management			
- NAVSEA, Newport, RI - USW-DSS Technical Design Agent (TDA), CHENG, submarine integration			
- SSC, San Diego, CA - GCCS-M, C2 collaboration tools, network and security certifications, mission planner development			
- Progeny Systems Corporation, Manassas, VA - USW-DSS hardware/software integration			
- Adaptive Methods, Centerville, VA - USW-DSS software development			

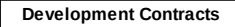
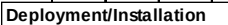
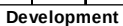
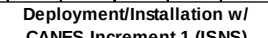
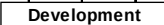
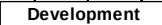
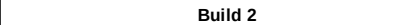
CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION			PROJECT NUMBER AND NAME 3094/USW Decision Support		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	16.616	14.717	13.305				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 3094 will develop the Undersea Warfare Decision Support System (USW-DSS) that will: 1) Provide a critical Command & Control (C2) capability package that includes improvements in battle group vulnerability assessments, sensor performance predictions, mission planning and execution improvements, and optimized search planning and collaboration capabilities for the SCC, TASWC, MIW Commander and ASW Commander; 2) Provide full capability to plan and conduct USW operations through functional alignment of platforms/sensors to exploit the environment and improved allocation of resources; and 3) Increase lethality and survivability through improved asset allocation, optimized platform/sensor placement, and increased situational awareness. These capabilities will provide a consistent, accurate, and timely situational understanding of the underwater battle space and the various entities that may influence it, including force disposition and the environment (atmospheric, oceanographic and geographic), to all participants that are in the process of conducting either ASW, MIW or other warfare operations. USW-DSS capabilities will be developed and integrated in a build-test-build process with each build improving on the previous delivery and/or adding additional capabilities.							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION	PROJECT NUMBER AND NAME 3094/USW Decision Support	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
USW-DSS Advanced Capability Build 2.0 Development / Integration / Test	3.911	0.500	0.000
RDT&E Articles Quantity	0	0	0
Integrate and test additional USW-DSS tools/capabilities, including Improved ASW track management, automated asset allocation, automated re-planning, battle management capabilities including engagement target pairing, cross platform data fusion, and improved theater USW capabilities. Incorporate visualization/display service currently demonstrated as Theater ASW Composeable FORCEnet (CFn) prototype.			
FY08-09 - Complete integration, testing, and evaluation of new functionality in USW-DSS incremental ACB 2.0. Develop and implement upgrades based upon Operational Testing. Conduct development, integration, testing, and evaluation of ACB 2.0 upgrades and correct deficiencies identified during OAs.			
	FY 2008	FY 2009	FY 2010
USW-DSS Advanced Capability Build 3.0 Development / Integration / Test	0.000	3.328	2.561
RDT&E Articles Quantity	0	0	0
Integrate and test additional USW-DSS tools/capabilities including improved integrated mission planning/execution tools, additional ASW track management improvement, improved situational awareness capabilities, improved data management including automated recommendations and extended use of intelligent agents, additional interfaces with tactical and environmental sensors, and MPRA ASW C2 toolset.			
FY09 - Initiate specification and architecture for USW-DSS ACB 3.0.			
FY10 - Complete development, integration, and testing of USW-DSS incremental ACB 3.0. Integrate USW-DSS with ISNS/CANES Architecture.			
	FY 2008	FY 2009	FY 2010
USW-DSS Advanced Capability Build 4.0 Development / Integration / Test	0.000	0.000	1.441
RDT&E Articles Quantity	0	0	0
Integrate and test additional/improved USW-DSS tools/capabilities based on ACB 3.0, including integrated mission planning/execution tools, ASW track management, situational awareness capabilities, data management (including automated recommendations and extended use of intelligent agents), interfaces with tactical and environmental sensors, and the MPRA ASW C2 toolset.			
FY10 - Initiate specification and architecture for USW-DSS ACB 4.0.			
Complete development, integration, and testing of USW-DSS incremental ACB 4.0. Integrate USW-DSS with ISNS/CANES architecture.			
	FY 2008	FY 2009	FY 2010
ISNS/CANES Integration	0.000	2.000	2.000

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION		PROJECT NUMBER AND NAME 3094/USW Decision Support	
RDT&E Articles Quantity		0	0	0
Beginning in FY09, provide the required integration and testing for migration to the Integrated Shipboard Network System (ISNS) (USW-DSS ACB 2.0) and Consolidated Adaptive Networks and Edge Services (CANES) (USW-DSS ACB 3.0 and out) for surface platforms.				
	FY 2008	FY 2009	FY 2010	
Mission Planning Development	3.605	2.089	2.803	
RDT&E Articles Quantity	0	0	0	
Develop and test integrated mission planning tools, including necessary TDAs and C2 tools, to optimize the use of all available platform and distributed sensors. Develop multi-static TDAs/tools for enhanced detection and interference prevention. Develop asset allocation tools. Incorporate real-time sensor performance and develop common display standards for maximum information sharing. Provide Mission Planning capabilities/tools for integration into the appropriate USW-DSS incremental builds.				
	FY 2008	FY 2009	FY 2010	
ASW Track Management Development	4.700	2.200	0.500	
RDT&E Articles Quantity	0	0	0	
Develop C2 tools to support new automated No Attack (NOTACK) concepts. Establish new track structure which allows sharing of ASW collaborative-level contacts and includes amplifying contact information. Develop scalable track sharing capabilities, including intermittent operations with submarines and Maritime and Patrol Reconnaissance Aircraft (MPRA). Develop an ASW threat prioritization and ASW target asset pairing TDA. Define and develop all sensor data fusion services. Provide capabilities for implementation into the appropriate USW-DSS incremental builds.				
	FY 2008	FY 2009	FY 2010	
Improved Situational Awareness Development	1.000	2.500	3.500	
RDT&E Articles Quantity	0	0	0	
Develop the necessary capabilities to exchange data between C2 and Combat Systems to support enhanced ASW situational awareness. Develop improved force planning and status tools to access database and systems to obtain the status of platforms and combat systems (fuel, weapon inventory, readiness, etc.). Incorporate this information into planning system models. Provide capabilities for implementation into the appropriate USW-DSS incremental builds.				
	FY 2008	FY 2009	FY 2010	
MPRA ASW C2 Toolset Development	1.500	1.500	0.500	
RDT&E Articles Quantity	0	0	0	
Develop a P-3/Multi-Mission Maritime Aircraft (MMA) C2 toolset to include an integrated USW-DSS capability with the P-3 Integrated Tactical Picture. Capabilities will include: Common Operational Picture (COP) collaboration toolset, track management, in-situ mission planning tools and initial interface with Joint Mission Planning System (JMPS). Provide capabilities for implementation into the appropriate USW-DSS incremental build.				
	FY 2008	FY 2009	FY 2010	
Battle Management Capability Development	1.900	0.600	0.000	
RDT&E Articles Quantity	0	0	0	

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION	PROJECT NUMBER AND NAME 3094/USW Decision Support	
Develop TDA/tools for the engagement phase of an operation. These capabilities will include asset allocation, dynamic vulnerability analysis, dynamic re-planning, rapid access to rules of engagement, engagement target pairing, cross platform data fusion, reconstruction, improved Geographic Information System (GIS) functionality, and environmental data ingest and analysis. Provide capabilities for implementation into the appropriate USW-DSS incremental build.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION					PROJECT NUMBER AND NAME 3094/USW Decision Support					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Primary H/W & S/W Development	WR	NAWC Patuxent River, MD	0.000			0.300	OCT-08	0.300	OCT-09		0.600	0.000
Primary H/W & S/W Development	WR	NAVSEA Dahlgren, VA	0.000			0.000		0.501	OCT-09		0.501	0.000
Primary H/W & S/W Development	WR	NAVSEA Carderock, MD	1.810			0.917	OCT-08	0.834	OCT-09		3.561	0.000
Primary H/W & S/W Development	WR	NAVSEA Keyport, WA	1.679			0.840	OCT-08	0.764	OCT-09		3.283	0.000
Primary H/W & S/W Development	WR	NAVSEA Newport, RI	7.416			2.959	OCT-08	2.693	OCT-09		13.068	0.000
Primary H/W & S/W Development	WR	SSC San Diego, CA	0.970			0.300	OCT-08	0.300	OCT-09		1.570	0.000
Primary H/W & S/W Development	WR	VAR, (*See Remark)	0.839			0.000		0.000			0.839	0.000
Primary H/W & S/W Development	C/CPFF	Adaptive Methods, VA	3.446			2.236	NOV-08	2.012	NOV-09		7.694	0.000
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	1.446			0.537	NOV-08	0.537	NOV-09		2.520	0.000
Primary H/W & S/W Development	C/CPFF	Progeny, CA	7.584			2.224	NOV-08	2.024	NOV-09		11.832	0.000
Primary H/W & S/W Development	C/CPFF	VAR, (*See Remark)	2.175			3.684	NOV-08	2.620	NOV-09		8.479	0.000
Subtotal Product Development			27.365			13.997		12.585			53.947	0.000
Remarks: * Consistsof multiple performing activitieswith fundingfor each not greater than\$1 million per year.												
At-Sea Test and Evaluation	WR	VAR, VAR (*See Remark)	1.100			0.300	DEC-08	0.300	DEC-09		1.700	0.000
Subtotal Test and Evaluation			1.100			0.300		0.300			1.700	0.000
Remarks: * Consistsof multiple performing activitieswith fundingfor each not greater than\$1 million per year.												
Program Management Support	C/CPAF	BAE Systems, MD	1.260			0.420	NOV-08	0.420	NOV-09		2.100	0.000
Subtotal Management Services			1.260			0.420		0.420			2.100	0.000
Remarks:												
Total Cost			29.725			14.717		13.305			57.747	0.000

CLASSIFICATION:				UNCLASSIFIED																								
EXHIBIT R-4, SCHEDULE PROFILE																		DATE May 2009										
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5								PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION								PROJECT NUMBER AND NAME 3094/USW Decision Support												
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition/Contract Milestones/Reviews			 SW/HW Integration Contract via SBIR III								 Development Contracts																	
USW-DSS Advanced Capability Build (ACB) 1	 Deployment/Installation																											
USW-DSS Advanced Capability Build (ACB) 2 / CANES Increment 1 (ISNS) Integration	 Development				 IV&V		 Cert.		 Deployment/Installation w/ CANES Increment 1 (ISNS)																			
USW-DSS Advanced Capability Build (ACB) 3 / CANES Integration					 Development																							
USW-DSS Advanced Capability Build (ACB) 4 / CANES Integration									 Development																			
At-Sea Tests (All Builds)			 Build 2 DT		 Build 2 Operational Observation		 Build 2 OT																					
At-Sea Experiments (All Builds)			 TW-08		 Annual ex-09		 TW-09						 VS-10															
System Deliveries OPN BLI 2176 (N6F USW-DSS)	 Build 1				 Build 2																							

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CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION	PROJECT NUMBER AND NAME 9999/Congressional Add	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Environmentally Sealed, Ruggedized Large Scale Display for Tactical Ops	1.547	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY08 Congressional Add: 9C15A - The Environmentally Sealed, Ruggedized Large Scale Display for Tactical Operations Centers Congressional Add develops, tests, and delivers a production representative, environmentally sealed, 82-inch fan-less LED driven / DLP, SCRAMscreen polyplaner array display system for the USN ASW Dead-Reckoning Table program.			
	FY 2008	FY 2009	FY 2010
A Scalable Open Architecture Upgradeable Reliable Computing Environment	0.000	2.992	0.000
RDT&E Articles Quantity	0	0	0
FY09 Congressional Add: 9D81A - Scalable Open Architecture Upgradeable Reliable Computing Environment will provide infrastructure improvements to the Undersea Warfare - Decision Support System (USW-DSS AN/UYQ-100). The current computer server approach used by USW-DSS, as well as all currently fielded Information Technology (IT) systems, requires significant investment in many areas to field capability to the fleet. The current approach to loading applications on servers and imposed server cabinet size limitations due to ship installation location provides limited redundancy and prevents future migration to improved Contractor-Off-The-Shelf (COTS) processing power to support planned functionality improvements. To meet fleet desires to accelerate the fielding of USW-DSS, the Navy needs to migrate to a more cost effective and efficient method of fielding a more scalable, open, upgradeable, reliable computing environment (SOURCE). The focus of this effort will be investigation into adapting and tailoring commercial standards and COTS-based hardware and open source software for SOURCE development.			

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604558N/NEW DESIGN SSN				
COST (In Millions)		FY 2008	FY 2009	FY 2010				
Total PE Cost		239.774	189.714	154.756				
1947 / NEW DESIGN SSN HM&E		164.424	123.628	118.030				
1950 / New Design SSN Combat Sys Dev		44.898	40.374	32.307				
3062 / Submarine Multi-Mission Team Trainer		6.231	2.773	4.419				
9999 / CONGRESSIONAL ADDS		24.221	22.939	0.000				
A. MISSION DESCRIPTION: 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 3062: The Submarine Multi-Mission Team Trainer (SMMTT) funded in this RDT&E line provides 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 9999: FY08 Congressional Plus-Ups include; Small Business Technology Insertion, Oxygen Generator, Combat Control for Distributed Netted Systems, and Submarine Electronic Chart Updates. FY09 Congressional Plus-Ups include; Small Business Technology Insertion, Submarine Automated Test and Retest (ATRT), ASW Enhancements, and Highly Corrosive Resistant Alloy Joining for Nuclear Components.								

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604558N/NEW DESIGN SSN	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	244.135	167.357	157.789
FY10 President's Budget	239.774	189.714	154.756
Total Adjustments	-4.361	22.357	-3.033
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	22.939	0.000
SBIR/STTR/FTT Assessment	-2.554	0.000	0.000
Program Adjustments	-1.799	0.000	-2.483
Rate/Misc Adjustments	-0.008	-0.582	-0.550
Total	-4.361	22.357	-3.033

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	164.424	123.628	118.030				
RDT&E Articles Qty	0	0	0				
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 DARPA TANGO/BRAVO Submarine technology program may transition to prototyping and/or applicability on VIRGINIA hulls.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
HM&E Development	121.912	103.527	107.505
RDT&E Articles Quantity	0	0	0
HM&E DEVELOPMENT			
FY08 Accomplishments: Continued design, manufacturing, qualification testing, and logistics documentation of prototype technologies and components such as impressed current cathodic protection. Continued system verification studies, tests, and analyses in support of ship design including for example 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. Continued to support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Continued block upgrades of Ship Control Algorithms and software. Completed shock testing and qualification of the torpedo tube system. Completed component shock testing on the Floating Shock Platform and completed qualification certification. Completed shock test vehicle construction and testing for large penetrations shock qualification. Initiated control algorithm improvements for the TG set bearings. Assessed at-sea acoustic data, dockside testing, and develop plan responding to at-sea acoustic measurements. Continued software development for Advanced Electromagnetic Silencing capability. Continued development, demonstration, and design implementation of multiple Block III Cost Reduction technologies including, for example, Large Area Bow Array, payload tubes, vendor supplied reverse osmosis, low cost sound isolation coupling, and reduced cost integrated low pressure electrolyzer and transition of Office of Naval Research Manufacturing Technology Program manufacturing process developments. Continued risk reduction design and testing of CAVES array concept. Acquired large panel data from lake test facility. Efforts previously identified as program administrative are included in the efforts above. FY09 Plan: Continue design, manufacturing, qualification testing, and logistics documentation of prototype technologies and components such as impressed current cathodic protection. Continue system verification studies, tests, and analyses in support of ship design including for example 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. Continue to support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Continue ship control station software upgrades. Continue block upgrades of Ship Control Algorithms and software. Complete shock qualification certification of large penetration components. Complete control algorithm improvements for the TG set bearings. Initiate developments responding to SSN774 OPEVAL and TECHEVAL findings. Continue software development for Advanced Electromagnetic Silencing capability. Continue development, demonstration, and design implementation of multiple Block III Cost Reduction technologies including, for example, Large Area Bow Array, payload tubes, vendor supplied reverse osmosis, low cost sound isolation coupling, and reduced cost integrated low pressure electrolyzer and transition of Office of Naval Research Manufacturing Technology Program manufacturing process developments. Initiate design and model scale evaluation of Flexible Payload Sail Continue risk reduction design and testing of CAVES array concept. FY10 Plan: Continue block upgrades of Ship Control Algorithms and software. Continue developments responding to SSN774 OPEVAL and TECHEVAL findings. Continue software development for Advanced Electromagnetic Silencing capability. Continue development, demonstration, and design implementation of multiple Block III Cost Reduction			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E	
technologies including, for example, Large Area Bow Array, payload tubes, vendor supplied reverse osmosis, low cost sound isolation coupling, and reduced cost integrated low pressure electrolyzer and transition of Office of Naval Research Manufacturing Technology Program manufacturing process developments. Develop detailed plan for Block IV Cost Reduction Program. Continue design and model scale evaluation of Flexible Payload Sail. Continue risk reduction design and testing of CAVES array concept.			
	FY 2008	FY 2009	FY 2010
Test and Evaluation	42.512	20.101	10.525
RDT&E Articles Quantity	0	0	0
TEST AND EVALUATION FY08 Accomplishments: Issued Vulnerability Assessment Report (VAR) update and continued LFT&E related analysis in support of the final VAR update. Performed developmental and operational testing including Acoustic Trials, Post NPES Modernization certification testing, supplemental Active Target Strength, platform TECHEVAL and OPEVAL testing, and Dry Deck Shelter TECHEVAL and OPEVAL testing. Continued development of FOT&E requirements and testing plans. FY09 Plan: Complete LFT&E, TECHEVAL and OPEVAL testing, analysis, and reporting in support of Milestone III decision. Continue analysis of acoustic trials data, development of FOT&E requirements and testing plans, and issue a TEMP revision. Initiate Arctic developmental and operational testing. FY10 Plan: Complete Arctic developmental and operational testing, analysis and reporting. Perform Dry Deck Shelter (DDS) developmental and operational testing, analysis and reporting. Initiate TI-08 developmental and operational testing. Perform secure search rate operational and developmental testing. Continue development of FOT&E requirements and testing plans for Advanced SEAL Delivery System and Block III efforts.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
SCN Line 201300 PE: 0204281N	3,174.291	3,573.127	3,924.042
O&M, N BA-2 1B2B PE: 0204283N	42.039	56.717	57.695
OPN BA-8 Line Item 094200	145.365	182.664	103.153

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E	
D. 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 and has reduced the number of changes typically encountered during construction of the lead and early follow-on ships. In September 1997, Congress passed a law allowing Electric Boat (EB) and Northrop Grumman Newport News (NGNN) to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, EB remained the design yard for the VIRGINIA Class Submarine and NGNN became a part of the IPPD process. The Program Office is managing two multi-year contracts the first is for the FY04-08 ships and the second was awarded in December 2008 for the FY09-13 ships. E. MAJOR PERFORMERS: 1. Electric Boat Corporation, Groton CT - Virginia Class Lead Shipbuilder 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:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Test and Evaluation	Contract	EB-2103 Groton, CT	0.866	0.000		0.000				
Test and Evaluation	WR	NSWC Carderock MD	84.825	6.283	NOV-08	0.350	NOV-09			
Test and Evaluation	WR	NUWC Newport	90.164	7.601	NOV-08	2.375	NOV-09			
Test and Evaluation	C/CPAF	SEAPORT D7019 Rockville MD	17.708	1.075	NOV-08	0.300	NOV-09			
Test and Evaluation	Contract	Progeny 06C6256	1.908	0.713	NOV-08	0.000				
Test and Evaluation	PD	COMOPTEVFOR	7.988	4.150	NOV-08	4.600	NOV-09			
Test and Evaluation	Various	Miscellaneous	11.655	0.210	NOV-08	2.900	NOV-09			
Test and Evaluation	WR	NSWC Dahlgren, VA	0.175	0.070	NOV-08	0.000				
Subtotal Test and Evaluation			215.289	20.102		10.525				
Remarks:										
Contractor Engineering Support	C/CPAF	SEAPORT D7019 Rockville MD	16.325	2.138	NOV-08	2.083	NOV-09			
Travel			1.919	0.000		0.000				
Subtotal Management			18.244	2.138		2.083				
Remarks:										
Component Development	Contract	EB-2103 Groton, CT	117.088	72.546	NOV-08	85.585	NOV-09			
Component Development	PD	SOS/Groton	35.473	3.992	JAN-09	0.854	JAN-10			
Component Development	WR	NSWC Carderock MD	546.069	12.360	NOV-08	11.619	NOV-09			
Component Development	WR	NUWC Newport RI	94.348	0.754	NOV-08	0.745	NOV-09			
Miscellaneous	Various	Various	39.409	4.336	JAN-09	4.619	JAN-10			
Component Development	Contract	EB 04-C-2100	22.964	0.000		0.000				
Component Development	SS/CPFF	LM - D-4079	1.715	0.000		0.000				
Component Development	SS/CPFF	LM - C-6207	10.785	7.400	DEC-08	2.000	DEC-09			
Subtotal Product Development			867.851	101.388		105.422				
Remarks:										
Total Cost			1.101.384	123.628		118.030				

CLASSIFICATION:				UNCLASSIFIED																
EXHIBIT R-4, SCHEDULE PROFILE												DATE May 2009								
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN						PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E										
Fiscal Year	2008				2009				2010											
	1	2	3	4	1	2	3	4	1	2	3	4								
Acquisition Milestones						MS III (FOC) 														
Test & Evaluation Milestones	DT-IIE				DT-IIF															
Development Test																				
Operational Test																				
											</									

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1947/NEW DESIGN SSN HM&E		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Post Shakedown Availability (PSA SSN 775)		1Q-2Q					
Developmental Test (DT-II E)		1Q					
Developmental Test (DT-II F)		1Q-4Q					
Ship Authorization (SSN 783)		1Q					
Ship Delivery (SSN 777)		2Q					
Operational Evaluation (OT-II D) (OPEVAL)		2Q-4Q					
Post PSA Modernization (SSN 775)		4Q	1Q				
Post Shakedown Availability (PSA SSN 776)		3Q-4Q	1Q-2Q				
Post PSA Modernization (SSN 776)		3Q-4Q	1Q-2Q				
Ship Delivery (SSN 778)		4Q					
Ship Authorization (SSN 784)			1Q				
Post Shakedown Availability (PSA SSN 777)			2Q-4Q	1Q			
Milestone III (MSIII)			3Q				
Full Operational Capability (FOC)			3Q				
Ship Delivery (SSN 779)			4Q				
Post Shakedown Availability (PSA SSN 778)			4Q	1Q			
DT-III A (Arctic)			4Q	1Q			
OT-III X (Arctic)			4Q	1Q			
Ship Authorization (SSN 785)				1Q			
Post Shakedown Availability (SSN 779)				3Q-4Q			
Ship Delivery (SSN 780)				4Q			
DT-III B (NPES)				4Q			
OT-III X (NPES)				4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1950/New Design SSN Combat Sys Dev		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	44.898	40.374	32.307				
RDT&E Articles Qty	0	0	0				

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.

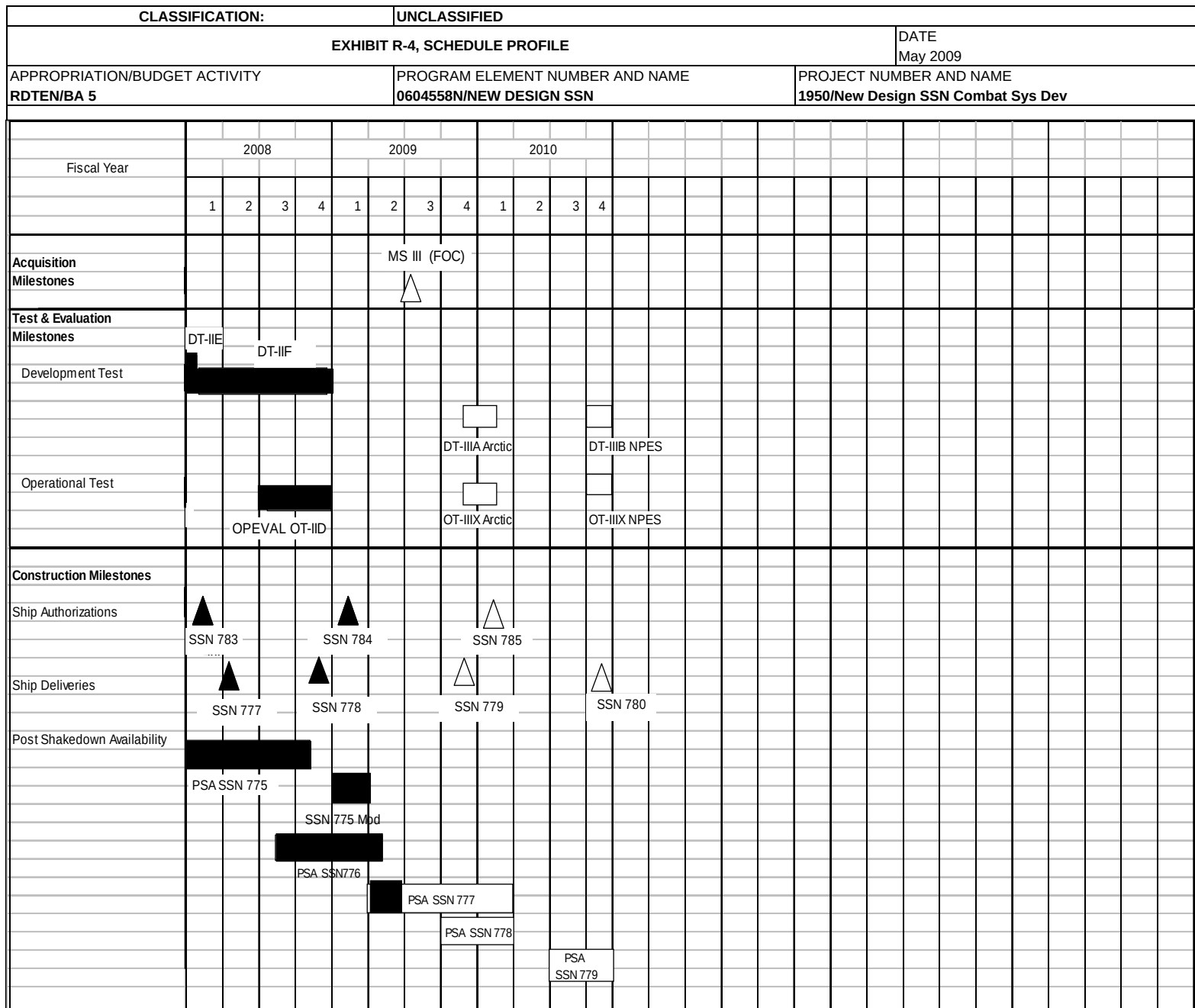
(U) To meet the collective future threat, the submarine force must operate as effectively in littoral regions as it traditionally has in open ocean. Close coordination with surface battle groups and airborne units is essential to mission accomplishment. To meet the VIRGINIA Class Submarine mission, the 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 F1950 project mission includes 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:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 1950/New Design SSN Combat Sys Dev	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
C3I Systems Engineering	28.112	28.820	14.730
RDT&E Articles Quantity	0	0	0
ACCOMPLISHMENTS:			
1. (U) FY 2008 PLAN (\$28.112M): Continued development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Completed C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Began the development of System Level and other subsystem improvements to maintain VIRGINIA Class Commonality to backfit fleet. 2. (U) FY 2009 PLAN (\$28.820M): Complete development of high priority ship safety/self-protect and mission specific deficiencies identified during integration and lead ship sea test efforts including DT and OT events. Continue the development of System Level and other subsystem Improvements to maintain VIRGINIA Class Commonality to backfit fleet. 3. (U) FY 2010 PLAN (\$14.730M): Continue the development of System Level and other subsystem Improvements to maintain VIRGINIA Class Commonality to backfit fleet.			
	FY 2008	FY 2009	FY 2010
Sonar Combat Control and Architecture Subsystems	16.786	11.554	17.577
RDT&E Articles Quantity	0	0	0
ACCOMPLISHMENTS:			
1. (U) FY 2008 PLAN (\$16.786M): Continued development of high priority S/CC/A ship safety/self protect and mission specific deficiencies identified during integration and lead ship test efforts including DT and OT events. Continued the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet. 2. (U) FY 2009 PLAN (\$11.554M): Continue development of high priority S/CC/A ship safety/self protect and mission specific deficiencies identified during integration and lead ship test efforts including DT and OT events. Continue the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet. 3. (U) FY 2010 PLAN (\$17.577M): Continue the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 1950/New Design SSN Combat Sys Dev	
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
SCN Line 201300 PE: 0204281N	3,174.291	3,573.127	3,924.042
O&M,N BA-2 1B2B PE: 0204283N	42.039	56.717	57.695
OPN BA-8 Line Item 094200	145.365	182.664	103.153
D. 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 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 planning for the FY09-13 multiyear contract and efforts to reduce costs for the FY12 and beyond VIRGINIA Class submarines to \$2B (FY05\$) when procurement rate increases to 2 per year.			
E. MAJOR PERFORMERS:			
Lockheed Martin, Manassas, Virginia. C3I Prime Contractor, Development and Limited Production of the S/CC/A Subsystems Naval Undersea Warfare Center, Newport, Rhode, Island, Technical Direction Agent for all Virginia Class Electronics.			

CLASSIFICATION:			UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1950/New Design SSN Combat Sys Dev				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
PTR Corrections	Various	Various/TBD	17.349	12.739	JUL-09	0.000				
Unique Virginia Class Improvements	TBD	Various/TBD	4.737	4.117	NOV-08	10.491	NOV-09			
Advanced Display Sys (AN/UYQ-70)	SS/CPIF	Lockheed St. Paul, MN	29.337	0.749	NOV-08	1.019	NOV-09			
Photonics	C/CPIF	Kollmorgen Northhampton, MA	38.543	1.145	MAY-09	1.300	MAY-10			
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	38.067	0.000		0.000				
Platform Integration	SS/CPFF	EB Corp Groton, CT	42.276	1.000	NOV-08	1.100	NOV-09			
Technology Refreshment	Various	Various/TBD	18.687	1.668	NOV-08	0.000				
Technical Direction Agent	N/A	NUWC Newport, RI	249.505	8.000	JAN-09	8.000	JAN-10			
Technology Refreshment/Info. Assurance	C/CPFF	Progeny Systems, Manassas, VA	27.986	1.000	NOV-08	1.200	NOV-09			
Systems Engineering	N/A	NSWC Carderock, MD	7.243	0.680	NOV-08	0.720	NOV-09			
Systems Engineering	N/A	SSC Charleston, SC	4.515	0.530	NOV-08	0.500	NOV-09			
Systems Engineering	N/A	NUWC Keyport, WA	9.865	0.188	NOV-08	0.200	NOV-09			
Miscellaneous	Various	Various	111.773	6.358	VAR	5.427	VAR			
Subtotal Product Development			599.883	38.174		29.957				
Remarks:										
Test and Evaluation	Various	Various	6.212	0.000		0.000				
Subtotal Test and Evaluation			6.212	0.000		0.000				
Remarks:										
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	14.721	2.200	DEC-08	2.350	DEC-09			
Subtotal Management Services			14.721	2.200		2.350				
Remarks:										
Total Cost			620.816	40.374		32.307				



CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 1950/New Design SSN Combat Sys Dev		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Post Shakedown Availability (PSA SSN 775)		1Q-2Q					
Developmental Test (DT-II E)		1Q					
Developmental Test (DT-II F)		1Q-4Q					
Ship Authorization (SSN 783)		1Q					
Ship Delivery (SSN 777)		2Q					
Operational Evaluation (OT-II D) OPEVAL		2Q-4Q					
Post PSA Modernization (SSN 775)		4Q	1Q				
Post Shakedown Availability (PSA SSN 776)		3Q-4Q	1Q-2Q				
Post PSA Modernization (SSN 776)		3Q-4Q	1Q-2Q				
Ship Delivery (SSN 778)		4Q					
Ship Authorization (SSN 784)			1Q				
Post Shakedown Availability (PSA SSN 777)			2Q-4Q	1Q			
Milestone III (MSIII)			3Q				
Full Operational Capability (FOC)			3Q				
Ship Delivery (SSN 779)			4Q				
DT-III A (Arctic)			4Q	1Q			
OT-III X (Arctic)			4Q	1Q			
Ship Authorization (SSN 785)				1Q			
Post Shakedown Availability (SSN 779)				3Q-4Q			
Post Shakedown Availability (PSA SSN 778)				4Q			
Ship Delivery (SSN 780)				4Q			
DT-III B (NPES)				4Q			
OT-III X (NPES)				4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	6.231	2.773	4.419				
RDT&E Articles Qty	0	0	0	0	0	0	0
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shore based 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) MK1, CCS MK2, and AN/BYG-1, along with sonar systems AN/BSY-1, AN/BQQ-5, and AN/BQQ-10 are installed on SSN and SSGN Class submarines. These tactical systems are planned for future upgrades with the next hardware and software revisions which will provide enhanced war fighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) Phased upgrades are also being installed with future revisions. The Advanced Processing Builds (APB) and Technical Insertion (TI) sensors, which feed technology insertion into the CCS/Acoustic development, directly 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 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.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	6.231	2.773	4.419
RDT&E Articles Quantity	0	0	0
FY08 Develops implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. Develop standalone functionality of SMMTT SEAWOLF (SSN 21) Sonar and Combat Control. FY09 Develops implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. FY10 Develops implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. This effort also includes new sensor developments and simulation to match advancements in tactical systems supported by SMMTT.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
566100, TD009 Submarine Training Device Mods	25.541	27.413	17.313
D. ACQUISITION STRATEGY: The SMMTT program software development is accounted for in this RDT&E line. All production kits are procured in OPN PE 0804731N BLI 566100, cost code TD009. E. MAJOR PERFORMERS: NSWC/CD Bethesda, MD			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Component Development	REQN	NSWC/CD, Bethesda, MD	13.623	2.373	DEC-08	4.019	DEC-09			
Component Development	CICPFF	UT Austin ARL	1.555	0.400	JAN-09	0.400	JAN-10			
Subtotal Product Development			15.178	2.773		4.419				
Remarks:										
Total Cost			15.178	2.773		4.419				

CLASSIFICATION:		UNCLASSIFIED															
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009							
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN					PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer							
Fiscal Year					2008				2009				2010				
					1	2	3	4	1	2	3	4	1	2	3	4	
Interface Design Updates							▲				△				△		
Software Development Updates (SIM/STIM)								▲				△				△	
Software Builds								▲				△				△	
APB Upgrades					▲					▲			△				
SSGN 726 Development														△			
SSGN Build																	
H/W Tech Insertion Additions/Updates									▲								
SSN 21 Simulation Plan Development Additions					▲												
SSN 21 Prime Item Dev. Spec. (PIDS) Additions						▲											
SSN 21 System Requirements Specification (SRS) Additions							▲										
SSN-21 Interface Req'ts Specification (IRS) Additions								▲									
SSN-21 Interface Design Development								▲									
SSN-21 Software Development												△					
SSN-21 Software Testing								▲					△				
SSN-21 EDM Delivery														△			
TI-0x New Sensor Simulation Development													△				
TI-0x New Sensor Simulation EDM updates													△	△			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN			PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Interface Design Updates		3Q	3Q	3Q			
Software Development Updates (SIM/STIM)		4Q	4Q	4Q			
Software Builds		4Q	4Q	4Q			
Advanced Processing Build (APB) Upgrades		1Q	2Q	1Q			
SSGN 726 Development				2Q			
Hard Ware Tech Insertion Updates			1Q				
SSN 21 Simulation Plan Development Additions		1Q					
SSN 21 Prime Item Dev Spec. (PIDS) Additions		1Q-2Q					
SSN 21 System Requirements Spec (SRS) Additions		1Q-2Q					
SSN 21 Interface Reqt's Spec (IRS) Additions		1Q-3Q					
SSN 21 Interface Design Development		1Q-3Q					
SSN 21 Software Development		1Q-4Q	1Q-4Q				
SSN 21 Software Testing		3Q-4Q	1Q-4Q	1Q			
SSN 21 EDM Delivery				2Q			
TI-0x New Sensor Simulation Development				1Q-4Q			
TI-0x New Sensor Simulation EDM Updates				1Q-2Q			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal 9C19A	2.603	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C19A Submarine Electronic Chart Updates			
Research, design and develop updates to the common Navy solution for the Submarine digital nautical charts. These updates will enhance the current Voyage Management System/Enhanced Control Display Unit capabilities on the VIRGINIA Class and backfit submarines. Establish an interim chart update repository ashore to support the Navy until formal transition to NGA production. Develop and evaluate potential bandwidth reduction options for vector data products, and establish related certification requirements and procedures. Demonstrate navigation task reduction through automated chart updates by data consumers, such as certified ECDIS-N systems. Complete operational testing of developed services and web clients for release to the Fleet.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost 9C16A	1.563	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C16A Combat Control for Distributed Netted Systems			
Conduct research, design, develop and prototype an advanced submarine war fighter command and control supporting Distributed Netted System directed toward implementation in the 3rd flight or later of the VIRGINIA Class submarine program with applicability across the submarine fleet. Specific problems to be addressed in the FY08 time-frame include net-centric warfighter control and information assurance of planned and conceptual payload systems for the VIRGINIA Class payload tubes. The methodology for this development includes a detailed requirements analysis, a detailed design phase and followed by a spiral development approach which evolves the Concept of Operations (CONOPS) and technological development in parallel.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost 9C17A	0.775	0.000	0.000
RDT&E Articles Quantity	0	0	0
9C17A Oxygen Generator			
Develop and extend existing commercial efficiencies in electrolyzer design to result in a improved Low Pressure Electrolyzer (LPE) electrolysis cell that 50% cheaper than current, resulting in a potential savings of \$150M over 15 years. Existing patented low-cost cell-stack construction technology will be rugged-ized for submarine use. The improved LPE electrolysis cell has potential application in the VIRGINIA Class Integrated Low Pressure Electrolyzer (ILPE) as well the LPE being implemented in OHIO and SEAWOLF Class submarines.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604558N/NEW DESIGN SSN	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
Accomplishments/Effort/Subtotal Cost 9C18A	19.280	15.957	0.000
RDT&E Articles Quantity	0	0	0
9C18A Small Business Technology Insertion			
Research and development efforts for fresh, creative, and innovative solutions to the Navy's requirements for high risk/high reward components of submarine combat system development. Various combat system component technology insertions/upgrades (torpedo, photonics, navigation data distribution, etc.) to reduce the cost of ship acquisition.			
Accomplishments/Effort/Subtotal Cost 9A46A	FY 2008	FY 2009	FY 2010
RDT&E Articles Quantity	0.000	1.795	0.000
9A46A Large Scale Demonstration Item For Virginia Class	0	0	0
Complete efforts associated with manufacturing a composite bow dome with the objective of establishing an alternate source for submarine bow domes.			
	FY 2008	FY 2009	FY 2010
Highly Corrosive-Resistant Alloy Joining for Nuclear Applications 9D82A	0.000	0.798	0.000
RDT&E Articles Quantity	0	0	0
9D82A Highly Corrosive-Resistant Alloy Joining for Nuclear Applications			
Highly Corrosive-Resist Alloy Joining for Nuclear Applications Assist the Naval Nuclear Propulsion Program Laboratory in developing a system for packaging and sealing nuclear material in highly corrosion-resistant alloy cans for disposal.			
	FY 2008	FY 2009	FY 2010
Submarine Automated Test and Re-Test (ATRT) 9D83A	0.000	1.995	0.000
RDT&E Articles Quantity	0	0	0
9D83A Submarine Automated Test and Re-Test (ATRT)			
Submarine Automated Test and Re-Test (ATRT) Develop an application to use Automated Test and Re-Test (ATRT) technology in testing of submarine systems.			
	FY 2008	FY 2009	FY 2010
VIRGINIA Class Design Development 9D84A	0.000	2.394	0.000
RDT&E Articles Quantity	0	0	0
9D84A VIRGINIA Class Design Development			
Conduct analyses to support high priority performance issues with the outboard sonar sensors needed for ship safety/self protect. Consider engineering required for the migration of the Acoustic-Rapid COTS Insertion (ARCI) inboard processing to align with the (backfit) TI-10 baseline.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604561N/SSN-21 DEVELOPMENTS			
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	1.946	0.000	0.000				
1946 / SSN-21 DEVELOPMENT	1.946	0.000	0.000				

A. MISSION DESCRIPTION:
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. SEAFAC Range Upgrade funding is included in 1946 in FY08 - \$1.946M.

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.)

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604561N/SSN-21 DEVELOPMENTS		
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	2.403	0.000	0.000
FY10 President's Budget	1.946	0.000	0.000
Total Adjustments	-0.457	0.000	0.000
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	0.000	0.000
SBIR/STTR/FTT Assessment	0.000	0.000	0.000
Program Adjustments	-0.457	0.000	0.000
Rate/Misc Adjustments	0.000	0.000	0.000
Total	-0.457	0.000	0.000
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. & Name			
(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)			
D. 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.			
E. MAJOR PERFORMERS:			
Naval Surface Warfare Center (NSWC) Carderock, MD FY08 - \$1.946M (Acoustics and Tech Insertion).			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604561N/SSN-21 DEVELOPMENTS			PROJECT NUMBER AND NAME 1946/SSN-21 DEVELOPMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.946	0.000	0.000				
RDT&E Articles Qty	0	0	0	0	0	0	0
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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. SEAFAC Range Upgrade funding is included in 1946 in FY08 - \$1.946M. 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.)							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604561N/SSN-21 DEVELOPMENTS	PROJECT NUMBER AND NAME 1946/SSN-21 DEVELOPMENT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.671	0.000	0.000
RDT&E Articles Quantity	0	0	0
Re-engineering and correction of Ship Control System (SCS) and acoustic sail deficiencies.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.275	0.000	0.000
RDT&E Articles Quantity	0	0	0
Technology Insertion for the SSN23.			

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM		
COST (In Millions)	FY 2008	FY 2009	FY 2010	
Total PE Cost	55.128	66.364	59.703	
0236 / SSN Comb Cont Sys Imprvmnt (ENG)	52.042	58.386	59.703	
9999 / CONGRESSIONAL ADDS	3.086	7.978	0.000	
A. MISSION DESCRIPTION: Project Unit 0236: This program develops Commercial-Off-The-Shelf (COTS) based software and hardware upgrades to integrate improved tactical and weapons control capabilities for multiple submarine Classes (SSN 688I, SSGN, SEAWOLF, and VIRGINIA (Post Shakedown Availability)). The AN/BYG-1 is the combat control system common across submarine platforms which incorporates tactical control, weapon control and tactical Local Area Network (LAN) functions into a single development program. The hardware upgrades (technology insertions (TI's)) are developed on a biennial basis to provide improved capability and address COTS obsolescence. Funding also accommodates the annual integration of software Advanced Processing Builds (APBs) for 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 improved 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 torpedoes. 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, a COTS-based software weapons launch capability for Virginia Class submarines. This upgrade provides a more reliable capability for launching missiles and torpedoes from submarines while providing the architecture to support the introduction of the next generation of payloads and sensors. This new design will also reduce the recurring costs of VA Class submarine weapon launch systems. Project Units 9999 is comprised of FY08 & FY09 congressional adds for Automated Submarine Command and Control Center, Submarine Maintenance Automation and Communication System, Advanced Tactical Control System, Submarine Maintenance Automation and Communication System, Water Space Management Navigation Decision Aid and Submarine Environment for Evaluation and Development.				

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE			
RD TEN/BA 5				0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			
B. PROGRAM CHANGE SUMMARY:							
Funding:	FY 2008	FY 2009	FY 2010				
FY09 President's Budget	55.728	58.592	55.902				
FY10 President's Budget	55.128	66.364	59.703				
Total Adjustments	-0.600	7.772	3.801				
(U) Summary of Adjustments							
Congressional Rescissions	0.000	0.000	0.000				
Congressional Adjustments	0.001	-0.180	0.000				
SBIR/STTR/FTT Assessment	-0.533	0.000	0.000				
Program Adjustments	-0.068	7.990	4.753				
Rate/Misc Adjustments	0.000	-0.038	-0.952				
Total	-0.600	7.772	3.801				
C. OTHER PROGRAM FUNDING SUMMARY:							
Related RDT&E:							
PE 0204229N (Tomahawk & Tomahawk Mission Planning Center)							
PE 0205632N (MK 48 ADCAP)							
PE 0603561N (Advanced Submarine Systems Development)							
PE 0604503N (SSN-688 and Trident Modernization)							
PE 0604558N (New Design SSN)							
Line Item No. and Name	FY 2008	FY 2009	FY 2010				Total Cost
OPN/BA-4 5420	100.871	86.872	105.299				293.042
D. ACQUISITION STRATEGY:							
- This budget integrates APBs developed by the advanced development community.							
- This program has been tailored in accordance with the new DoD5000 directive to incorporate annual MDA production reviews.							
- Competitive contracts awarded in Dec 02 started the development of a combat control system which segregates tactical control from weapons control system.							
- Advanced Processing Builds (APB) products associated with AN/BYG-1 Release-To- Fleet 4Q 2003, 3Q 2004, 3Q 2006, 3Q 2007, 3Q 2008, 3Q 2009 and 3Q 2010.							
- Follow-On contracts for both tactical and weapons control subsystems are planned for award in FY2009.							

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	
E. 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 subsystem - December 2002. NUWC Newport, RI - Government Engineering Progeny Systems, Manassas, VA - Common Weapon Launcher development		

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprvmnt (ENG)
COST (In Millions)	FY 2008	FY 2009	FY 2010	
Project Cost	55.128	66.364	59.703	
RDT&E Articles Qty	0	0	0	
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project Unit 0236: This program develops Commercial-Off-The-Shelf (COTS) based software and hardware upgrades to integrate improved tactical and weapons control capabilities for multiple submarine Classes (SSN 688I, SSGN, SEAWOLF, and VIRGINIA (Post Shakedown Availability). The AN/BYG-1 is the combat control system common across submarine platforms which incorporates tactical control, weapon control and tactical Local Area Network (LAN) functions into a single development program. The hardware upgrades (technology insertions (TI's) are developed on a biennial basis to provide improved capability and address COTS obsolescence. Funding also accommodates the annual integration of software Advanced Processing Builds (APBs) for 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 improved 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 torpedoes. 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, a COTS-based software weapons launch capability for Virginia Class submarines. This upgrade provides a more reliable capability for launching missiles and torpedoes from submarines while providing the architecture to support the introduction of the next generation of payloads and sensors. This new design will also reduce the recurring costs of VA Class submarine weapon launch systems.				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprvmnt (ENG)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Advanced Processor Builds	22.189	29.395	25.030
RDT&E Articles Quantity	0	0	0
FY08: Support development of APB-09 into AN/BYG-1. Continue APB-07 integration into AN/BYG-1 baseline.			
FY09: Begin integration of APB-09 into AN/BYG-1. Complete APB-07 integration into AN/BYG-1 baseline. One capability for delivery will be the ability to operate the TOMAHAWK Weapon System at the SECRET level, while maintaining the ability to operate at the TOP SECRET level if the need arises.			
FY10: Support development of APB-11 into AN/BYG-1. Complete APB-09 integration into AN/BYG-1 baseline.			
	FY 2008	FY 2009	FY 2010
AN/BYG-1 TI-06	3.081	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY08: Complete development, integration and test of the next generation AN/BYG-1 (TI06) for SSN 688 Class submarines scheduled for delivery in FY08.			
	FY 2008	FY 2009	FY 2010
AN/BYG-1 TI-08	14.221	13.919	3.183
RDT&E Articles Quantity	0	0	0
FY08: Continue development, integration and test of the next generation AN/BYG-1 (TI08) for SSN 688/Seawolf/Virginia Class submarines scheduled for initial delivery in FY09.			
FY09: Continue development, integration and test of the next generation AN/BYG-1 (TI08) for SSN 688/Seawolf/Virginia Class submarines scheduled for initial delivery in FY09.			
FY10: Complete development, integration and test of the next generation AN/BYG-1 (TI08) for SSN 688/Seawolf/Virginia Class submarines scheduled for final delivery in FY10.			
	FY 2008	FY 2009	FY 2010
AN/BYG-1 TI-10	2.637	8.572	13.730
RDT&E Articles Quantity	0	0	0
FY08: Began engineering development process for selection and prototyping of new technologies for TI10.			
FY09: Continue development, integration and test of the next generation AN/BYG-1 (TI10) for SSN 688/SSGN/VA Class submarines. One capability for delivery will include hardware improvements to provide the Officer of the Deck improved situational awareness, particularly in the area of navigation and contact management.			
FY10: Continue development, integration and test of the next generation AN/BYG-1 (TI10) for SSN 688/SSGN/VA Class submarines.			
	FY 2008	FY 2009	FY 2010
AN/BYG-1 TI-12	0.000	0.000	2.660
RDT&E Articles Quantity	0	0	0
FY10: Begin engineering development process for selection and prototyping of new technologies.			
	FY 2008	FY 2009	FY 2010
Testing	4.000	7.000	4.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprvmnt (ENG)	
RDT&E Articles Quantity		0	0
FY08: Complete OT for AN/BYG-1 TI06 and APB-06 and begin planning for OT for AN/BYG-1 TI-08 and APB-07 on SSN 688 Class/Seawolf/VA Class submarines.			
FY09: Begin OT for AN/BYG-1 TI08 and APB-07 on 688 Class/SSGN/Seawolf/VA Class submarines.			
FY10: Complete OT for AN/BYG-1 TI08 and APB-07 on 688 Class/SSGN/Seawolf/VA Class submarines. Begin OT for AN/BYG-1 APB-09 on 688 Class/SSGN/VA Class submarines.			
	FY 2008	FY 2009	FY 2010
Information Assurance (IA)	0.000	0.000	6.100
RDT&E Articles Quantity	0	0	0
FY10: Develop and Integrate IA Toolkit and conduct IA Certification Testing on BYG-1 TI-10.			
	FY 2008	FY 2009	FY 2010
Common Weapon Launcher (CWL)	9.000	7.478	5.000
RDT&E Articles Quantity	0	0	0
FY08: Continue integration of CWL with AN/BYG-1 TI-10 on VA Class submarines.			
FY09: Continue integration of CWL with AN/BYG-1 TI-10 on VA Class submarines.			
FY10: Complete integration of CWL with AN/BYG-1 TI-10 on VA Class submarines.			

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM						PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprvmnt (ENG)			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				
Multi-Tube Weapon Simulator	SBIR	Progeny	2.635	0.000		0.000					
AN/BYG-1 Tech Insertion	CPIF/CPAF	Raytheon Portsmouth, RI	38.113	10.201	OCT-08	9.503	OCT-09				
AN/BYG-1 Tech Insertion	CPIF/CPAF	General Dynamics (GDAIS)	34.269	7.241	OCT-08	7.640	OCT-09				
Government Engineering	WX	NUWC Newport, RI	66.221	2.255	OCT-08	2.430	OCT-09				
AN/BYG-1 Tech Insertion	FFRDC	MITRE	2.429	0.000		0.000					
AN/BYG-1 Tech Insertion	CPIF/CPAF	ANTEON	6.000	0.000		0.000					
COTS Hardware & Software	CPFF	DDL Omni	8.500	0.000		0.000					
Common Weapon Launcher	CPAF	Progeny	26.892	6.500	JAN-09	5.000	JAN-10				
Information Assurance	CPAF	Progeny	0.000	0.000		6.100	JAN-10				
Subtotal Product Development			185.059	26.197		30.673					
Remarks:											
APB Software Integration	CPIF/CPAF	Raytheon Portsmouth, RI	31.553	11.460	OCT-08	10.844	OCT-09				
APB Software Integration	CPIF/CPAF	General Dynamics (GDAIS)	30.147	9.088	OCT-08	8.596	OCT-09				
APB Software Integration	WX	NUWC Newport, RI	18.541	5.847	OCT-08	5.590	OCT-09				
Software Development	Various	Various	36.679	0.000		0.000					
Subtotal Support Costs			116.920	26.395		25.030					
Remarks:											
Developmental Test & Evaluation	WX	NUWC	20.312	3.500	OCT-08	2.300	OCT-09				
Operational Test & Evaluation	WX	COMOPTEVFOR	14.469	2.500	OCT-08	1.700	OCT-09				
Test & Evaluation	Various	Various	1.295	0.000		0.000					
Subtotal Test and Evaluation			36.076	6.000		4.000					
Remarks:											
Program Management Support	CPFF	EG&G Arlington, VA	9.330	0.000		0.000					
Travel	PD	NAVSEA Arlington, VA	0.370	0.000		0.000					
Subtotal Management Services			9.700	0.000		0.000					
Remarks:											

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE		
									May 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDTEN/BA 5		0604562N/SUBMARINE TACTICAL WARFARE SYSTEM					0236/SSN Comb Cont Sys Imprvmnt (ENG)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				
Total Cost			347.755	58.592		59.703					

CLASSIFICATION:					UNCLASSIFIED									
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5					PROGRAM ELEMENT NUMBER AND NAME 0604562N / SUBMARINE TACTICAL WARFARE SYSTEM					PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprmnt (ENG)				
	Fiscal Year	2008				2009				2010				
		1	2	3	4	1	2	3	4	1	2	3	4	
	Acquisition Milestones				▲ Annual MDA Program Review				▲ Annual MDA Program Review				▲ Annual MDA Program Review	
	APB I&T, Certification				APB-09									
		APB-07											APB-11	
	Development, I&T Certification				TI-10									
		TI-08											TI-12	
	Common Weapon Launcher (CWL)													
	Test & Evaluation Milestones													
	DT / FOT&E													
	AN/BYG-1	▲	TI-06 APB-06 (DT/OT)	▲					▲	TI-08 APB-07 (DT/OT)	▲		▲ APB-09 (DT/OT)	
	Production													
		▲ Contract Award				▲ First Delivery								
						▲ Contract Award				▲ First Delivery				
										▲ Contract Award				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			PROJECT NUMBER AND NAME 0236/SSN Comb Cont Sys Imprvmnt (ENG)			
Schedule Profile		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Common Weapon Launcher - Development		1Q-4Q	1Q-4Q	1Q-4Q				
AN/BYG-1 APB07 Integration & Test, Certification		1Q-4Q	1Q					
AN/BYG-1 APB06/TI06 DT/OT		1Q-2Q						
AN/BYG-1 TI08 - Development		1Q-4Q	1Q-3Q					
AN/BYG-1 APB07/TI08 DT/OT			4Q	1Q				
AN/BYG-1 APB09 Integration & Test, Certification		4Q	1Q-4Q	1Q-3Q				
AN/BYG-1 APB09 MDA Review			4Q					
AN/BYG-1 TI10 Development		4Q	1Q-4Q	1Q-4Q				
AN/BYG-1 APB11 Integration & Test, Certification				4Q				
AN/BYG-1 APB09 DT/OT				4Q				
AN/BYG-1 TI12 Development				4Q				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9850A Automated Sub Command and Control Center	1.543	0.000	0.000
RDT&E Articles Quantity	0	0	0
The congressional add will be used to support the insertion of knowledge management and automation technologies into the AN/BYG-1 combat system modernization efforts. This additional technology will allow for a reduced number of crew members to safely perform the actions required in the submarine attack center.			
	FY 2008	FY 2009	FY 2010
9D85A Advanced Tactical Control System	0.000	1.596	0.000
RDT&E Articles Quantity	0	0	0
The congressional add automatically fuses contact data to provide the commanding officer and crew a clear and accurate tactical picture. This will enable the submarine commanding officer and crew to make better, faster tactical decision while at sea.			
	FY 2008	FY 2009	FY 2010
9D86A Submarine Environment for Evaluation and Development	0.000	2.393	0.000
RDT&E Articles Quantity	0	0	0
The congressional add will provide a low-cost test bed for industry and academia to create and evaluate innovative ideas and to integrate their products into currently deployed and conceptual systems.			
	FY 2008	FY 2009	FY 2010
9D87A Water Space Management Navigation Decision Aid	0.000	2.393	0.000
RDT&E Articles Quantity	0	0	0
The congressional add will provide a navigational decision aide and message editor that automatically drafts standard US Navy submarine planning and asset assignment messages (e.g., SUBNOTES, OPSKDS, MODUS) for transmission, and also converts these messages into 2-dimensional and 3-dimensional graphic renderings of an asset's waterspace for enhanced navigational awareness and contact avoidance.			
	FY 2008	FY 2009	FY 2010
9A50A Sub Maintenance Automation and Communication	1.543	1.596	0.000
RDT&E Articles Quantity	0	0	0
The congressional add will be used to expand the Submarine Maintenance Free Operating Period (MFOP) effort, designed to automate scheduled preventive maintenance events, potentially reducing the weekly allocation of man-hours dedicated to maintenance.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			
COST (In Millions)		FY 2008	FY 2009	FY 2010			
Total PE Cost		61.528	80.869	89.988			
1803 / SHIP CONTRACT DESIGN		4.619	4.749	8.398			
2465 / DC/Survivability		5.756	2.397	6.303			
3133 / Sea Base to Shore Connectors (Contract Des)		14.199	26.083	35.475			
3179 / CVN-79 Total Ship Integration		26.198	37.385	37.436			
4007 / CVN 21 LFT&E		3.104	2.062	2.376			
4008 / CVN 78 Total Ship Integration		6.689	0.000	0.000			
9999 / Congressional Add		0.963	8.193	0.000			
A. MISSION DESCRIPTION: This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of engineering, programmatic and acquisition documentation including ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This PE also supports the Congressionally mandated Live Fire Test and Evaluation (LFT&E) 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:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	62.068	72.932	63.830
FY10 President's Budget	61.528	80.869	89.988
Total Adjustments	-0.540	7.937	26.158
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	-0.220	0.000
SBIR/STTR/FTT Assessment	-0.540	0.000	0.000
Program Adjustments	0.000	8.189	27.453
Rate/Misc Adjustments	0.000	-0.032	-1.295
Total	-0.540	7.937	26.158

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.619	4.749	8.398				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports development of all technical, programmatic and contractual documentation required for the acquisition of various ships in the Navy's Shipbuilding Program. The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the prospective shipbuilder to make a sound estimate of construction cost and schedule. It also serves as the technical definition from which the shipbuilder develops the shipbuilding detailed design and testing package required to build and test the ship. This funding also provides for Navy retention of unique ship design knowledge. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned Navy ship. This data base will serve as the basis to evaluate and qualify any future ship design. Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which will serve for the future acquisition of Navy Ship and supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions. This project also funds the research, development, test, and evaluation of shipyard workload and resource management tools. The funding in this project unit supports Cruiser Modernization Program. The DDG Modernization Program efforts begin in FY10.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.619	4.749	8.398
RDT&E Articles Quantity	0	0	0
-FY08-Continued CG Modernization design and engineering efforts, including, but not limited to: Planning Yard Corrosion Reduction Studies, Brass Model Studies, Fuel Oil Tank and superstructure cracking studies, Integrated Recoverability Model studies, Air Warfare Soft Kill Analyses, White Sands Missile Range MK 99 Fire Control System (FCS) development, AN/SQQ-89 (V) Engineering Change Proposal development for Mod 4A/6 to MK 116 Mod 7 upgrade, and PNCC Risk Mitigation studies. -FY09-Continued CG Modernization design and engineering efforts, the completion of Engineering Change Proposal development for AN/SQQ-89 (V) Mod 4A/6 to MK 116 Mod 7 upgrade, and the continuation of, but not limited to: Primary Damage Modeling Studies, Planning Yard Corrosion Reduction Studies, Brass Model Studies, and PNCC Risk Mitigation studies. FY 10-For Cruisers, specific efforts include, but are not limited to Technical Data Package development, Detailed Design Products, Engineering Analysis, feasibility studies, and topside analysis, related to the next generation Advanced Capability Baseline (ACB-12). For DDGs, specific efforts are related to Gun Computing System (GCS) development for the MK 45 interface to a digital MK 116 Gun Computing System.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN 090000/05 DDG Modernization	52.694	165.008	142.262
OPN 096000 CG Modernization	216.031	165.165	315.323
WPN 422300 CG Modernization	23.402	30.023	51.227
D. ACQUISITION STRATEGY:			
N/A			
E. MAJOR PERFORMERS:			
N/A			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
CG Mod Electronics Systems Eng	C/CPAF	Lockheed Martin, Moorestown, NJ	10.266			0.000		0.000			10.266	0.000
Subtotal Product Development			10.266			0.000		0.000			10.266	0.000
Remarks:												
CGM Program / Engineering Spt	MISC	NSWC/DD	2.206			0.645	Nov-09	0.635	Nov-09		3.906	0.000
CGM Program / Engineering Spt	MAC	CSC/BAE	3.253			0.791	Nov-09	0.779	Nov-09		5.580	0.000
CGM Program / Engineering Spt	MISC	SPAWARSSYSCEN	0.330			0.030	Nov-09	0.030	Nov-09		0.690	0.000
CGM Program / Engineering Spt	MISC	NRL	0.250			0.025	Nov-09	0.025	Nov-09		0.550	0.000
CGM Program / Engineering Spt	MAC	JJMA/ALION	0.968			0.675	Nov-09	0.665	Nov-09		3.215	0.000
CGM Program / Engineering Spt	MISC	NSWC/PHD	1.831			0.000	Nov-09	0.000	Nov-09		2.475	0.000
CGM Program / Engineering Spt	MISC	NSWC/BETHESDA	0.315			0.450	Nov-09	0.443	Nov-09		2.223	0.000
CGM Program / Engineering Spt	MISC	SUPSHIP/PASCAGOULA	1.010			0.939	Nov-09	0.925	Nov-09		3.170	0.000
CGM Program / Engineering Spt	MISC	COMOPTEVFOR	0.030			0.000	Nov-09	0.000	Nov-09		0.060	0.000
CGM Program / Engineering Spt	MISC	NSWC/SSSES	1.480			0.769	Nov-09	0.758	Nov-09		3.007	0.000
CGM Program / Engineering Spt	MAC	L3	0.000			0.425	Nov-09	0.419	Nov-09		0.844	0.000
DDGM Program / Engineering Spt	MISC	NSWC Dahlgren	0.000			0.000	Nov-09	3.719	Nov-09		3.719	0.000
Subtotal Support Costs			11.673			4.749	Nov-09	8.398	Nov-09		29.439	0.000
Remarks:												
Total Cost			21.939	4.619		4.749		8.398			39.705	0.000

CLASSIFICATION:										UNCLASSIFIED																							
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009													
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E										PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN													
Fiscal Year	2008				2009				2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Acquisition Milestones																																	
CG Baseline 2 Contract Design																																	
CG Baseline 3 Contract Design																																	
CG Baseline 4 Contract Design																																	
DDG Mod Contract Design																																	
Test & Evaluation Milestones																																	
Production Milestones CG Modernization: System Procurement Awards																																	
Deliveries	1				2					2																							
Production Milestones DDG Modernization: System Procurement Awards																																	
Deliveries																																	

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 1803/SHIP CONTRACT DESIGN		
Schedule Profile		FY 2008	FY 2009	FY 2010			
CONTINUE CGM BASELINE 2 ENGINEERING		1Q-4Q	1Q-2Q				
CONTINUE CGM BASELINE 3 ENGINEERING		1Q-4Q	1Q-4Q	1Q-4Q			
DDGM ENGINEERING				1Q-4Q			
CGM PROCUREMENT AWARD		1Q	1Q	1Q			
DDGM PROCUREMENT AWARD				1Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 2465/DC/Survivability		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	5.756	2.397	6.303				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides the contract design, development and testing efforts for the Amphibious Assault Ship Replacement Program LHA(R), a ship construction program designed to: provide a functional replacement for the LHA 1 Class ships which will reach the end of their extended service lives after FY10; be a key platform in the Expeditionary Strike Group (ESG) of the future and 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, inter agency, and multi-national maritime expeditionary forces. Additionally, LHA(R) 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 (MV-22) and tilt rotors supported by Joint Strike Fighters (F-35B).							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 2465/DC/Survivability	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
LHA(R)	5.756	2.397	6.303
RDT&E Articles Quantity	0	0	0
FY08 Accomplishments Revised the Vulnerability Assessment Report (VAR). Continued LFT&E Surrogate Testing. Continued evaluating interoperability data supporting Key Performance Parameters (KPP). Plans FY09: Deliver the Survivability Assessment Report (SAR) to OSD. Finalize updates to the TEMP and submit to OSD. Finalize updates to the LFT&E Management Plan to OSD. Continue revising the Vulnerability Assessment Report (VAR). Complete LFT&E surrogate testing. Continue evaluating the interoperability data supporting Key Performance Parameters (KPP). Continue developing LHA 7 contract technical package; anticipate 4th quarter FY09 RFP. Continue LHA 8 Concept studies. FY10 Submit LHA 6 VAR Continue evaluating the interoperability data supporting Key Performance Parameters (KPP). Continue preparation Continue LHA 8 Concept studies. Continue OPEVAL and TECHEVAL Development preparations for LHA 6			

CLASSIFICATION:	UNCLASSIFIED																																																									
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009																																																		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 2465/DC/Survivability																																																					
C. OTHER PROGRAM FUNDING SUMMARY: SCN funding provides functional replacement ships for the LHA 1 Class which will reach the end of their extended service lives after FY10. In addition, Advanced Procurement for the LHA 7 is provided with SCN funds in FY09. The RD TEN 9D88A transfer from NDSF develops the LHA 7 contract technical package incorporating Fact of Life changes from the LHA 6; anticipate 1st quarter FY 10 RFP Release for Advance Procurement LLTM. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">Line Item No. and Name</th> <th style="width: 10%;">FY 2008</th> <th style="width: 10%;">FY 2009</th> <th style="width: 10%;">FY 2010</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>SCN 3041 LHA(R) Ships</td> <td style="text-align: right;">1,365.785</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">1,365.785</td> </tr> <tr> <td>SCN Advanced Procurement - LHA 7</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">177.767</td> <td style="text-align: right;">0.000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">177.767</td> </tr> <tr> <td>Programs - LHA 6</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">14.310</td> <td style="text-align: right;">0.000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">14.310</td> </tr> <tr> <td>RD TEN 9D88A/Transfer LHA(R) from NDSF</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">5.400</td> <td style="text-align: right;">0.000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">5.400</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Acquisition strategy signed February 7, 2005 approved strategy for sole source to Northrop 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 on 1 June 2007. The Advance Procurement contract was subsumed by the FPI DD&C contract. Acquisition strategy for LHA 7 is being developed. E. MAJOR PERFORMERS: NGSB - 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.									Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost	SCN 3041 LHA(R) Ships	1,365.785	0.000	0.000						1,365.785	SCN Advanced Procurement - LHA 7	0.000	177.767	0.000						177.767	Programs - LHA 6	0.000	14.310	0.000						14.310	RD TEN 9D88A/Transfer LHA(R) from NDSF	0.000	5.400	0.000						5.400
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost																																																	
SCN 3041 LHA(R) Ships	1,365.785	0.000	0.000						1,365.785																																																	
SCN Advanced Procurement - LHA 7	0.000	177.767	0.000						177.767																																																	
Programs - LHA 6	0.000	14.310	0.000						14.310																																																	
RD TEN 9D88A/Transfer LHA(R) from NDSF	0.000	5.400	0.000						5.400																																																	

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 2465/DC/Survivability					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Ship Design	Various	Various	86.559			0.000		1.317			87.876	0.000
Subtotal Product Development			86.559			0.000		1.317			87.876	0.000
Remarks:												
Subtotal Support Costs			0.000			0.000		0.000			0.000	0.000
Remarks:												
Developmental Test & Evaluation	Reimb	Various	2.103			0.400	OCT-08	0.400			2.903	0.000
Operational Test & Evaluation	Reimb	COMOPTEVOR	3.153			0.648	OCT-08	1.454			5.255	0.000
Live Fire Test & Evaluation	Reimb	Various	37.163			1.300	OCT-08	2.900			41.363	0.000
Subtotal Test and Evaluation			42.419			2.348		4.754			49.521	0.000
Remarks:												
Program Management			0.000			0.049		0.232			0.281	0.000
Subtotal Management Services			0.000			0.049		0.232			0.281	0.000
Remarks:												
Total Cost			128.978			2.397		6.303			137.678	0.000

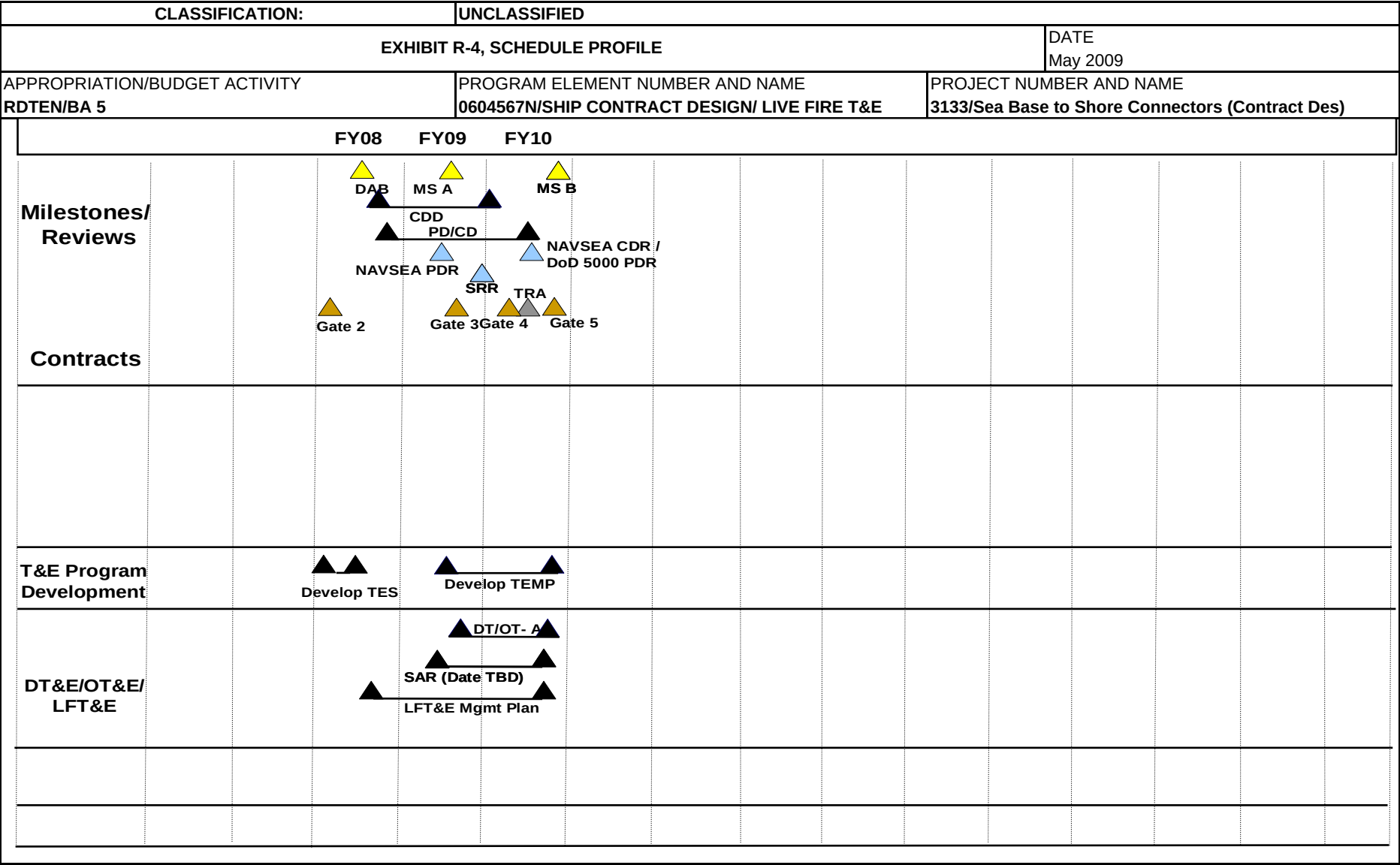
CLASSIFICATION:				UNCLASSIFIED									
EXHIBIT R-4, SCHEDULE PROFILE												DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E						PROJECT NUMBER AND NAME 2465/DC/Survivability			
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
<u>Milestones</u>													
Developmental Testing													
Operational Testing													
Vulnerability Assessment Report (VAR)												△	
Contract Design				△									
Survivability Assessment Record (SAR)				△									
Surrogate Testing				△									
TEMP Update				△									
LFT&E Management Plan				△	Update								
LHA 7 RFP									△				
LHA 7 DD&C Award													

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 2465/DC/Survivability		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Developmental Testing		1Q-4Q	1Q-4Q	1Q-4Q			
Contract Design			1Q-4Q	1Q-4Q			
Operational Testing		1Q-4Q	1Q-4Q	1Q-4Q			
Vulnerability Assessment Report (VAR)		1Q-4Q	1Q-4Q	1Q-4Q			
Survivability Assessment Report (SAR)		1Q-4Q					
Surrogate Testing		1Q-4Q					
TEMP Update		1Q-4Q					
LFT&E Update to Management Plan		1Q-4Q					
LHA 7 RFP for Advanced Procurement		1Q-4Q	1Q-4Q	1Q			
LHA 7 DD&C Award		1Q-4Q	1Q-4Q	1Q-4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	14.199	26.083	35.475				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (3133) Sea Base to Shore Connector- This program will meet the requirements of the Navy's Sea Base to Shore Connector initiatives and will provide an Over-the-Horizon, ship to objective amphibious lift capability as well as the capability to move across the beach. This project provides for the Systems Development and Demonstration package required for the solicitation for detail design/construction and test of the initial article. Test and evaluation of components and systems will also be completed under this project.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Accomplishments/Effort/Subtotal Cost		14.199		26.083		35.475			
RDT&E Articles Quantity		0		0		0			
(FY08) - Efforts included a Milestone A Review, preparation of Capability Development Document (CDD) and initiated Preliminary Design efforts for the lead craft which will be procured with RDT&E. Also includes continuation of the SSC Class Test and Evaluation Program. (FY09-10) - Continue Preliminary Design efforts and conduct set-based design and follow-on integrated design studies. Milestone A DAB Review will be conducted after completion of Preliminary Design Review planned for Apr 09. Develop prototyping plans with attention to weight in the design. Complete development and implementation of initiatives in preparation for the award of the Detail Design and Construction Contract. Also includes continuation of Class Test and Evaluation program.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					Total Cost
RDT&EN PE 0603564N (3217) / Ship Preliminary Design		12.792	0.000	0.000					12.792
D. ACQUISITION STRATEGY: The lead craft will be procured and constructed with RDT&E funds. The lead craft Detail Design contract will include an option for construction. E. MAJOR PERFORMERS: Field Activities & Locations - Work Performed NSWC Carderock, Bethesda, MD Systems Engineering NSWC Panama City, FL Systems Engineering Contractors & Locations - Work Performed TBD Universities & Locations - Work Performed TBD									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 3133/Sea Base to Shore Connectors (Contract Des)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Ship Design	CPFF	Various	1.785			3.702	JAN-09	3.886	OCT-09		9.373	0.000
Systems Engineering	CPFF	Various	1.900			3.200	JAN-09	3.225	OCT-09		8.325	0.000
Preliminary/Contract Design	VAR	Various	4.391			10.458	VAR	17.928	VAR		32.777	0.000
Subtotal Product Development			8.076			17.360		25.039			50.475	0.000
Remarks:												
Developmental Support	WX	Various	1.300			1.450	VAR	1.494	VAR		4.244	0.000
Software Development	CPFF	Various	0.700			1.000	VAR	1.000	VAR		2.700	0.000
Integrated Logistics Support	CPFF	Various	0.275			0.500	VAR	0.515	VAR		1.290	0.000
Studies & Analyses	FFP	Various	0.769			0.800	VAR	0.824	VAR		2.393	0.000
Subtotal Support Costs			3.044			3.750		3.833			10.627	0.000
Remarks:												
Developmental Test & Evaluation	CPFF	Various	0.000			0.000		0.049	OCT-09		0.049	0.000
Operational Test & Evaluation	CPFF	Various	0.165			0.453	VAR	0.555	OCT-09		1.173	0.000
Live Fire Teat & Evaluation	CPFF	Various	0.155			0.477	VAR	1.352	OCT-09		1.984	0.000
Subtotal Test and Evaluation			0.320			0.930		1.956			3.206	0.000
Remarks:												
Contractor Engineering Support	CPFF	Various	1.109			1.412	JAN-09	1.725	OCT-09		4.246	0.000
Gov't Engineering Support	WX	NSWC	0.900			1.250	VAR	1.400	VAR		3.550	0.000
Program Management Support	CPFF	Various	0.750			1.281	JAN-09	1.422	OCT-09		3.453	0.000
Travel	TO	NAVSEA Travel	0.000			0.100	VAR	0.100	VAR		0.200	0.000
Subtotal Management Services			2.759			4.043		4.647			11.449	0.000
Remarks:												
Total Cost			14.199			26.083		35.475			75.757	0.000



CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RD TEN/BA 5		0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			3133/Sea Base to Shore Connectors (Contract Des)		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Acquisition Milestones (DAB, Milestone A &B)		3Q	3Q	4Q			
Capability Development Document (CDD)		3Q-4Q	1Q-2Q				
Preliminary Design/Contract Design (PD/CD)		3Q-4Q	1Q-----4Q	1Q---3Q			
Preliminary Design Review (PDR)			2Q				
System Readiness Review (SRR)			4Q				
Technology Readiness Assessment (TRA)				2Q			
T&E Program Development		3Q-4Q	1Q-----4Q	1Q---3Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	26.198	37.385	37.436				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Development and related testing of CVN 78 Class aircraft carrier specific technologies, the infusion of the ship technology base into existing and future aircraft carriers, and the potential realization of subsystem design capabilities not currently feasible. This project also funds the Contract Design efforts for the CVN 79. This project transitions the minimum sustaining technologies required to address obsolescence, critical survivability shortfalls as identified in CVN 78 Class testing, future requirements, and technologies which did not mature in time to support the CVN 78. All systems developed in this project have the potential to support emerging requirements and other promising systems technologies for insertion into new aircraft carrier designs. The emphasis is directed toward developing ship hull, mechanical, propulsion, electrical, aviation, warfare systems, and combat support systems, sub-systems and components to maintain aircraft carrier affordability, manpower requirements, survivability, and operational capabilities and to meet the requirements of existing and pending regulations and statutes critical to the operation of future aircraft carriers. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 79 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.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	26.198	37.385	37.436
RDT&E Articles Quantity	0	0	0
(U) CVN 78 Class Follow Ship Total Ship Integration: The CVN 79 will incorporate advanced technologies to support efforts to address obsolescence, technology refresh, critical survival improvements, as well as continued improvements in manpower reduction and weight savings. CVN 79 Total Ship Integration (TSI) will be accomplished through an IPPD contract with Northrop Grumman Ship Building-Newport News to incorporate technology advancements into the CVN 78 Class baseline design. TSI efforts are focused on continued activities that integrate and optimize systems arrangements and design to maintain the Key Performance Parameters (KPPs) for weight and kg/service life allowance to the ORD threshold values. CVN 79 design efforts will provide required program management and logistics support. (FY08): CVN 79 efforts will continue to reduce the ship acquisition cost through the establishment of the CVN 79 initial cost estimate supported by process initiatives, material selections, and lessons learned from the CVN 78 activities will be studied and analyzed to support the development of the CVN 78 Class planning yard and life cycle support plan. Efforts also encompass those tasks required to support CVN 79 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). (FY09): Follow on efforts established under CVN 79 IPPD Contract will transition for further development under the CVN 79 Construction Preparation Contract. CVN 78 Class testing, future requirements and other promising systems which did not mature in time for the CVN 78 will continue to be studied and reviewed. Efforts also encompass those tasks required to support CVN 79 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). (FY10) : Continue efforts to identify, develop and implement initiatives to address obsolescence and cost reductions during the CVN 79 Construction Preparation Contract. Efforts also encompass those tasks required to support CVN 79 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).			

CLASSIFICATION:	UNCLASSIFIED																																														
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)																																															
DATE May 2009																																															
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration																																										
C. OTHER PROGRAM FUNDING SUMMARY: *Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603570N (PU 2692). *Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603512N (PU 2208, 4004, 9B57A, 9B58A, 9D24A). <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="width: 30%;">Line Item No. and Name</th> <th style="width: 10%;">FY 2008</th> <th style="width: 10%;">FY 2009</th> <th style="width: 10%;">FY 2010</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;">Total Cost</th> </tr> <tr> <td>SCN: 200100 Carrier replacement Program</td> <td style="text-align: right;">3,145.026</td> <td style="text-align: right;">3,915.642</td> <td style="text-align: right;">1,223.701</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">8,284.369</td> </tr> <tr> <td>PE 0603512N Carrier System Development</td> <td style="text-align: right;">83.238</td> <td style="text-align: right;">144.024</td> <td style="text-align: right;">152.077</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">379.339</td> </tr> <tr> <td>PE 0603570N Adv. Nuclear Power Systems</td> <td style="text-align: right;">111.401</td> <td style="text-align: right;">102.855</td> <td style="text-align: right;">82.575</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">296.831</td> </tr> </table> D. ACQUISITION STRATEGY: The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class. 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 war fighting 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. E. MAJOR PERFORMERS: Northrop Grumman Ship Building-Newport News, Newport News, VA, Design / Component Development / Construction Naval Surface Warfare Center, Carderock, MD, Technology Design & Development Naval Surface Warfare Center, Dahlgren, Virginia, Technology Design & Development								Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost	SCN: 200100 Carrier replacement Program	3,145.026	3,915.642	1,223.701						8,284.369	PE 0603512N Carrier System Development	83.238	144.024	152.077						379.339	PE 0603570N Adv. Nuclear Power Systems	111.401	102.855	82.575						296.831
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost																																						
SCN: 200100 Carrier replacement Program	3,145.026	3,915.642	1,223.701						8,284.369																																						
PE 0603512N Carrier System Development	83.238	144.024	152.077						379.339																																						
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CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE			
									May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDTEN/BA 5		0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					3179/CVN-79 Total Ship Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Total Ship Integration	CPAF	NGSB-NN	10.600			17.000	DEC-08	17.000	DEC-09		44.600	0.000
	WR	NSWC Carderock	2.240			7.448	OCT-08	4.868	OCT-09		14.556	0.000
	WR	NSWC Dahlgren	2.510			0.943	OCT-08	2.990	OCT-09		6.443	0.000
	WR	NAWCAD Pax River	1.155			0.377	OCT-08	0.382	OCT-09		1.914	0.000
	WR	SPAWAR	1.525			0.600	OCT-08	0.600	OCT-09		2.725	0.000
	CPFF	NAVSEA SEAPORT	3.910			5.539	DEC-08	5.667	DEC-09		15.116	0.000
	CPAF	RAYTHEON	0.000			0.000		2.263	DEC-09		2.263	0.000
	WR	NAVSEA, PMS 320	1.000			0.500	OCT-08	0.000			1.500	0.000
	WR	SSC, CHARLESTON	0.233			0.000		0.000			0.233	0.000
	CPFF	SAIC	0.000			0.551	DEC-08	0.000			0.551	0.000
	Various	Miscellaneous	3.025			4.037	DEC-08	3.066	DEC-09		CONT	0.000
Developmental Test & Evaluation	WR	NSWC Carderock	0.000			0.390	OCT-08	0.600	OCT-09		0.990	0.000
Subtotal Product Development			26.198			37.385		37.436			CONT	0.000
Remarks:												
Total Cost			26.198			37.385		37.436			CONT	0.000

CLASSIFICATION:										UNCLASSIFIED																						
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E										PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration												
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones				CVN 78 DAB PR △																												
Propulsion Plant																																
EMALS			TRR 1 △			TRR 2 △			LRIP △																							
Advanced Arresting Gear									TRR 1 △																							
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Operational Assessments																																
Contract Milestones																																
IPPD Contract																																
CP Contract																																
Construction Contract				CVN 78 Construction Contract Award △					CVN 79 CP Contract Award △																							
Full Funding (SCN)	X CVN 78																															

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 3179/CVN-79 Total Ship Integration			
Schedule Profile		FY 2008	FY 2009	FY 2010				
CVN 78 DAB PR		4Q						
Developmental Tests DT-B1		1-4Q	1-4Q					
Operational Tests OT-B2		1-4Q	2Q					
EMALS TRR 1(HALT/HCT)		3Q						
AAG TRR 1 (IT)				1Q				
CVN 78 Construction Contract Award		4Q						
CVN 78 SCN Full Funding		1Q						
Developmental Tests DT-B2			4Q	1-4Q				
Operational Tests OT-B3				1-4Q				
EMALS TRR 2 (DT/OA)			3Q					
EMALS LRIP			4Q	1Q				
Operational Tests Readiness Reviews		2Q		1Q				
Operational Assessments			2-3Q					
CVN 79 CP Contract Award			2Q					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	3.104	2.062	2.376				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project encompasses Live Fire Test and Evaluation (LFT&E) efforts for the CVN78 Class. Title 10, US Code, Section 2366, CVN 21 Operational Requirements Document (ORD) and the CVN 21 Test and Evaluation Master Plan (TEMP) , prescribe requirements for 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 unit cost of the CVN 78 Class and its shipboard systems preclude consideration of destructive testing of a full-up CVN 78 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 78 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 Vulnerability Assessment Report (VAR) is the key document that addresses these issues for the CVN 78 LFT&E Program. The LFT&E strategy for the CVN78 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 CVN78 will increase and so will the ability to evaluate its survivability. The VAR 3 was officially completed in the summer of 2007. The VAR 3 update is scheduled to be completed in FY 12 and will incorporate the CVN 78 design drawings.							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E				PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E				
B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
					FY 2008		FY 2009		FY 2010	
Accomplishments/Effort/Subtotal Cost					3.104		2.062		2.376	
RDT&E Articles Quantity					0		0		0	
(U) FY 08: Focusing on improving the computer models through the Verification, Validation, and Accreditation (VV&A) process used in survivability assessments of the CVN 78 Class. Continuing the resolve low confidence areas in analytical models for LFT&E concerns. This includes the improvements to the fidelity of the Finite Element Modeling (FEM)/Dynamic System Mechanics Advanced Simulation (DYSMAS) models. Continue analytical bridge work between the scaled model test results and the analytical correlations. Initiated the CVN 21 VAR #3 UPDATE which will include any survivability modeling improvements. Commenced susceptibility modeling to develop prescribed hit points from shot selection list. Developing a multi-year FSST alternative method to replace the FSST shock event. (U) FY 09: Update the CVN 21 Management Plan. Continue VAR #3 UPDATE to include any survivability modeling improvements. Finalize DYSMAS VV&A. Continue preparing susceptibility models for VAR #3 UPDATE. Begin the Damaged Scenario Based Engineering Analyses (DSBEA). Conduct LFT&E surrogate test to any new and emerging threats identified in updates to the Capstone Ship Threat Assessment (CSTA) by Office of Naval Intelligence (ONI). Plan and conduct tasks necessary to fulfill the FSST alternative Memorandum of Agreement (MOA) requirements. Update LFT&E Management Plan to include FSST alternative. (U) FY 10: Continue CVN 21 VAR #3 UPDATE by finalizing the models and continuing the DSBEA. Continue any LFT&E surrogate tests including any new and emerging threats identified in updates to the CSTA by ONI. Plan/conduct VV&A of selected susceptibility codes for VAR #3 UPDATE. Plan and conduct tasks necessary to fulfill the FSST alternative Memorandum of Agreement (MOA) requirements. Commence update of LFT&E Management Plan, from Rev A to Rev B by specifically addressing any changes to strategy for CVN 79/80.										
C. OTHER PROGRAM FUNDING SUMMARY:										
*Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603570N (PU 2692).										
*Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603512N (PU 2208, 4004, 9B57A, 9B58A, 9D24A).										
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost	
BLI 200100 Carrier Replacement Program	3,145.026	3,915.642	1,223.701						8,284.369	
PE 0603512N Carrier System Development	83.238	144.024	152.077						379.339	
PE 0603570N Adv. Nuclear Power Systems	111.401	102.855	82.575						296.831	
D. ACQUISITION STRATEGY:										
The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class. 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,										

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E
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 war fighting 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. E. MAJOR PERFORMERS: NSWC Carderock Maryland; NSWC Carderock, Philadelphia Pennsylvania; NGSB, Newport News Virginia		

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E					PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Live Fire Test & Evaluation	WR	NSWC Carderock	37.212			1.214	OCT-08	1.403	OCT-09		CONT	0.000
	CPAF	NGSB-NN	6.521			0.700	NOV-08	0.800	NOV-09		8.021	0.000
	WR	Miscellaneous	0.134			0.148	DEC-08	0.173	DEC-09		0.455	0.000
Subtotal Test and Evaluation			43.867			2.062		2.376			CONT	0.000
Remarks:												
Total Cost			43.867			2.062		2.376			CONT	0.000

CLASSIFICATION:				UNCLASSIFIED																												
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5								PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E								PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E																
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones			CVN 78 DAB PR △																													
Propulsion Plant	■																															
EMALS			TRR 1 △			TRR 2 △		LRIP △																								
Advanced Arresting Gear								TRR 1 △																								
Test & Evaluation Milestones																																
Development Test	DT B1 ■												DT B2 ■																			
Operational Test	OTR OT B2 ▽												OTR OT B3 ▽																			
Operational Assessments								△																								
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CP Contract			CVN 78 Construction Contract Award △			CVN 79 CP Contract Award △																										
Construction Contract																																
Full Funding (SCN)	X CVN 78																															

CVN 78

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 4007/CVN 21 LFT&E			
Schedule Profile		FY 2008	FY 2009	FY 2010				
CVN 78 DAB PR		4Q						
Developmental Tests DT-B1		1-4Q	1-4Q					
Operational Tests OT-B2		1-4Q	1-2Q					
EMALS TRR 1(HALT/HCT)		3Q						
AAG TRR 1 (IT)				1Q				
CVN 78 Construction Contract Award		4Q						
CVN 78 SCN Full Funding		1Q						
Developmental Tests DT-B2			4Q	1-4Q				
Operational Tests OT-B3				1-4Q				
EMALS TRR 2 (DT/OA)			3Q					
EMALS LRIP			4Q	1Q				
Operational Test Readiness Reviews		2Q		1Q				
Operational Assessments			2-3Q					
CVN 79 CP Contract Award			2Q					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E			PROJECT NUMBER AND NAME 4008/CVN 78 Total Ship Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	6.689	0.000	0.000				
RDT&E Articles Qty	0	0	0				
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 78 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.							

CLASSIFICATION:	UNCLASSIFIED																																										
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009																																								
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 4008/CVN 78 Total Ship Integration																																									
B. ACCOMPLISHMENTS/PLANNED PROGRAM:																																											
	FY 2008	FY 2009	FY 2010																																								
Accomplishments/Effort/Subtotal Cost	6.689	0.000	0.000																																								
RDT&E Articles Quantity	0	0	0																																								
(U) FY08: 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 for the FY08 Construction Contract Award. Closeout the construction preparation contract component development process and continue remaining component development under the CVN-78 Construction Contract. C. OTHER PROGRAM FUNDING SUMMARY: *Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603570N (PU 2692). *Note: Only the portion of funding related to the CVN 78 Class Program is included for PE 0603512N (PU 2208, 4004, 9B57A, 9B58A, 9D24A). <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Line Item No. and Name</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Total Cost</th> </tr> <tr> <td>BLI 200100 Carrier Replacement Program</td> <td style="text-align: right;">3,145.026</td> <td style="text-align: right;">3,915.642</td> <td style="text-align: right;">1,223.701</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">8,284.369</td> </tr> <tr> <td>PE 0603512N Carrier System Development</td> <td style="text-align: right;">83.238</td> <td style="text-align: right;">144.024</td> <td style="text-align: right;">152.077</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">379.339</td> </tr> <tr> <td>PE 0603570N Adv. Nuclear Power Systems</td> <td style="text-align: right;">111.401</td> <td style="text-align: right;">102.855</td> <td style="text-align: right;">82.575</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">296.831</td> </tr> </table> D. ACQUISITION STRATEGY: The CVN 78 will be the first ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class. 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 war fighting 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. E. MAJOR PERFORMERS: Northrop Grumman Ship Building - Newport News, Newport News, VA, Design / Component Development / Construction Naval Surface Warfare Center, Carderock, MD, Technology Design & Development Naval Surface Warfare Center, Dahlgren, Virginia, Technology Design & Development				Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost	BLI 200100 Carrier Replacement Program	3,145.026	3,915.642	1,223.701						8,284.369	PE 0603512N Carrier System Development	83.238	144.024	152.077						379.339	PE 0603570N Adv. Nuclear Power Systems	111.401	102.855	82.575						296.831
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BLI 200100 Carrier Replacement Program	3,145.026	3,915.642	1,223.701						8,284.369																																		
PE 0603512N Carrier System Development	83.238	144.024	152.077						379.339																																		
PE 0603570N Adv. Nuclear Power Systems	111.401	102.855	82.575						296.831																																		

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604567N/SHIP CONTRACT DESIGN/ LIVE FIRE T&E	PROJECT NUMBER AND NAME 9999/Congressional Add	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9C20A/Automated Fiber Optic Manufacturing Initiative	0.963	2.793	0.000
RDT&E Articles Quantity	0	0	0
Production of a fully automated factory work cell that will function as an assembly center of excellence in support of the aircraft carrier construction/overhaul and Virginia Class Submarine programs. The resulting capabilities will allow the shipbuilding industry to produce factory terminated fiber optic cable assemblies/systems utilizing an efficient cost structure generating millions of dollars in shipbuilding program cost savings. The program will address the issue of field installation, field repair, and maintenance by extracting the technologies of the automated manufacturing line and inserting these technologies and process in small, portable, maintenance equipment that can be used by ship construction and ship's force personnel.			
	FY 2008	FY 2009	FY 2010
9D88A/Transfer LHA(R) from NDSF	0.000	5.400	0.000
RDT&E Articles Quantity	0	0	0
Develop LHA 7 contract technical package incorporating Fact of Life changes from the LHA 6; anticipate 1st quarter FY 10 RFP Release for Advance Procurement LLTM.			

CLASSIFICATION:		UNCLASSIFIED																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																												
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				R-1 ITEM NOMENCLATURE 0604574N/NAVY TACTICAL COMPUTER RESOURCES																															
COST (In Millions)				FY 2008	FY 2009	FY 2010																													
Total PE Cost				0.000	0.000	4.620																													
1353 / Standard Hardware				0.000	0.000	4.620																													
A. MISSION DESCRIPTION: The AN/UYQ-70(V) program initially incorporated 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 product baseline was designed to increase capability in order to satisfy the needs of future FORCEnet network-centric Open Architecture combat system designs. The Common Processing System (CPS) and Common Display System (CDS) are being executed to bring the Open Architecture hardware utilization started with the AN/UYQ-70(V) product line into a common configuration in a competitive sourcing environment. The Common Processing System (CPS) provides the computer processing and memory, data storage and extraction, and Input/Output (I/O) interface to support hosting Navy combat system software applications and management of computing resources in support of the AEGIS Modernization program. The Common Display System (CDS) provides common human machine interface (Combat Information Center (CIC) consoles and remote displays) to the Aegis Open Architecture (OA) computing environment and provide war fighter team situational awareness in support of the AEGIS Modernization program. CDS and CPS technical replacements of obsolete AN/Q-70 display and processing equipment supporting multiple platforms including AEGIS Destroyers and Cruisers undergoing modernization. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Funding:</td> <td style="text-align: center;">FY 2008</td> <td style="text-align: center;">FY 2009</td> <td style="text-align: center;">FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">4.620</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">4.620</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Program Adjustments</td> <td></td> <td></td> <td style="text-align: center;">4.620</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">4.620</td> </tr> </table> C. OTHER PROGRAM FUNDING SUMMARY: N/A D. ACQUISITION STRATEGY: N/A								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	0.000	0.000	0.000	FY10 President's Budget	0.000	0.000	4.620	Total Adjustments	0.000	0.000	4.620	(U) Summary of Adjustments				Program Adjustments			4.620	Total	0.000	0.000	4.620
Funding:	FY 2008	FY 2009	FY 2010																																
FY09 President's Budget	0.000	0.000	0.000																																
FY10 President's Budget	0.000	0.000	4.620																																
Total Adjustments	0.000	0.000	4.620																																
(U) Summary of Adjustments																																			
Program Adjustments			4.620																																
Total	0.000	0.000	4.620																																

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604574N/NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME 1353/Standard Hardware		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	4.620				
RDT&E Articles Qty	0	0	0				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Common Processing System (CPS) provides the computer processing and memory, data storage and extraction, and Input/Output (I/O) interface to support hosting Navy combat system software applications and management of computing resources in support of the AEGIS Modernization program.

The Common Display System (CDS) provides common human machine interface (Combat Information Center (CIC) consoles and remote displays) to the Aegis Open Architecture (OA) computing environment and provides war fighter team situational awareness in support of the AEGIS Modernization program.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
SYSTEMS ENGINEERING	0.000	0.000	4.620
RDT&E Articles Quantity	0	0	0

FY 2008 Plan: None
FY 2009 Plan: None
FY 2010 Plan: Common Display System (CDS) and Common Planning System (CPS) technical replacements of obsolete AN/Q-70 display and processing equipment supporting multiple platforms including AEGIS Destroyers and Cruisers undergoing modernization.

CLASSIFICATION:			UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			PROGRAM ELEMENT NUMBER AND NAME 0604574N/NAVY TACTICAL COMPUTER RESOUR			PROJECT NUMBER AND NAME 1353/Standard Hardware				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Subtotal Product Development			0.000	0.000		0.000				
Remarks:										
Systems Engineering	CPFF	Lockheed Martin	0.000	0.000		0.000				
Systems Engineering	WX	NSWC/PHD	0.130	0.000		0.000				
Systems Engineering	WX	NSWC/Dahlgren	1.021	0.000		0.000				
Systems Engineering	WX	NSWC/Crane	0.799	0.000		0.000				
Systems Engineering	Various	Various	0.097	0.000		0.000				
Systems Engineering	CPFF	General Dynamics AIS	0.000	0.000		2.310	NOV-09			
Systems Engineering	CPFF	DRS Technologies, Inc.	0.000	0.000		1.155	APR-10			
Systems Engineering	CPFF	Global Technical Systems	0.000	0.000		1.155	APR-10			
Subtotal Support Costs			2.047	0.000		4.620				
Remarks:										
Subtotal Test and Evaluation			0.000	0.000		0.000				
Remarks:										
Various	Various	Various	0.100	0.000		0.000				
Subtotal Management Services			0.100	0.000		0.000				
Remarks:										
Total Cost			2.147	0.000		4.620				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4, SCHEDULE PROFILE							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604574N/NAVY TACTICAL COMPUTER RESOURCES				PROJECT NUMBER AND NAME 1353/Standard Hardware		
	FY08	FY09	FY10					
Acquisition Milestones								
Contracts: IDIQ Production			△△△△					
Technical Insertion PDR SRR CDR			◇ ◇ ◇					
Test & Evaluation								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604574N/NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME 1353/Standard Hardware		
Schedule Profile		FY 2008	FY 2009	FY 2010			
FY10 IDIQ Production				1Q10-4Q10			
Technical Insertion PDR				3Q10			
Technical Insertion SRR				2Q10			
Technical Insertion CDR				4Q10			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604601N/MINE DEVELOPMENT			
COST (In Millions)				FY 2008	FY 2009	FY 2010	
Total PE Cost				2.030	1.999	2.249	
0267 / MINE IMPROVEMENTS				2.030	1.999	2.249	
A. MISSION DESCRIPTION: (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; and (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields. Data Recorders: Mine data recorders record mine target detection and mine fire data during in-water reliability testing. Current recorders are no longer supportable and cannot be used with the Quickstrike Mod 3. New recorders will work with the programmable Target Detecting Device MK 71 used in the Mod 3. They will support in-water testing of all in-service Quickstrike Mods (0, 1, and 3) Remote Control (RECO): Provide on-way Remote Control of Quickstrike Mine MK 65. Commands will be Arm, Sterilize and Self Destruct. RECO mines can be planted before a conflict begins and armed if required. Sterilize or self destruct commands will neutralize the minefield as soon as hostilities are over. Work includes development of transmitters to communicate with the mines.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)									DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5					R-1 ITEM NOMENCLATURE 0604601N/MINE DEVELOPMENT				
B. PROGRAM CHANGE SUMMARY:									
Funding:					FY 2008	FY 2009	FY 2010		
FY09 President's Budget					2.048	2.008	2.277		
FY10 President's Budget					2.030	1.999	2.249		
Total Adjustments					-0.018	-0.009	-0.028		
(U) Summary of Adjustments									
Congressional Rescissions									
Congressional Adjustments									
SBIR/STTR/FTT Assessment					-0.018				
Program Adjustments									
Rate/Misc Adjustments						-0.009	-0.028		
Total					-0.018	-0.009	-0.028		
C. OTHER PROGRAM FUNDING SUMMARY:									
To Total									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
WPN 3231	3.214	3.496	4.680						11.390
D. ACQUISITION STRATEGY:									
The Target Detecting Device (TDD) Mk 71 Mod 1 was modified by the TDD Adapter Mk 157 - used in Quickstrike Mk 65 Mod 3 kits, the Safe and Arming Device Mk 75, TDD Adapter Mk 163, and Lithium Battery Mk 176 - used in the Quickstrike Mk 62/63 Mod 3 kits.									
E. MAJOR PERFORMERS:									
Major performers are NSWC PC, NUWC Keyport, NSWC IH, and SAIC.									

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT			PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	2.030	1.999	2.249				
RDT&E Articles Qty	0	0	0				

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; and (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields.

Data Recorders: Mine data recorders record mine target detection and mine fire data during in-water reliability testing. Current recorders are no longer supportable and cannot be used with the Quickstrike Mod 3. New recorders will work with the programmable Target Detecting Device MK 71 used in the Mod 3. They will support in-water testing of all in-service Quickstrike Mods (0, 1, and 3)

Remote Control (RECO): Provide on-way Remote Control of Quickstrike Mine MK 65. Commands will be Arm, Sterilize and Self Destruct. RECO mines can be planted before a conflict begins and armed if required. Sterilize or self destruct commands will neutralize the minefield as soon as hostilities are over. Work includes development of transmitters to communicate with the mines.

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT	PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.490	1.448	1.679
RDT&E Articles Quantity	0	0	0
Development Support:			
FY 2008-2011 PLANS:			
Software Development: Continue initial development of the High Speed Vessels/Shallow Water Twin Hull (HSV/SWATH) algorithm for the Quickstrike Mod 3 (Target Detecting Device Mk 71 Mod 1). Conduct in-water testing of the Air Cushioned Vehicle algorithm and HSV/SWATH algorithm. Complete generating operational data (OPDATA) for the Fast Patrol Boat and large ship algorithms for minefield planning, and begin generating OPDATA for the Air Cushioned Vehicle algorithm. Generate operational data for the Air Cushioned Vehicle algorithm for minefield planning. Continue the second phase of development for the ForceNet-compliant Tactical Decision Aid for minefield planning in MEDAL/GCCS-M, to pass minefield plans directly to ForceNet target and aircraft-mission planning software. Integrated Logistic Support (ILS).			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.470	0.484	0.500
RDT&E Articles Quantity	0	0	0
Product Development:			
FY 2008 PLANS:			
System Engineering: Perform flight testing leading to aircraft certification for Quickstrike Mod 3.			
FY 2009 PLANS:			
System Engineering: Continue to perform flight testing leading to aircraft certification for Quickstrike Mod 3.			
FY2010 PLANS:			
System Engineering: Continue to perform flight testing leading to aircraft certification for Quickstrike Mod 3.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT	PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS	
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.070	0.067	0.070
RDT&E Articles Quantity	0	0	0
Management: FY 2008 PLANS: Program Management Support and Travel FY 2009 PLANS: Program Management Support and Travel FY2010 PLANS: Program Management Support and Travel			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT					PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Primary Hardware Development	WX	NSWC PC	111.099			0.484	OCT-08	0.500	OCT-09		112.083	0.000
Ancillary Hardware Development			2.158			0.000		0.000			2.158	0.000
Ship Suitability	WX	NSWC PC	2.467			0.000		0.000			2.467	0.000
GFE			4.790			0.000		0.000			4.790	0.000
Subtotal Product Development			120.514			0.484		0.500			121.498	0.000
Remarks:												
Software Development	WX	Various	12.848			1.428	OCT-08	1.658	OCT-09		CONT	0.000
Integrated Logistics Support	WX	NSWC PC	0.539			0.020	OCT-08	0.021	OCT-09		0.580	0.000
Subtotal Support Costs			13.387			1.448		1.679			CONT	0.000
Remarks:												
Development Test & Evaluation	WX	NSWC PC	17.916			0.000		0.000			17.916	0.000
Subtotal Test and Evaluation			17.916			0.000		0.000			17.916	0.000
Remarks:												
Government Engineering Support			35.599			0.000		0.000			35.599	0.000
Program Management Support	Various	Various	1.666			0.062	OCT-08	0.065	OCT-09		1.793	0.000
Travel	PD	NAVSEA	0.038			0.005	OCT-08	0.005	OCT-09		0.048	0.000
Subtotal Management Services			37.303			0.067		0.070			37.440	0.000
Remarks:												
Total Cost			189.120			1.999		2.249			CONT	0.000

CLASSIFICATION:		UNCLASSIFIED																																																																																																																																														
EXHIBIT R-4, SCHEDULE PROFILE		DATE May 2009																																																																																																																																														
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT	PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS																																																																																																																																														
Mine Development Program Schedule <table><thead><tr><th rowspan="2">Fiscal Year</th><th colspan="4">FY08</th><th colspan="4">FY09</th><th colspan="4">FY10</th><th colspan="4"></th><th colspan="4"></th><th colspan="4"></th><th colspan="4"></th></tr><tr><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tr></thead><tbody><tr><td>Minefield Planning Tactical Decision Aid Improvements</td><td colspan="28"> </td></tr><tr><td>Quickstrike Mod 3 Aircraft Certification</td><td colspan="28"> </td></tr><tr><td>Quickstrike Mod 3 Algorithm Development & Testing</td><td colspan="28"> </td></tr></tbody></table>				Fiscal Year	FY08				FY09				FY10																				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4														Minefield Planning Tactical Decision Aid Improvements																													Quickstrike Mod 3 Aircraft Certification																													Quickstrike Mod 3 Algorithm Development & Testing																												
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604601N/MINE DEVELOPMENT			PROJECT NUMBER AND NAME 0267/MINE IMPROVEMENTS		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Minefield Planning Tactical Decision Aid Improvements		1Q-4Q	1Q-4Q	1Q-4Q			
Quickstrike Mod 3 Aircraft Certification		1Q-4Q	1Q-4Q	1Q-4Q			
Quickstrike Mod 3 Algorithm Development and Testing		1Q-4Q	1Q-4Q	1Q-4Q			

CLASSIFICATION:		UNCLASSIFIED																																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT																																																
COST (In Millions)	FY 2008	FY 2009	FY 2010																																																
Total PE Cost	26.293	52.103	21.105																																																
2234 / Lightweight Hybrid Torpedo	26.293	50.507	21.105																																																
9999 / CONGRESSIONAL ADDS	0.000	1.596	0.000																																																
A. MISSION DESCRIPTION: 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. Initial Operating Capability (IOC) achieved in 2004. FY08: Continued development of hardware/software improvements for MK54 Pre-Planned Product Improvement (P3I) program including MK54 VLA Integration and development of the new array. Initiated development of MK54 high altitude launch capability from Maritime Patrol Aircraft (MPA). (MPA).FY09: Continue development of hardware/software improvements for P3I program. Continue development of MK54 high altitude launch capability from Maritime Patrol Aircraft. (MPA).FY10:Continue development of hardware/software improvements for P3I program. Continue development of MK54 high altitude launch capability from Maritime Patrol Aircraft. B. PROGRAM CHANGE SUMMARY: <table border="1"> <tr> <td>Funding:</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td>26.502</td> <td>50.732</td> <td>35.311</td> </tr> <tr> <td>FY10 President's Budget</td> <td>26.293</td> <td>52.103</td> <td>21.105</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.209</td> <td>1.371</td> <td>-14.206</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Congressional Adjustments</td> <td>0.000</td> <td>1.458</td> <td>0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Program Adjustments</td> <td>-0.209</td> <td>0.000</td> <td>-9.108</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>0.000</td> <td>-0.087</td> <td>-5.098</td> </tr> <tr> <td>Total</td> <td>-0.209</td> <td>1.371</td> <td>-14.206</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	26.502	50.732	35.311	FY10 President's Budget	26.293	52.103	21.105	Total Adjustments	-0.209	1.371	-14.206	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	1.458	0.000	SBIR/STTR/FTT Assessment	0.000	0.000	0.000	Program Adjustments	-0.209	0.000	-9.108	Rate/Misc Adjustments	0.000	-0.087	-5.098	Total	-0.209	1.371	-14.206
Funding:	FY 2008	FY 2009	FY 2010																																																
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT			PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	26.293	50.507	21.105				
RD T&E Articles Qty	1	0	8				
A. 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. Initial Operating Capability (IOC) achieved in 2004. FY10 delivery includes four Proof of Design/Proof of Manufacturing (POD/POM) and four EDM units of the new array.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT				PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
MK54 Pre-Planned Product Improvement (incl.MK54 VLA Integr & HAAWC prog)		26.293		50.507		21.105			
RDT&E Articles Quantity		1		0		8			
FY 2008 Plan: Continued development of P3I Program hardware/software improvements for Block Upgrade (BUG)/Classifier and Track (CAT) and Advanced Processor Build (APB) (\$9.360M). Continued development of P3I Program hardware/software for the new array (\$9.834M). Initiated development of MK54 high altitude launch capability from Maritime Patrol Aircraft (MPA) (\$6.434M). Conducted Developmental Testing (DT) of VLA54 and completed development of VLA Integration Kit. (\$0.665M). FY 2009 Plan: Continue development of hardware/software improvements for P3I program BUG/CAT and APB (\$10.477M). Continue development of P3I Program hardware/software for the new array (\$18.680M). Continue development of MK54 high altitude launch capability from Maritime Patrol Aircraft (MPA) (\$21.000M). Conduct Operational Testing (OT) of VLA54 (\$0.350M). FY 2010 Plan: Continue development of hardware/software improvements for P3I program BUG/CAT and APB (\$5.294M). Continued development of P3I Program hardware/software for the new array (\$3.811M). Continue development of MK54 high altitude launch capability from Maritime Patrol Aircraft (MPA) (\$12.000M).									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					
Torpedo MK 46 MODS- BLI WPN 3215		84.924	58.708	94.159					
D. 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 contracts among qualified producers.									

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT	PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo
E. MAJOR PERFORMERS: Naval Undersea Warfare Center (NUWC), Newport: MK54 System Engineering, System Integration, Software development, and Hardware Engineering development. Naval Undersea Warfare Center (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. Naval Surface Warfare Center (NSWC) Indian Head: Warhead Development for torpedoes and VLA rocket motors. 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. Progeny Systems: MK54 Hardware Development for array technology. Lockheed Martin - Akron: System Engineering for VLA integration. Contractor TBD - to support hardware development for High Altitude Anti-submarine Weapon Concept (HAAWC)		

CLASSIFICATION:			UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT			PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Hardware Development	WR	NUWC Newport/Keyport	17.263	9.419	OCT-08	2.465	OCT-09			
Hardware Development	C/CPAF	Raytheon	3.530	0.000		0.000				
Hardware Development	WR	NSWC Indian Head	0.282	0.200	OCT-08	0.200	OCT-09			
Systems Engineering	WR	NUWC Newport/Keyport	12.492	1.674	OCT-08	2.894	OCT-09			
Systems Engineering	SS/FP	Lockheed Martin - Akron - VLA	2.501	0.000		0.000				
Systems Engineering	WR	PEO-IWS 3, Dahlgren	2.882	0.000		0.000				
Systems Engineering	WR	PEO-IWS 5, Dahlgren	2.013	0.250	OCT-08	0.000				
Systems Engineering	WR	NSWC PMA 290	1.275	3.361	OCT-08	0.555	OCT-09			
Systems Engineering	WR	NAWCWD China Lake	0.379	0.000		0.000				
Systems Engineering	SS/FP	SPA Inc.	0.590	0.000		0.000				
Hardware Development	SS/FP	Progeny Systems	15.662	5.511	JUN-09	0.000				
Hardware Development	C/CPAF	TBD for HAAWC	1.192	16.246	OCT-08	6.900	OCT-09			
Software Development	WR	NUWC Newport/Keyport	2.930	6.657	OCT-08	3.667	OCT-09			
Systems Engineering	WR	Naval Operational Logistics Support Center (NOLSC)	0.025	0.000		0.000				
Subtotal Product Development			63.016	43.318		16.681				
Remarks:										
System Test & Evaluation	WR	NUWC Newport/Keyport	14.543	4.822	OCT-08	3.824	OCT-09			
Subtotal Support Costs			14.543	4.822		3.824				
Remarks:										
System Test and Evaluation	WR	OPTEVFOR	0.400	0.700	OCT-08	0.150	OCT-09			
System Test and Evaluation	WR	NUWC Newport/Keyport	11.353	1.200	OCT-08	0.000				
Subtotal Test and Evaluation			11.753	1.900		0.150				
Remarks:										
Program Management Support	Various	Alion Science	1.001	0.409	OCT-07	0.400	OCT-09			
Travel	WR	NAVSEA	0.134	0.058	OCT-08	0.050	OCT-09			
Subtotal Management Services			1.135	0.467		0.450				

CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R-3
RDT&E PROJECT COST ANALYSIS

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPME			PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Remarks:										
Subtotal System Engineering			0.000	0.000		0.000				
Remarks:										
Total Cost			90.447	50.507		21.105				

CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R-3
RDT&E PROJECT COST ANALYSIS

CLASSIFICATION:		UNCLASSIFIED			
EXHIBIT R-4, SCHEDULE PROFILE					DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT		PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo	
	FY08	FY09	FY10		
MK54 Pre-Planned Prdouect Improvement (P3I)	VLA54		TI-1 UPGRADE/ARRAY		
HARDWARE SPIRALS	△		▲		
SOFTWARE UPGRADES			→		
DT/OT	VLA54 DT ▲	VLA54 OT △	→		
HIGH ALTITUDE CAPABILITY	▲		→		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT			PROJECT NUMBER AND NAME 2234/Lightweight Hybrid Torpedo		
Schedule Profile		FY 2008	FY 2009	FY 2010			
MK54 Development & Upgrades							
MK54 Pre-Planned Product Improvement (P3I)							
Hardware Spirals		1Q-4Q	1Q-4Q	1Q-4Q			
VLA Kit Integration delivery		3Q					
TI-1 Upgrade/Array delivery				4Q			
Software Upgrades		1Q-4Q	1Q-4Q	1Q-4Q			
DT/OT		1Q	2Q-3Q				
High Altitude Capability		1Q-4Q	1Q-4Q	1Q-4Q			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604610N/LIGHTWEIGHT TORPEDO DEVELOPMENT	PROJECT NUMBER AND NAME 9D89A/Torpedo Composite Homing Array	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	1.596	0.000
RDT&E Articles Quantity	0	0	0
FY09 Plan: Initiate development of Torpedo Composite Homing Array (\$1.596M)			

CLASSIFICATION:		UNCLASSIFIED																																									
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																				
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604654N/JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT																																							
COST (In Millions)				FY 2008	FY 2009	FY 2010																																					
Total PE Cost				10.082	10.806	10.327																																					
1829 / EXPL ORD DISP PROC				10.082	10.806	10.327																																					
A. MISSION DESCRIPTION: (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: DOD Directive 5160.62 assigned to the Secretary of the Navy (SECNAV) the responsibility of Single Manager for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). It also assigns to the Executive Manager for EODT&T (N85X) the responsibility to provide for technical development, validation, preparation, Joint Service approval, and distribution of all EOD procedures texts, graphic aids, manuals, and bulletins. This program 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 specialized tools and procedures, for primary EOD response elements that respond 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 (without traditional acquisition milestones) with on-going, continuous delivery of urgent and periodic documented procedures and identification guides. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Funding:</td> <td style="text-align: center;">FY 2008</td> <td style="text-align: center;">FY 2009</td> <td style="text-align: center;">FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td style="text-align: center;">10.165</td> <td style="text-align: center;">10.858</td> <td style="text-align: center;">10.431</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: center;">10.082</td> <td style="text-align: center;">10.806</td> <td style="text-align: center;">10.327</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: center;">-0.083</td> <td style="text-align: center;">-0.052</td> <td style="text-align: center;">-0.104</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.029</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td style="text-align: center;">-0.083</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.023</td> <td style="text-align: center;">-0.104</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">-0.083</td> <td style="text-align: center;">-0.052</td> <td style="text-align: center;">-0.104</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	10.165	10.858	10.431	FY10 President's Budget	10.082	10.806	10.327	Total Adjustments	-0.083	-0.052	-0.104	(U) Summary of Adjustments				Congressional Adjustments	0.000	0.029	0.000	SBIR/STTR/FTT Assessment	-0.083	0.000	0.000	Rate/Misc Adjustments	0.000	0.023	-0.104	Total	-0.083	-0.052	-0.104
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CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604654N/JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	
C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable. D. ACQUISITION STRATEGY: This is a non-acquisition program. E. 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 FY08 through FY10. The funding is used to obtain, analyze and exploit ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604654N/JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT			PROJECT NUMBER AND NAME 1829/EXPL ORD DISP PROC		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	10.082	10.806	10.327				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: DOD Directive 5160.62 assigned to the Secretary of the Navy (SECNAV) the responsibility of Single Manager for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). It also assigns to the Executive Manager for EODT&T (N85X) the responsibility to provide for technical development, validation, preparation, Joint Service approval, and distribution of all EOD procedures texts, graphic aids, manuals, and bulletins. This program 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 specialized tools and procedures, for primary EOD response elements that respond 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 (without traditional acquisition milestones) with on-going, continuous delivery of urgent and periodic documented procedures and identification guides.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604654N/JOINT SERVICE EXPLOSIVE ORDNANCE DEVELO	PROJECT NUMBER AND NAME 1829/EXPL ORD DISP PROC	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.904	4.024	3.599
RDT&E Articles Quantity	0	0	0
FY08 Analyzed and exploited foreign ordnance items, and develop render-safe procedures for new domestic and foreign ordnance.			
FY09 Continued to analyze, exploited, and developed render-safe procedures for foreign ordnance items, and continue to develop render-safe procedures for new domestic ordnance items.			
FY10 Analyze and exploit foreign ordnance items, and develop render-safe procedures for new domestic and foreign ordnance.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.990	3.384	3.348
RDT&E Articles Quantity	0	0	0
FY08 Developed specialized procedures and prototypical tools for primary response elements in preparation for response to IND and WMD incidents.			
FY09 Continued to develop IND and WMD information, countermeasures and procedures for the EOD community.			
FY10 Develop specialized procedures and prototypical tools for EOD response elements in preparations for response to IND and WMD incidents accounting for evolving threat.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.188	3.398	3.380
RDT&E Articles Quantity	0	0	0
FY08 Acquired high priority foreign threat naval mines, for exploitation of these mines and development of countermeasures procedures.			
FY09 Continued to acquire highest priority foreign sea mines for analysis and exploitation, and development of countermeasures procedures.			
FY10 Acquire foreign sea mines of the highest priority, for exploitation and development of countermeasures procedures.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604654N/JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT					PROJECT NUMBER AND NAME 1829/EXPL ORD DISP PROC					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
RSP Development	WX	EODTD, Indian Head, MD	165.390			3.444	OCT-08	3.168	OCT-09		172.002	0.000
IND Countermeasures	WX	EODTD, Indian Head, MD	34.173			2.854	OCT-08	2.713	OCT-09		39.740	0.000
Foreign Mine Acquisition	WX	ONI, Suitland, MD	17.760			2.809	OCT-08	2.790	OCT-09		23.359	0.000
Program Management Personnel	WX	EODTD, Indian Head, MD	2.945			0.250	OCT-08	0.250	OCT-09		3.445	0.000
Miscellaneous	Various	Various	12.970			1.449	OCT-08	1.406	OCT-09		15.825	0.000
Subtotal Product Development			233.238			10.806		10.327			254.371	0.000
Remarks:												
Subtotal Support Costs			0.000			0.000		0.000			0.000	0.000
Remarks:												
Subtotal Test and Evaluation			0.000			0.000		0.000			0.000	0.000
Remarks:												
Subtotal Management Services			0.000			0.000		0.000			0.000	0.000
Remarks:												
Total Cost			233.238			10.806		10.327			254.371	0.000

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION (RDT& BA-5				R-1 ITEM NOMENCLATURE PE0604703N - Manpower, Personnel, Training, Simulation, & Human Factors				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	8.561	5.249	5.898					
L1822/Manpower, Personnel, Training, Sim, and HF	8.561	5.249	5.898					

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 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 R&D Program features the use of a broad range of technologies from cognitive science, human systems integration, learning management, content management & delivery, learning and ability testing techniques, mathematical modeling and optimization, statistical and econometric forecasting, intelligent systems, data visualization, data mining, simulation, decision support systems, and new services oriented architectures to include applications, databases and communications configuration. 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 research proof of concept demonstrations and rapid prototyping of Commercial off the Shelf/Government of the Shelf (COTS/GOTS) technologies into operation use.

R-1 SHOPPING LIST - Item No. 118

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: April 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604703N - Manpower, Personnel, Training, Simulation, and Human Factors	L1822/Manpower, Personnel, Training, Sim, and HF	

B. PROGRAM CHANGE SUMMARY:

	FY 2008	FY 2009	FY 2010
Funding:			
FY 09 PB Submit	8.631	5.263	5.070
FY 10 PB Submit	8.561	5.249	5.898
Total Adjustments	-0.070	-0.014	0.828
Summary of Adjustments			
SBIR	-0.070	0.000	0.000
Rate Adjustments	0.000	-0.014	-0.074
Program adjustments	0.000	0.000	0.902
Subtotal	-0.070	-0.014	0.828

Schedule: Not Applicable
 Technical: Not Applicable

C. (U) OTHER PROGRAM FUNDING SUMMARY: None

(U) RELATED RDT&E:

- (U) PE 0601152N, In-House Independent Lab Research
- (U) PE 0601153N, Defense Research Sciences
- (U) PE 0602236N, Mission Support Technology
- (U) PE 0602722A, Personnel and Training
- (U) PE 0603236N, Manpower, Personnel and Training Advanced Technology Development
- (U) PE 0603731A, Manpower and Personnel
- (U) PE 0603704F, Manpower and Personnel Systems Technology

(U) SCHEDULE PROFILE: Not applicable.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: April 2009		
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 L1822/Manpower, Personnel, Training, Sim, and HF			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	8.561	5.249	5.898					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

L1822/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.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E operational systems development because it encompasses engineering and development of new end-items prior to production approval decision and the upgrading and enhancement of existing MPTE decision support systems, tools and models.

1. (U) FY 2008 ACCOMPLISHMENTS:

- (U) Completed prototype development of Non-Cognitive Measures.
- (U) Completed prototype development of Attrition Reduction Technologies.
- (U) Completed prototype development of Enterprise Management System.
- (U) Completed Phases II for downloadable disconnected operations delivery prototype
- (U) Completed Phases I, and II of prototype development for Integrated Skills and Training Data Aggregation and Display (ISTDAS) Prototype
- (U) Completed Learner Assessment Prototype
- (U) Completed Navy War College (NWC) Student Data Base development and transition
- (U) Continued Training and Supply Chain Management Decision Support Systems integration and transition
- (U) Continued updates, upgrades and enhancements to Force Structure and Strength Planning Models
- (U) Continued prototype development of Career Case Manager Technologies.
- (U) Continued prototype development of Distribution Incentives System (DIS).
- (U) Began prototype development of Cultures and Values Selection
- (U) Began Transition of Web-based Marketplace for Sailor / Marine Jobs
- (U) Began Transition of Integrated Whole Person Assessment System
- (U) Began Transition of Integrated Career Management System
- (U) Began Transition of Integrated Comprehensive Optimal Manpower Personnel Analysis Simulation System (COMPASS)
- (U) Began Improved Manpower and Personnel Integration Tool
- (U) Began development of Integrated Human Factors and Flight Deck Sortie Rate Model
- (U) Began development and integration of Integrated Operating Picture Decision Support System and Tool Set

R-1 SHOPPING LIST - Item No. 118

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 9)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: April 2009
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 L1822/Manpower, Personnel, Training, Sim, and HF
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 2. (U) FY 2009 Accomplishments (U) Continued prototype development of Career Case Manager Technologies. (U) Continued prototype development of Distribution Incentives System (DIS). (U) Continued prototype development of Cultures and Values Selection. (U) Continued Transition of Web-based Marketplace for Sailor / Marine Jobs (U) Continued Transition of Integrated Whole Person Assessment System (U) Continued Transition of Integrated Career Management System (U) Continued Transition of Integrated Comprehensive Optimal Manpower Personnel Analysis Simulation System (COMPASS) (U) Continued updates, upgrades and enhancements to Force Structure and Strength Planning Models (U) Continued Training and Supply Chain Management Decision Support Systems integration and transition (U) Continued Improved Manpower and Personnel Integration Tool (U) Continued development of Integrated Human Factors and Flight Deck Sortie Rate Model (U) Continued development and integration of Integrated Operating Picture Decision Support System and Tool Set (U) Begin Transition of Future Naval Warfighter Capabilities (FNWC) Capable Manpower (CM) Refresh early prototypes		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: April 2009
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 L1822/Manpower, Personnel, Training, Sim, and HF
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3. (U) FY 2010 PLAN: (U) Continue Transition of Web-based Marketplace for Sailor / Marine Jobs (U) Continue Transition of Integrated Whole Person Assessment System (U) Continue Transition of Integrated Career Management System (U) Continue Transition of Integrated Comprehensive Optimal Manpower Personnel Analysis Simulation System (COMPASS) (U) Continue Training and Supply Chain Management Decision Support Systems integration and transition (U) Continue Improved Manpower and Personnel Integration Tool (U) Continue development of Integrated Human Factors and Flight Deck Sortie Rate Model (U) Continue to Transitioning of Future Naval Warfighter Capabilities (FNWC) Capable Manpower (CM) Refresh early prototypes (U) Begin transition of DARPA Digital Tutor to Center for Information Dominance for IT Training		

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: April 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604703N - Manpower,Personnel,Training, Simulation, and Human Factors					L1822/Manpower, Personnel, Training, Sim, and HF						
Cost Categories	Contract Method & Type	Performing Activity & Location	Prior Years Cost	Prior Years Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development														
Ancillary Hardware Development														
Aircraft Integration														
Ship Integration														
Ship Suitability														
Systems Engineering														
Training Development														
Licenses														
Tooling														
GFE														
Award Fees														
Subtotal Product Development			0.000		0.000		0.000							
Remarks:														
Development Support	Allot	NPRST Millington, TN	3.608		2.585		1.640							
Development Support	Allot	CNP Washington DC	3.977		2.664		2.258							
Development Support	Allot	NETPDTC Pensacola FL	0.976											
Development Support	Allot	Naval War College					2.000							
Development Support	Allot													
Software Development														
Software Development														
Studies & Analyses														
Studies & Analyses														
Award Fees														
Subtotal Support			8.561		5.249		5.898							
Remarks: FY10 increase for DARPA Digital Tutor transition														

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: April 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604703N - Manpower,Personnel,Training, Simulation, and Human Factors				L1822/Manpower, Personnel, Training, Sim, and HF						
Cost Categories	Contract Method & Type	Performing Activity & Location	Prior Years Cost	Prior Years Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 11 Cost	FY 11 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						
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support													
Travel													
Transportation													
SBIR Assessment													
Subtotal Management			0.000		0.000		0.000						
Remarks:													
Total Cost			8.561		5.249		5.898						

R-1 SHOPPING LIST - Item No. 118

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE:

April 2009

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME							
RDT&E, N /BA5		0604703N - Manpower, Personnel, Training, Simulation, and Human Fact								L1822/Manpower, Personnel, Training, Sim, and HF							
Fiscal Year	2008				2009				2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
Force Structure & Strength Planning Tools			▲	△			▲	△									
Enterprise Management System		▲		△													
Non-Cognitive Measures			▲	△													
Attrition Reduction Technologies			▲	△													
Distribution Incentive System			▲	△			▲	△									
Career Case Management Technologies			▲	△			▲	△									
Cultures and Values Selection				▲		△	▲	△									
Integrated Whole Person Assessment Sys				△		▲		△	▲				△				
Web Based Marketplace for Sailors/Marines				△	▲		△	▲					△				
Integrated Career Management System				△		▲		△		▲	△						
Integrated Comp. Opt M&P Analytic Sup Sys				△			▲						△				
IMPRINT-N Tool Set Transition				△				△					△				
Learner Assessment Prototype		▲		△													
Disconnected Ops Prototype		▲		△													
Integrated Skills/Training Data Aggregation and Display Prototype		▲		△													
Training/Supply Chain Mgmt Decision Support System integration/transition				▲		▲		△		▲			△				
Integrated Operating Picture Decision Support System and Tool Set				▲	▲			△									
NWC Student Data Base Development				△													
Integrated Human Factors and Flight Deck Sortie Rate Model				▲		▲		△		▲			△				
FNWC CM Refresh early prototypes					▲			△		▲			△				
DARPA Digital Tutor										▲			△				
Demonstration																	
Prototype & Documentation																	

R-1 SHOPPING LIST - Item No. 118

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE:				
				April 2009				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604703N - Manpower,Personnel, Training, Simulation, and Human Factors		L1822/Manpower,Personnel,Training, Sim, and HF					
Schedule Profile	FY 2008	FY 2009	FY 2010					
Force Structure & Strength Planning Tools		Q1-Q4						
Distribution Incentive System		Q1-Q4						
Career Case Management Technologies		Q1-Q4						
Cultures and Values Selection		Q1-Q4						
Integrated Whole Person Assessment Sys		Q1-Q4	Q1-Q4					
Web Based Marketplace for Sailors/Marines		Q1-Q4	Q1-Q4					
Integrated Career Management System		Q1-Q4	Q1-Q3					
Imtegrated Comp. Opt M&P Analytic Sup Sys		Q1-Q4	Q1-Q4					
IMPRINT-N Tool Set Transition		Q1-Q4	Q1-Q4					
Integrated Skills/Training Data Aggregation and Display Prototype	Q1-Q4							
Disconnected Ops Prototype	Q1-Q4							
Training/Supply Chain Mgmt Decision Support Systeme integration/transition	Q1-Q4	Q1-Q4	Q1-Q4					
School House/Learning Center Trade-Off and Optimization Decision Support	Q1-Q4	Q1-Q4						
Integrated Operating Picture Decision Support System and Tool Set	Q1-Q4	Q1-Q4						
FNWC CM Refresh early prototypes	Q1-Q4	Q1-Q4	Q1-Q4					
Integrated Human Factors and Flight Deck Sortie Rate Model		Q1-Q4	Q1-Q4					
DARPA Digital Tutor			Q1-Q4					

R-1 SHOPPING LIST - Item No. 118

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

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604727N, JOINT STANDOFF WEAPON SYSTEMS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	28.804	22.435	10.022					
2068 JSOW	24.162	22.435	10.022					
9999 Congressional Add	4.642							

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 was 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 2008 included funding to complete Follow-on Test & Evaluation of AGM-154C Block II. FY 2008-2010 Includes funding to integrate new functionality into the Joint Mission Planning Systems (JMPS) and Common Unique Planning Component (CUPC). FY 2008-2010 also includes funding for development, integration, qualification and follow-on developmental/operational test and evaluation of a Network Enabled Weapon moving target capability into the JSOW Unitary weapon (AGM-154C-1). The moving target capability will be inserted as an engineering change proposal beginning with FY 2009 procured JSOW-C weapons. The new AGM-154C-1 capability will enable the weapon to attack sea moving targets 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.

9999 Congressional Add. Conduct a user demonstration to evaluate the feasibility of the JSOW Extended Range (ER) concept. A secondary goal of the demonstration program is to serve as risk reduction and proof of concept for potential future Navy initiatives in Next Generation Standoff Outside Theater Defense (SOTD) weapons.

R-1 SHOPPING LIST - Item No. 119

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604727N, JOINT STANDOFF WEAPON SYSTEMS	

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:	29.112	22.510	0.466
Current BES	28.804	22.435	10.022
Total Adjustments	-0.308	-0.075	9.556
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.014	
SBIR/STTR/FTT Assessments	-0.308		
Program Adjustments			9.556
Rate/Misc Adjustments		-0.061	
Subtotal	-0.308	-0.075	9.556

Schedule:

- 1) JSOW-C-1 DT-IIIC was changed from 1Q FY 2008 through 3Q FY 2008 to 1Q FY 2008 through 4Q FY 2008 to allow additional contractor captive carry flights to be conducted to reduce the risk during DT-IIID testing.
- 2) JSOW-C-1 DT-IIID was changed from 4Q FY 2008 through 1Q FY 2009 to 1Q FY 2009 through 2Q FY 2010 to allow additional time to produce weapon data link hardware and develop software algorithms.
- 3) JSOW-C OT-IIIA was changed from 4Q FY 2007 through 2Q FY 2008 to 1Q FY 2008 through 2Q FY 2009 to allow time complete an engineering investigation into anomalous behavior witnessed on the OT-3 test event and to resolve test execution/classification issues associated with conducting a survivability test.
- 4) An OT-IIIA Interim Report was added in 4Q FY 2008 to summarize JSOW-C Block II OT-IIIA testing completed to date and to support early fleet delivery of JSOW-C Block II weapons.
- 5) JSOW-C-1 IT&E was changed from 2Q FY 2009 through 3Q FY 2009 to 2Q FY 2010 through 3Q FY 2010 due to the extension of the JSOW-C-1 DT-IIID testing.
- 6) JSOW-C-1 OT-IIIB was changed from 4Q FY2009 through 2Q FY2010 to 4Q FY 2010 due to the extension of the JSOW-C-1 DT-IIID testing.
- 7) AGM-154-C-1 Design/Integ/Qual was changed from 1Q FY 2007 through 1Q FY 2009 to 1Q FY 2007 through 4Q FY 2009 to allow additional time for integration and qualification efforts of delayed hardware.

Technical:

- 1) FY 2010 reflects the addition of \$9.556M to integrate and qualify a replacement crypto component in the JSOW Telemetry Instrumentation Kit due to the introduction of a new National Security Agency developed crypto component and to fund cost growth due to the delay in the weapon datalink development.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
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 2008	FY 2009	FY 2010					
2068 JSOW	24.162	22.435	10.022					
RDT&E Articles Qty								

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 was 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 2008 included funding to complete Follow-on Test & Evaluation of AGM-154C Block II. FY 2008-2010 includes funding to integrate new functionality into the Joint Mission Planning Systems (JMPS) and Common Unique Planning Component (CUPC). FY 2008-2010 also includes funding for development, integration, qualification and follow-on developmental/operational test and evaluation of a Network Enabled Weapon moving target capability into the JSOW Unitary weapon (AGM-154C-1). The moving target capability will be inserted as an engineering change proposal beginning with FY 2009 procured JSOW-C weapons. The new AGM-154C-1 capability will enable the weapon to attack sea moving targets 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.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N, JOINT STANDOFF WEAPON SYSTEMS	PROJECT NUMBER AND NAME 2068, JSOW		
B. Accomplishments/Planned Program				
Network Enabled Weapon	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	23.821	21.747	3.305	
RDT&E Articles Quantity				
Develop and integrate the Network Enabled Weapon moving target capability into JSOW-C, termed AGM-154C-1. The FY2008-2009 efforts 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 AGM-154C-1 changes. The FY2008-2010 budget includes funding to complete weapon qualification and follow-on developmental test/operational test efforts.				
JSOW Common Unique Planning Component (CUPC)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.341	0.688	0.061	
RDT&E Articles Quantity				
Plan new functions into the JSOW Common Unique Planning Component (CUPC) and develop new software releases of CUPC. The FY2008-2009 effort will address new mission planning functionality related to the incorporation of the Network Enabled Weapon moving target capability into the JSOW-C-1 weapons. The FY2008-2010 efforts will also address follow-on mission planning updates to incorporate new imagery architectures and formats.				
JSOW TIK Crypto Component	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			6.656	
RDT&E Articles Quantity				
Integrate and qualify a replacement crypto component into the JSOW Telemetry Instrumentation Kit (TIK). FY 2010 efforts will involve the development, integration and range safety certification of a new National Security Agency developed crypto component to replace the KGV-68B.				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
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. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
USN WP,N BLI 223000 JSOW*	130.436	142.622	145.336
Qtys	370	496	430

* Does not include Spares

D. ACQUISITION STRATEGY:

The contracting strategy for JSOW is planned to be sole source for the life of the program. Cost type contracts are utilized for the Engineering and Manufacturing Development and follow-on modification program (i.e., Block II (AGM-154C), AGM-154C-1 efforts. Component breakout is used, when possible, to promote full and open competition.

Fixed price type contracts are utilized for production.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604727N, JOINT STANDOFF WEAPON SYSTEMS			2068, JSOW							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Product Development													
Primary Hardware Development - NEW	SS-CPFF	RAYTHEON SYSTEMS, TUCSON, AZ	38.873	17.668	Dec 2008	3.005	Dec 2009						
Primary Hardware Development - TIK Crypto	SS-CPFF	RAYTHEON SYSTEMS, TUCSON, AZ				6.311	Dec 2009						
Systems Engineering	MIPR	NATIONAL SECURITY AGENCY MD	0.167										
Systems Engineering	WX	NAVAL RESEARCH LAB MD	0.450										
Systems Engineering	WX	NAWCWD, CHINA LAKE CA	108.309	0.322	Nov 2008								
All Management costs from program implementation through FY09 not reflected above.		Various	601.040										
Subtotal Product Development			748.839	17.990		9.316							
Development Support													
Software Development - JMPS	SS-CPFF	RAYTHEON SYSTEMS, TUCSON, AZ	4.877	0.688	Nov 2008	0.061	Dec 2009						
Software Development - NEW	SS-CPFF	BOEING, ST LOUIS, MO	8.007	0.697	Nov 2008								
Subtotal Support			12.884	1.385		0.061							
Remarks:													
Test and Evaluation													
Dev Test and Evaluation	WX	NAWCWD, CHINA LAKE CA	27.837	0.550	Nov 2008	0.247	Nov 2009						
Oper Test and Evaluation	WX	OPER T & E FOR CD, NORFOLK VA	10.481	2.490	Nov 2008	0.398	Nov 2009						
Subtotal Test and Evaluation			38.318	3.040		0.645							
Remarks:													
Management													
Travel	Various	NAVAIR, Patuxent River, MD	7.243	0.020	Nov 2008								
All Management costs from program implementation through FY09 not reflected above.		Various	18.261										
Subtotal Management			25.504	0.020		0.000							
Remarks:													
Total Cost			825.545	22.435		10.022							

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile										DATE:				May 2009												
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME							PROJECT NUMBER AND NAME														
RDT&E, N / BA-5					0604727N Joint Standoff Weapon System							2068 Joint Standoff Weapon (JSOW)														
Fiscal Year	2008				2009				2010																	
	1	2	3	4	1	2	3	4	1	2	3	4														
JSOW																										
Production Milestones																										
LRIP/FRP AGM-154C/C-1																										
	FRP-4				FRP-5				FRP-6																	
Deliveries/AGM-154C	FRP-2				FRP-3			FRP-4																		
Deliveries/AGM-154C-1										FRP-5																
SAASM / Block II																										
T & E Milestones	OT-III A																									
Operational Test					Interim Report																					
Network Enabled Weapon Moving Target Capability (Block III)																										
Engineering Milestones	Block III/AGM-154C-1 Design/Integ/Qual																									
Design/Integration/Qual																										
Development Test/Operational Test	DT-III C							DT-III D			IT&E		OT-I													

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Exhibit R-4a, Schedule Detail					DATE: May 2009			
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 2008	FY 2009	FY 2010					
Full Rate Production (FRP)/AGM-154C	1Q	2Q	1Q					
FRP-2 Deliveries-AGM-154C	1Q-3Q							
FRP-3 Deliveries-AGM-154C	3Q-4Q	1Q-3Q						
FRP-4 Deliveries-AGM-154C		4Q	1Q-2Q					
FRP-5 Deliveries-AGM-154C-1			2Q-4Q					
FRP-6 Deliveries-AGM-154C-1								
FRP-7 Deliveries-AGM-154C-1								
FRP-8 Deliveries-AGM-154C-1								
FRP-9 Deliveries-AGM-154C-1								
FRP-10 Deliveries-AGM-154C-1								
SAASM								
Operational Test (OT-IIIA)	1Q-4Q	1Q-2Q						
Interim Report	4Q							
Network Enabled Weapon / Moving Target / AGM-154C-1								
Design/Integration/Qual	1Q-4Q	1Q-4Q						
Development Test (DT-IIIC)	1Q-4Q							
Development Test (DT-IIID)		1Q-4Q	1Q-2Q					
Integrated Test (IT&E)			2Q-3Q					
Operational Test (OT-IIIB)			4Q					

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604727N, JOINT STANDOFF WEAPON SYSTEMS			PROJECT NUMBER AND NAME 9999, Congressional Add			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Congressional Add	4.642							
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Add.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N, JOINT STANDOFF WEAPON SYSTEMS	PROJECT NUMBER AND NAME 9999, Congressional Add		
B. Accomplishments/Planned Program				
Extended Range Demonstration, 9C21A	FY 08			
Accomplishments/Effort/Subtotal Cost	4.642			
RDT&E Articles Quantity				
The FY08 funds will enable the integration of a turbo jet engine into a JSOW Block II AGM-154C weapon and allow for the completion of ground, captive carry and free flight testing.				

R-1 SHOPPING LIST - Item No. 119

UNCLASSIFIED

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	34.564	44.854	35.459				
0166 / SPS Improvement Program	1.912	1.705	5.497				
2178 / QRCC	25.946	30.451	25.664				
3172 / Joint Non-Lethal Weapons	4.188	3.722	4.298				
9999 / Congressional Add	2.518	8.976	0.000				
A. MISSION DESCRIPTION: 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. 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. Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric surface threats. Integrated Swimmer Defense (ISD) scope is to provide the Navy Expeditionary security forces with capabilities of a portable marine integrated swimmer defense system to engage combat swimmer/divers or unknown individuals underwater once they have been detected. FY08 Congressional Adds: 9C23A - Expeditionary Swimmer Defense and 9C22A - Autonomous Unmanned Surface Vessel.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	34.941	35.999	26.584
FY10 President's Budget	34.564	44.854	35.459
Total Adjustments	-0.377	8.855	8.875
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	8.878	0.000
SBIR/STTR/FTT Assessment	-0.337	0.000	0.000
Program Adjustments	0.000	0.000	9.294
Rate/Misc Adjustments	-0.040	-0.023	-0.419
Total	-0.377	8.855	8.875

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 0166/SPS Improvement Program		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.912	1.705	5.497				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric surface threats. Capabilities include: Surface Surveillance System, MK 49 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 asymmetric threats. Non-lethal weapons: NLW assist in determining intent and target discrimination. SPS is to be fielded in blocks through evolutionary acquisition. The block approach facilitates the early delivery of enhanced situational awareness capability. Future blocks will introduce lethal and non-lethal effectors with total detect to engage capability integration. The SPS "End State System" will provide Navy vessels with the ability, in foreign and domestic ports, to protect themselves from attacks by asymmetric surface 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:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 0166/SPS Improvement Program	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.912	1.705	5.497
RDT&E Articles Quantity	0	0	0
FY08/09 - Shipboard Protection System - System design, development, integrate, analyze and evaluate the SPS system.			
FY10 - Shipboard Protection System - System design for other ship classes, integration with MK38 Mod 2 system.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN LINE 812800 (SPS Program)	4.252	17.609	19.275
D. ACQUISITION STRATEGY:			
Revised acquisition strategy is to provide capability to the fleet in blocks. (Block 1 - Enhanced Situational Awareness and Block 3 - Total System Integration including Lethal and Non-Lethal Engagement). All work is being led and performed by the Warfare Centers.			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 0166/SPS Improvement Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Hardware/Software Development	WR	NSWC Crane	1.100	0.277	NOV-08	1.000	NOV-09			
Hardware/Software Development	WR	NSWC Dahlgren	3.117	0.326	NOV-08	1.000	NOV-09			
Hardware/Software Development	FFP	NORTHROP GRUMMAN	0.236	0.000		0.000				
Hardware/Software Development	WR	NAVAIR/KDH	0.200	0.000		0.000				
Subtotal Product Development			4.653	0.603		2.000				
Remarks:										
Engineering Services	WR	NSWC CRANE	0.737	0.070	NOV-08	1.000	NOV-09			
Engineering Services	WR	NSWC DAHLGREN	0.358	0.098	NOV-08	1.000	NOV-09			
Engineering Services	XFER	IWS PERISCOPE DETECT	4.193	0.000		0.000				
ILS FUNCTIONS	WR	NSWC DAHLGREN	0.680	0.000		1.000	NOV-09			
Subtotal Support Costs			5.968	0.168		3.000				
Remarks:										
T&E FUNCTIONS	WR	COMOPTEVFOR	0.018	0.600	NOV-08	0.000				
T&E FUNCTIONS	WR	NSWC DAHLGREN	0.738	0.260	NOV-08	0.250	NOV-09			
T&E FUNCTIONS	WR	NSWC CRANE	0.440	0.000		0.247	NOV-09			
Subtotal Test and Evaluation			1.196	0.860		0.497				
Remarks:										
MANAGEMENT SUPPORT	VARIOUS	VARIOUS	0.250	0.049	NOV-08	0.000				
TRAVEL			0.143	0.025	NOV-08	0.000				
Subtotal Management Services			0.393	0.074		0.000				
Remarks:										
Total Cost			12.210	1.705		5.497				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 0166/SPS Improvement Program	

Fiscal Year	FY08				FY09				FY10			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Acquisition Milestones	SD&D				MS C/LRIP							
Program Phases	Block											
Block 1 EOIR Sensors	INITIAL INSTALL											
Block 3 Software Integration					INITIAL INSTALL (TEST SHIP)							
Test & Evaluation Milestones												
Development Test	DT-B1											
High Intensity Searchlight Environmental Test												
System Integration Testing												
Production Milestones												
FY08 Systems (1)	1 System											
FY09 Systems (5)					5 Systems (Procurement)							
FY10 Systems (5)									FY 10 Systems			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 0166/SPS Improvement Program		
Schedule Profile		FY 2008	FY 2009	FY 2010			
PCA			3RD QTR				
SD&D		1ST - 4TH QTR	1ST - 3RD QTR				
DT-B1		2ND QTR					
OT			3RD QTR				
MILESTONE C/FRP			4TH QTR				
IOC			4TH QTR				
DT-B3/B4			2ND - 4TH QTR				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/QRCC		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	25.946	30.451	25.664				
RDT&E Articles Qty	0	0	0				
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, Commercial Processors, 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 the Navy's AN/UYQ-70 standard display and command table for human-system interface, commercially available local area network access units and circuit cards, and commercially available fiber optic cabling. SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A/B electronic countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile and Phalanx Close-In Weapon System and is installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to integrate with ACDS and Cooperative Engagement Capability (CEC) on CV(N), LPD-17, LHD and LHA ship classes. SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 leveraged critical experiments and re-use of technology and software from SSDS MK1. SSDS MK2 is in development and integrates other ship self defense elements, such as, AN/SPQ-9B radar, NATO Sea-sparrow system, CEC and Tactical Data Links for joint interoperability. SSDS MK2 provides enhanced capabilities for Self Defense against air, and surface threats using both ownship and remote data to address 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 Strike Group/Expeditionary Strike Group Interoperability; and promote standardization. It also introduces new shipboard tactical displays and support equipment, and integrates advanced systems such as Evolved NATO Sea-sparrow missile system and SLQ-32 SEWIP. In order to meet the Navy's warfighting capabilities and modernization concepts described in SEA POWER 21, Navy Open Architecture (NOA) is being introduced in conjunction with SSDS P3I COTS Tech Refresh. 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. SSDS MK 2 would rehost existing tactical computer program applications to the Open Architecture Computing Environment (OACE) specifications/ equipment suite concurrent with P3I Commercial off the Shelf (COTS) Tech Refresh cycles,							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 2178/QRCC
prior to full migration and integration with other OA applications for implementation on future classes of ships. Tech Refresh cycles are driven by COTS obsolescence. Follow on Operational Test and Evaluation of SSDS MK 2 has been conducted on the CVN Class and is being conducted on the LPD Class SSDS Combat Systems in FY07/08. Follow on Operational Test and Evaluation of the ESSM Integration with SSDS MK 2 is also being conducted on the CVN Class in FY08. Live Fire, Combat System end-to-end testing is being conducted on the Self Defense Test Ship in FY07/08. The SSDS MK 2 Self Defense Combat System is being tested on the Self Defense Test Ship against Anti Ship Cruise Missile threats in the LPD 17 and CVN/LHD Class configurations to support this effort. These tests will serve as a transition phase to the Ship Self Defense Capstone Air Warfare T&E Enterprise. Additional Self Defense Test Ship Live Fire tests against Anti Ship Cruise Missile threats are planned in FY10 in the CVN/ESSM and LHA 6 configurations, per the Ship Self Defense Capstone Air Warfare T&E Enterprise and DOT&E direction. Follow on Operational Test and Evaluation of SSDS Mk 2 will also be conducted on the LHD 7/8 in FY09 and CVN Class (P3I) COTS Tech Refresh in FY09. These tests will provide T&E data for the evaluation of the P3I COTS Tech Refresh Open Architecture Migration and Probability of Raid Annihilation (PRA) calculations.		

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	
		PROJECT NUMBER AND NAME 2178/QRCC	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	12.946	16.451	12.174
RDT&E Articles Quantity	0	0	0
Prepare and conduct comprehensive Land Based combat system tests on SSDS MK 2 and SSDS MK 1 & SSDS MK2 P3I COTs Tech Refresh OACE(Open Architecture Computing Environment) configurations at Wallops Island for CVN, LPD 17, LHD 7/8, LHA 6 ship classes, including test preparation, integration, engineering and development tests, data collection and analysis, correction and verification of deficiencies in FY08 through FY10 in support of SSDS Combat System Certification, SSDS TEMP and Ship Self Defense Air Warfare Capstone Enterprise TEMP at-sea test events. Prepare, conduct and analyze At-Sea combat system tests for SSDS MK2 in LPD 17 and live fire testing on the Self Defense Test Ship in FY08. Prepare, conduct and analyze At-Sea combat system tests in support of the Ship Self Defense Air Warfare Capstone Enterprise for the ESSM integration in FY08/09, SSDS MK 2 P3I COTs Tech Refresh OACE integration in FY09/10, SSDS MK2 LHD 7/8 configuration in FY08/09/10, LHA 6 configuration and LHA 6 live fire testing on the Self Defense Test Ship in FY10, CVN 78 live fire testing on Self Defense Test Ship, Design Agent test, analyze, and fix for the computer software program in support of testing and Operation of the Ship Self Defense Facility Wallops Island will also be accomplish to support the test events.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	13.000	14.000	13.490
RDT&E Articles Quantity	0	0	0
Conduct System Engineering, Design, Development, Software Rehost, Hardware/Software integration and Factory and Environmental Qualification testing of P3I COTs Tech Refresh for SSDS MK 1 and SSDS MK2 Tech Refresh cycles. The FY08 through FY10 Tech Refresh cycle for SSDS MK 1 and SSDS MK 2 upgrades to MOD 1C/2C/3C/5C configurations includes the OACE and the first major refresh of SSDS MK 1 (designated as MOD 5C) migration to OACE. After FQT/EQT completion, system will be delivered for Test and Evaluation. FY10 includes systems engineering for the integration of specific MH-60R Helicopter capabilities.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN 5239 SSDS	29.032	46.549	34.079
PE 0603382N / 0324 (Advanced Combat System Technology)	7.307	4.329	1.677
PE 0603658N / 2039 (Cooperative Engagement Capability (CEC))	31.060	38.212	56.586
PE 0604307N / 1447 (Aegis Surf Combatant Combat Sys Imp)	148.332	187.905	178.457
PE 0603582N / 0164 (Common Network Interface (CNI))	50.773	64.172	22.558

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 2178/QRCC	
D. 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 P3I COTS tech Refresh hardware suites, where the initial system Tech Refresh Development will occur under a CPFF type contract with ship COTS conversion equipment/kits procured on FFP contracts. A new design agent and Life Cycle Maintenance CPFF contract was awarded in FY05 and a follow-on contract will be awarded in FY09, to support future SSDS MK 2 system/software maintenance and system upgrades including the P3I COTS Tech Refresh cycles.			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/QRCC					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Systems Engineering	WR/WX	NSWC DD-Dalhgren, VA	42.231	1.052	OCT-08	0.900	OCT-09			
Systems Engineering	SS/FP	JHU/APL - Laurel MD	39.648	2.500	OCT-08	1.800	OCT-09			
Systems Engineering	WR/WX	NSWC PHD Pt Hueneme CA	18.903	0.000		0.000				
Systems Engineering	WR/WX	CDSA DN Dam Neck VA	10.681	0.950	OCT-08	0.800	OCT-09			
Systems Engineering	WR/WX	NSWC IH-Indian Head, MD	3.056	0.000		0.000				
Display Development Kits	SS/FP	Lockheed Martin St Paul MN	3.958	0.400	OCT-08	0.000				
Systems Eng/Dev/Integrate	SS/CPFF	RSC (5110) San Diego CA	19.437	8.397	OCT-08	7.402	OCT-09			
Systems Eng/Dev/Integrate	SS/CPFF	RSC (TBD) San Diego CA	0.000	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5132) San Diego CA	20.576	0.000		0.000				
Award Fees	SS/CPAF	RSC (5132) San Diego CA	3.603	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5108) San Diego CA	98.130	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5466) San Diego CA	20.353	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPFF	RSC (5104) San Diego CA	23.685	0.000		0.000				
Award Fees	SS/CPAF	RSC (5108) San Diego CA	11.208	0.000		0.000				
Award Fees	SS/CPAF	RSC (5466) San Diego CA	2.163	0.000		0.000				
RisK Reduction/EMD	Various	Various	76.366	0.000		0.000				
Misc.	Various	Various	2.806	0.000		1.050	OCT-09			
Subtotal Product Development			396.804	13.299		11.952				
Remarks:										
QA/RMA	WR/WX	NWAS Corona	9.954	0.000		0.000				
Subtotal Support Costs			9.954	0.000		0.000				
Remarks:										
Development Test & Evaluation	WR/WX	NSWC PHD Pt Hueneme CA	59.796	7.652	OCT-08	4.903	OCT-09			
Development Test & Evaluation	WR/WX	NSWC DD-Dalhgren, VA	4.733	0.270	OCT-08	0.195	OCT-09			
Development Test & Evaluation	WR/WX	NSWC DD-Wallops Is, VA	30.416	2.700	OCT-08	3.245	OCT-09			
Development Test & Evaluation	SS/FP	JHU/APL - Laurel MD	11.062	2.400	OCT-08	1.568	OCT-09			
Development Test & Evaluation	WR/WX	NSWC Corona - Corona, CA	1.388	0.235	OCT-08	0.620	OCT-09			

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/QRCC						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				
Development Test & Evaluation	WR/WX	OPTEVFOR - Norfolk, VA	2.156	0.270	OCT-08	0.389	OCT-09				
Development Test & Evaluation	SS/CPFF	RSC(5110)-San Diego, CA	7.355	1.525	OCT-08	1.059	OCT-09				
Development Test & Evaluation	SS/CPFF	RSC(5466)-Tucson, AZ	2.180	0.000		0.000					
Development Test & Evaluation	WR/WX	CDSA DN Dam Neck VA	0.905	0.600	OCT-08	0.195	OCT-09				
Miscellaneous	Various	Various	5.546	0.000		0.000					
Subtotal Test and Evaluation			125.537	15.652		12.174					
Remarks:											
Program Management Support			15.795	1.500	OCT-08	1.538	OCT-09				
Subtotal Management Services			15.795	1.500		1.538					
Remarks:											
Total Cost			548.090	30.451		25.664					

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)					PROJECT NUMBER AND NAME 2178/QRCC			
Fiscal Year		2008				2009				2010			
		1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones													
System/Software Development SSDS P3I COTs Tech Refresh (OACE) Migration													
MOD 1B/2B		Pre & Post Certification Support											
MOD 5C				System Engineering Design Develop / Test								FSIT	
Test & Evaluation													
SSDS MK 2 MOD 1 / 2		Mod 1 OT / OT III-F											
		Mod 2 OT		OT-IIIIC PHASE 2									
SSDS MK 2 MOD 1A / 3A					DT / OT III-F Ph 2	CSSQT CVN 74 Mod 1A							
		Mod 3A SIT/ Eng Test /											
		CSSQT LHD 7 Mod 3A								DT / OT IIIIE P 2		CSSQT LHD 8 Mod 3A	
SSDS MK 2 P3I/OACE MOD 1B / 2B / 4B													
		Mod 1B SIT / Eng Test / DT				Mod 1B DT / OT-IIIIC Ph 2 / Ph 3 CSSQT LHD 8				Mod 2B SIT / Eng Test / Land Based DT at Wallops			
											Mod 4B SIT / Eng Test / Land		
Self Defense Test Ship (SDTS)									Mod 2A DT / OT IIIID			Mod 4B DT / OT IIIIH	
Hardware Ship Delivery													
Initial Baseline		Mod 1B CVN68 LBTS / SCSC W.I.	Mod 2A LPD 21	Mod 1B CVN 68			Mod 2B LPD 17 LBTS / W.I.		Mod 4B LRA 6 LBTS / CSACF			Mod 5C LSD LBTS / W.I.	
									Mod 4B LRA 6 LBTS / W.I.	Mod 2B LPD 18			

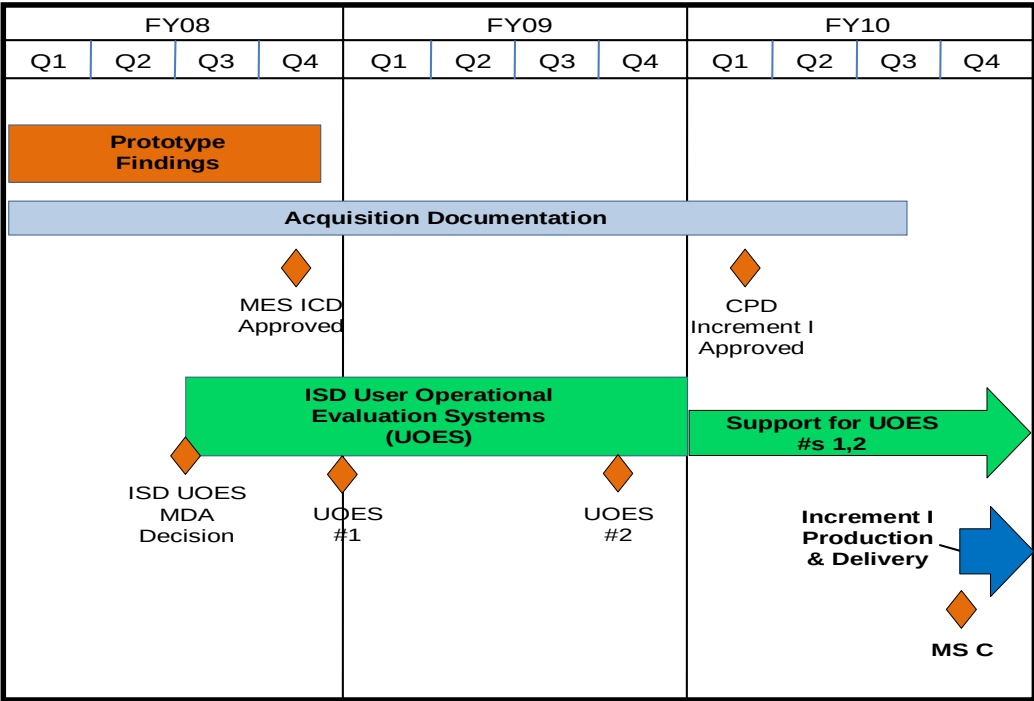
CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 2178/QRCC		
Schedule Profile		FY 2008	FY 2009	FY 2010			
SSDS MK2 MOD 1 / MOD 2							
- SEA BASED DT / OT		1Q-2Q					
- CSSQT		2Q	1Q				
SSDS MK 2 MOD 1A / 3A							
- SYSTEM INTEGRATION / ENG TESTING		1Q-3Q					
- LAND BASED DT		1Q-3Q					
- SEA BASED DT / OT				1Q-2Q			
- CSSQT		2Q & 4Q		1Q			
SSDS MK1/MK2 MOD 1B/2B/4B TECH REFRESH DEV							
- PRE POST CERTIFICATION SUPPORT							
- SYSTEM INTEGRATION / ENG TESTING		1Q-3Q	1Q&3Q-4Q	1Q-3Q			
- LAND BASED DT				3Q-4Q			
- SEA BASED DT / OT			2Q-4Q	1Q-4Q			
- CSSQT			2Q				
SSDS MK1/MK2 MOD 1C/2C/3C/5C TECH REFRESH							
- SYSTEM ENGINEERING DESIGN/DEV/TEST		3Q-4Q	1Q-4Q				
- SRR			3Q				
- PDR			4Q				
- CRITICAL DESIGN REVIEW				1Q			
- FACTORY SYSTEM INTEGRATION TEST				1Q-3Q			
- FACTORY QUALIFICATION TEST				4Q			
SDTS							
- LAND BASED DT			2Q-4Q	1Q-2Q			
- SEA BASED DT / OT		4Q		3Q-4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 3172/Joint Non-Lethal Weapons		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.188	3.722	4.298				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The scope of this project is to provide the fleet Expeditionary (specifically the Maritime Expeditionary Security Force) units with the capability of a portable maritime Integrated Swimmer Defense (ISD) system to engage combat swimmers/divers or unknown individuals underwater once they have been detected. The ISD program combines the detection and engagement operations in order to complete the swimmer defense picture for the fleet. The objective of the integrated swimmer defense system (ISD) is the development and deployment of an integrated system capable of being deployed by the expeditionary harbor security units (primarily the Maritime Expeditionary Security Force). ISD will be designed to detect, track, classify, warn, deter and neutralize divers and swimmers threats. ISD is important to protecting high value assets within harbors from the increasing threat of waterborne terrorist or combatants' attacks.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 3172/Joint Non-Lethal Weapons	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.721	2.719	1.300
RDT&E Articles Quantity	1	1	0
FY08/09 - Resources support the design, development, analysis, and evaluation of an expeditionary integrated swimmer defense capability. Utilizes an User Operational Evaluation System approach to refine requirements for transition to the ISD program of record.			
FY10 - Supports incorporation of evaluation feedback into the supporting DODAF architecture of the ISD CPD. Supports preparation for the ISD Milestone C decision. These funds also initiate the transition development work from several Future Naval Capabilities (FNC) projects geared toward increment II of ISD.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.467	1.003	2.998
RDT&E Articles Quantity	0	0	0
FY08/09 - Supports the testing of swimmer detection and engagement technologies. These resources integrate the detection and engagement systems into a comprehensive capability and sustainment of the two UOES prototype systems.			
FY10 - Resources facilitate the program management and acquisition support effort needed for the ISD capability to achieve Milestone C and its production decision. During this period the final selected swimmer engagement system will be tested/certified and the full ISD system Development Testing (DT), facilities testing, and Operational Testing (OT) will be conducted.			
C. OTHER PROGRAM FUNDING SUMMARY:			
None			
D. ACQUISITION STRATEGY:			
The acquisition strategy includes the integration of swimmer/diver detection sensors and using software to fuse the sensor track data thereby creating an end to end combat system capability for swimmer/diver defense. A Navy technical team will complete the concept refinement and technology development phase through the release of User Operational Evaluation Systems (UOES) and they will partner with industry for each UOES. In order to further refine the ISD requirements for a validated ISD Capability Production Document, two ISD User Operational Evaluation Systems (UOES) will be developed and evaluated. UOES 1 will be developed during FY-08 and will be delivered to designated MESF units in September 2008. A mature near production ready UOES 2 will be delivered in September 2009. The ISD program of record system configuration will be produced through an Acquisition Category (ACAT) program commencing in FY10 to procure component systems needed to bring the performance of the UOES prototypes up to the full production requirements.			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 3172/Joint Non-Lethal Weapons					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Hardware/Software Development - ISD	WR	NUWC Newport	1.628	2.450	FEB-09	0.500	FEB-10			
Hardware/Software Development - FNC Low Cost Swimmer Detection	WR	NUWC Newport	0.000	0.000		0.100	FEB-10			
Hardware/Software Development - FNC Terminal Swimmer Detection and Targeting	WR	NUWC Newport	0.000	0.000		0.050	FEB-10			
Subtotal Product Development			1.628	2.450		0.650				
Remarks: Resources utilized to produce the two ISD UOES prototypes. The ONR FNC Low Cost Swimmer Detection project will provide an active detection capability against underwater asymmetric threats to deployed naval forces and ships. There is the potential to augment the active detection capability with a passive fiber optic sensor that may have utility as a barrier and/or a means to support target ID. The ONR FNC Terminal Swimmer Detection and Targeting will provide a combat ID capability against underwater asymmetric threats to naval installations and forward deployed ships. Both of these FNC projects are prospective elements of the ISD increment II capability.										
Engineering Services	WR	NUWC Newport	0.828	0.807	FEB-09	0.598	FEB-10			
Engineering Services	WR	NSWC Panama City	1.200	0.000		0.000				
Subtotal Support Costs			2.028	0.807		0.598				
Remarks: Systems Engineering effort to design the baseline ISD capability.										
Test and Evaluation	WR	NUWC Newport	0.160	0.265	FEB-09	1.500	FEB-10			
Subtotal Test and Evaluation			0.160	0.265		1.500				
Remarks: Resources support developmental and operational testing as well as interoperability certification testing.										
Program Management	WR	NUWC Newport	0.200	0.200	FEB-09	1.550	FEB-10			
Program Management	WR	CECOM	0.172	0.000		0.000				
Subtotal Management Services			0.372	0.200		1.550				
Remarks:										
Total Cost			4.188	3.722		4.298				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)		PROJECT NUMBER AND NAME 3172/Joint Non-Lethal Weapons



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 3172/Joint Non-Lethal Weapons			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Increment I CR/TD Phase User Operational Eval Systems (UOES)		2ND QTR						
ISD INCREMENT I CPD				1ST QTR				
INCREMENT I - MS C				4TH QTR				
DT/OT				3RD QTR				
ISD INCREMENT I IOC								
ISD INCREMENT II CDD								
ISD INCREMENT II MS B SD&D								
INCREMENT II - MS C								
INCREMENT I FRP DR				4TH QTR				
INCREMENT II - IOC								

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)		PROJECT NUMBER AND NAME 9999/Congressional Add
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
	FY 2008	FY 2009	FY 2010	
9C22A - Autonomous Unmanned Surface Vessel	0.968	1.197	0.000	
RDT&E Articles Quantity	0	0	0	
Autonomous Unmanned Surface Vessel (AUSV) supports the U.S. Navy's Anti-Terrorism Force Protection (ATFP) as well as Homeland Defense missions. The AUSV can protect commercial harbors, coastal facilities such as commercial and military airports and nuclear power plants, inland waterways and large lakes. The vessel will utilize a variety of advanced sensing and perimeter monitoring equipment for surveillance and detection of Targets of Interest (TI).				
	FY 2008	FY 2009	FY 2010	
9C23A - Expeditionary Swimmer Defense	1.550	2.393	0.000	
RDT&E Articles Quantity	0	0	0	
Expeditionary Swimmer Defense Systems consists of an instrumented physical barrier that deters swimmers and divers from attempting to prohibited areas, and detects and localizes attempted intrusions.				
	FY 2008	FY 2009	FY 2010	
9D90A - Persistent Surveillance Wave Power-Buoy System	0.000	2.993	0.000	
RDT&E Articles Quantity	0	0	0	
Persistent Surveillance Wave Power-Buoy System is to create a buoy platform that generates sustainable power sufficient to energize a variety of sensors and communications elements to enhance the littoral security mission (Littoral Power Buoy - LPB).				
	FY 2008	FY 2009	FY 2010	
9D91A - Cyber Security	0.000	2.393	0.000	
RDT&E Articles Quantity	0	0	0	
Cyber Security is for development, procurement, and certification of Information Assurance systems as part of ACDS/SSDS upgrade kits to replace and/or augment the obsolescent equipment in CVN and				

CLASSIFICATION:		UNCLASSIFIED																																													
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																								
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)																																												
COST (In Millions)	FY 2008	FY 2009	FY 2010																																												
Total PE Cost	73.829	46.715	34.236																																												
0167 / 5in Rolling Airframe Missile	41.478	26.439	27.065																																												
0173 / NATO Sea Sparrow	19.653	9.605	7.171																																												
9081 / Phalanx CIWS SEARAM	6.142	0.000	0.000																																												
9999 / Congressional Add	6.556	10.671	0.000																																												
A. MISSION DESCRIPTION: 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). 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 (9081/9853A). Missile improvements 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), future concepts studies and self-destructing ammunition, and Future Phalanx Next Generation improvements. FY08/FY09 Congressional Add provides funding for Future Phalanx Next Generation improvements. B. PROGRAM CHANGE SUMMARY: <table border="1"> <tr> <td>Funding:</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td>72.670</td> <td>36.238</td> <td>34.709</td> </tr> <tr> <td>FY10 President's Budget</td> <td>73.829</td> <td>46.715</td> <td>34.236</td> </tr> <tr> <td>Total Adjustments</td> <td>1.159</td> <td>10.477</td> <td>-0.473</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Adjustments</td> <td>0.000</td> <td>10.573</td> <td>0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td>-0.757</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Program Adjustments</td> <td>2.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>-0.084</td> <td>-0.096</td> <td>-0.473</td> </tr> <tr> <td>Total</td> <td>1.159</td> <td>10.477</td> <td>-0.473</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	72.670	36.238	34.709	FY10 President's Budget	73.829	46.715	34.236	Total Adjustments	1.159	10.477	-0.473	(U) Summary of Adjustments				Congressional Adjustments	0.000	10.573	0.000	SBIR/STTR/FTT Assessment	-0.757	0.000	0.000	Program Adjustments	2.000	0.000	0.000	Rate/Misc Adjustments	-0.084	-0.096	-0.473	Total	1.159	10.477	-0.473
Funding:	FY 2008	FY 2009	FY 2010																																												
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0167/5in Rolling Airframe Missile		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	41.478	26.439	27.065				
RDT&E Articles Qty	0	0	0				
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. FY08-10 funding continues development and testing of a Block 2 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:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 0167/5in Rolling Airframe Missile	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Block 2	41.309	26.326	26.948
RDT&E Articles Quantity	0	0	0
FY08-10 funds development and testing of RAM Block 2 upgrade.			
	FY 2008	FY 2009	FY 2010
Travel	0.169	0.113	0.117
RDT&E Articles Quantity	0	0	0
FY08-10 funds travel.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN LINE 5238 (RAM)	4.038	14.649	7.762
WPN LINE 2242 (RAM)	75.179	70.778	74.784
D. ACQUISITION STRATEGY: The RAM Program uses directed sole source contracts with Raytheon Systems Company, Tucson, AZ.			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0167/5in Rolling Airframe Missile					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
Primary Hardware Development	SS/CPFF	Raytheon/Tucson, Louisville	7.434	0.000		0.000				
Primary Hardware Dev Support	WR	China Lake/CA	1.266	0.000		0.000				
Block 1 Eng/Interface Support	SS/CPFF	Raytheon/Tucson, Louisville	0.400	0.000		0.000				
Block 1 MOD 3 Interface Support	CPFF	JHU/APL	0.981	0.000		0.000				
Block 2 Upgrade	SS/CPAF	Raytheon/Tucson, Louisville	78.818	13.200	OCT-08	6.859	NOV-09			
Block 2 Upgrade	WR	China Lake/NRL/Dahlgren	13.810	0.415	OCT-08	2.878	NOV-09			
Block 2 Upgrade	CPFF	JHU/APL	1.300	0.135	OCT-08	0.139	NOV-09			
Block 2 Product Support		various	2.104	1.417	OCT-08	1.462	NOV-09			
Subtotal Product Development			106.113	15.167		11.338				
Remarks:										
Studies and Analyses			1.210	0.411	OCT-08	0.424	NOV-09			
Subtotal Support Costs			1.210	0.411		0.424				
Remarks:										
DT&E/OT&E/FOT&E/	SS/CPAF	Raytheon/Tucson, Louisville	9.093	8.898	OCT-08	10.868	NOV-09			
FOT&E	WR	China Lake/CA, PHD/CA	4.674	0.000		0.000				
Test Support	WR	China Lake/CA, PHD/CA	10.398	1.850	OCT-08	4.318	NOV-09			
Miscellaneous		various	1.421	0.000		0.000				
Subtotal Test and Evaluation			25.586	10.748		15.186				
Remarks:										
Travel			0.653	0.113	OCT-08	0.117	NOV-09			
Subtotal Management Services			0.653	0.113		0.117				
Remarks:										
Total Cost			133.562	26.439		27.065				

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)						PROJECT NUMBER AND NAME 0167/5in Rolling Airframe Missile					
KEY EVENTS				FY08				FY09				FY10			
				1	2	3	4	1	2	3	4	1	2	3	4
RAM BLOCK 2 DEVELOPMENT								12/08 GMWS CDR				2/10 MS C/LRIP			
DEVELOPMENTAL/OPERATIONAL TESTING (DT/OT)								CTV Firings 06/09				11/09			
DT-B-1 (IT-B-1) CTV Firings								GTV Firings 12/09				7/10			
DT-B-2 (IT-B-2) GTV Firings								DT/OT- ET05 9/10							
DT/OT-IIC, ET05, SSDS MK2, RAM BLK 2															
LEGEND:															

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0167/5in Rolling Airframe Missile		
Schedule Profile		FY 2008	FY 2009	FY 2010			
BLOCK 2 DEVELOPMENT		1Q-4Q	1Q-4Q	1Q-4Q			
DT- B-1 CTV Firings			3Q-4Q	1Q			
DT-B-2 GTV Firings				1Q-4Q			
DT-OT				4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	19.653	9.605	7.171				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
This project encompasses three (3) primary efforts to enhance ship self defense: 1. (U) EVOLVED SEASPARROW MISSILE (ESSM): A cooperative effort among 10 NATO SEASPARROW Nations and 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. 3. (U) Amphibious Self-Defense AAW Probability of Raid Annihilation (PRA) Improvement- The Amphibious Self-Defense AAW PRA Improvement program provides the L-Class Amphibious ships (LHA, LHD, LSD) with an improved PRA through full integration of the weapons and sensors of the combat system. This improvement introduces the Multi-Sensor Integration (MSI) unit that receives fire control and sensor data from ship radars, fuses them into an integrated radar picture and provides composite track reports to the combat system. Mk 15 CIWS is upgraded to a Block 2 configuration with a much improved search and track radar. No longer stand-alone, CIWS will be integrated into the sensor suite and provide fire control quality search and track data to the combat system via the MSI unit. As a fallback measure, CIWS Blk 2 can also report directly to the MK 23 Target Acquisition Radar Threat Evaluation Weapons Assignment (TEWA) providing fire control quality track data at a very fast update rate for targets to the horizon. Target Acquisition System (TAS) itself will receive an upgrade of its OSM unit to accommodate direct inputs from both the MSI and CIWS units. This improvement program provides full integration of the combat system and will meet or exceed threat detection and designation requirements through 2020. Use of the MSI will provide stable track data through a composite track picture reported to the combat system. Without this improvement, PRA of the L-Class ships would continue to degrade to an unsatisfactory point in the mid term.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
EVOLVED SEASPARROW MISSILE	10.834	7.317	6.389
RDT&E Articles Quantity	0	0	0
Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S share of cooperative efforts associated with ESSM engineering studies and other development initiatives.			
	FY 2008	FY 2009	FY 2010
AMPHIBIOUS SELF- DEFENSE AAW IMPROVEMENT	8.261	1.818	0.382
RDT&E Articles Quantity	0	0	0
FY08-FY10 Amphibious Self-Defense AAW improvement for LHD 1-6 and LHA class ships Leveraging the MK 15 CIWS Blk 2 upgrade program, the MSIT unit developed for the Self-Defense Test Ship and the RAM MOD 3 Launcher upgrade program, L-Class PRA will be greatly enhanced. Improvements to the MK 23 TAS made to support and integrate the RAM Mod 3 Launcher will be leveraged to integrate the MSI unit and the CIWS Blk 2 GFCS. The MSI will have the greatest positive impact on PRA as composite track data will be developed and provided to the combat system. The short range air radar picture will be significantly improved through the use of the CIWS upgraded search and track radar providing track data at a very fast update rate.			
	FY 2008	FY 2009	FY 2010
NATO SEASPARROW - MK -91 REACHITECTURE /SDSMS	0.558	0.470	0.400
RDT&E Articles Quantity	0	0	0
FY08-10 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.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow	
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
WPN Line 2307 (ESSM)	82.712	84.810	51.388
OPN Line 5237 (NATO SEA SPARROW)	28.528	10.290	13.556
D. ACQUISITION STRATEGY: ESSM is a directed sole source contract to Raytheon Missile Systems Company. The MK 29 ESSM Launcher Upgrade and REARC/SSDS Intergration effort was a directed sole source contract to Raytheon Company (IDS).			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL			PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date			
ESSM-Primary Hardware Development	LC/CPAF	Raytheon	143.356	0.000		0.000				
ESSM-Primary Hardware Development	Allot	TDW	3.746	0.000		0.000				
Amphin Self-defense PRA Imp	Various	Various	8.261	1.818	FEB-09	0.382	OCT-09			
Ancillary Hardware Development	CPAF	Lockheed/UDLP	46.706	0.000		0.000				
Systems Engineering	Various	Various	22.622	0.000		0.000				
MK 29/ESSM Launcher upgrade	LC/CPAF	Raytheon SYS	8.521	0.000		0.000				
NATO-Primary Hdwe Dev	CPFF	Raytheon SYS	30.627	0.000		0.000				
Software development/Test	CPFF	Raytheon SYS	9.094	0.000		0.000				
Systems Engineering/Firing Spt	Various	Various	6.133	0.425	NOV-08	0.450	NOV-09			
Subtotal Product Development			279.066	2.243		0.832				
Integrated Logistics Support	WR	NSWC PHD	3.568	0.000		0.000				
Engr Support	WR	Various	4.207	0.000		0.000				
MK 29/ESSM Launcher Support	WR	Dahlgren/PHD	0.375	0.000		0.000				
Engr Support	WR	Various	0.195	0.000		0.000				
NATO-MK 91/SSDS Integ	WR	Dahlgren/PHD	0.834	0.000		0.000				
Engr Support	WR	Various	6.364	0.000		0.000				
Engr Support	WR	APL	0.600	0.300	OCT-08	0.300	OCT-09			
Subtotal Support Costs			16.143	0.300		0.300				
Remarks:										
Developmental Test & Evaluation	WR	NAWC CL	14.493	0.645	NOV-08	0.735	NOV-09			
OPEVAL/TECHEVAL/Test Firings	WR	Various (Corona, IHD, Dalhgren, NSWC, PHD)	13.606	0.000		0.000				
Developmental Test & Evaluation	CPFF	APL	2.504	0.300	OCT-08	0.300	OCT-09			
ESSM Test & Evaluation	Various	Various	4.179	4.204	DEC-08	3.110	DEC-09			
Developmentall Test & Evaluation	WR	Dalhgren	0.418	0.000		0.000				
Subtotal Test and Evaluation			35.200	5.149		4.145				
Remarks:										

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				
ESSM-ENGR SPT	WR	Various	4.913	0.000		0.000					
ESSM-PM SPT	WR	Various	0.498	0.000		0.000					
ESSM-Labor	Allot/WR		10.557	1.543	OCT-08	1.594	OCT-09				
ESSM-Travel	Allot/WR		2.382	0.200	OCT-08	0.200	OCT-09				
ESSM-Misc	Various	Various	2.065	0.000		0.000					
NATO Travel/Misc	0	Various	2.001	0.170	OCT-08	0.100	OCT-09				
Subtotal Management Services			22.416	1.913		1.894					
Remarks:											
Total Cost			352.825	9.605		7.171					

CLASSIFICATION:		UNCLASSIFIED			
EXHIBIT R-4, SCHEDULE PROFILE					DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)		PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow	

Activity Name	FY08	FY09	FY10
Production MOU			
Buy Yr			8/10 Delivery
FY07			
FY08	4/08 CA 		
FY09		5/09 CA 	
FY10			5/10 CA
Third Party Sales Production			
Buy Yr			
UAE FMS	4/08 CA 	5/09 CA 	

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 0173/NATO Sea Sparrow		
Schedule Profile		FY 2008	FY 2009	FY 2010			
FY 07 FRP DELIVERIES				4Q			
FY 08 FRP CONTRACT AWARD		3Q					
FY 09 FRP CONTRACT AWARD			3Q				
FY 10 FRP CONTRACT AWARD				3Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)			PROJECT NUMBER AND NAME 9081/Phalanx CIWS SEARAM		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	6.142	0.000	0.000				
RDT&E Articles Qty	0	0	0				
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 1/2 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. FY08 funding is for combat system integration and testing of the Block 1B Baseline 2 (radar upgrade) into the L-Class CS suite.							

CLASSIFICATION:	UNCLASSIFIED								
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009						
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 9081/Phalanx CIWS SEARAM							
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
	FY 2008	FY 2009	FY 2010						
SeaRAM Development/Phalanx Improvements	6.142	0	0						
RD T&E Articles Quantity	0	0	0						
FY08 funding is for combat system integration and testing of the Phalanx CIWS Block 1B Baseline 2 (radar upgrade) into the L-Class CS suite.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
WPN LINE 4205 (CIWS)	242.824	163.284	158.896						565.004
D. ACQUISITION STRATEGY: Phalanx CIWS programs use directed sole source contracts with Raytheon Systems Company, Tucson, AZ.									
E. MAJOR PERFORMERS: Raytheon Systems Company - Tucson, AZ and Louisville, KY - SeaRAM Prime Contractor for development. Naval Air Weapons Center, China Lake - China Lake, CA - supporting SeaRAM development and testing. Naval Surface Warfare Center, Port Hueneme - Port Hueneme, CA - supporting development, testing, integration and test ranges.									

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604756N/SHIP SELF DEFENSE (ENGAGE: HARD KILL)	PROJECT NUMBER AND NAME 9999/Congressional Add	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9853A/CIWS Phalanx Future Concepts/Next Generation Improvements	6.556	10.671	0.000
RD T&E Articles Quantity	0	0	0
FY08/FY09 Congressional Add provides funding for Future Phalanx Next Generation improvements.			

CLASSIFICATION:			UNCLASSIFIED				
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5			R-1 ITEM NOMENCLATURE 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	36.461	63.780	88.895				
0954 / Shipboard EW Improvement Program	27.448	54.380	21.223				
2190 / NULKA Decoy	4.313	3.017	4.797				
3227 / SEWIP Increment 2	0.000	0.000	62.875				
9999 / Congressional Add	4.700	6.383	0.000				

A. MISSION DESCRIPTION:

0954 - The Surface Electronic Warfare Improvement Program (SEWIP) provides enhanced Electronic Warfare (EW) capabilities to existing and new ship combat systems to improve Anti Ship Missile Defense (ASMD), counter-targeting and counter-surveillance capabilities, as well as improved battlefield situational awareness. The SEWIP employs an evolutionary acquisition and incremental development strategy to upgrade surface EW capabilities via a series of block upgrades to the AN/SLQ-32(V) system, and field EW improvements to keep pace with the ASMD threat.

2190 - 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. In FY08 the program completed the development of DLP Software Version 6_3, tested it at sea and certified it for Fleet use. Future efforts involve development of the capability for high value unit protection.

3227 - SEWIP Block 2 is expected to be a separate ACAT II program to develop an upgraded antenna, receiver, and combat system interface for SLQ-32. The upgrades are necessary in order to pace the threat, improving detection, accuracy, and mitigation of Electromagnetic Interference (EMI). (SEWIP Block 2 has funding in FY08 and FY09 under 0954/Shipboard EW Improvement Program. For FY10 SEWIP Block 2 is a separate project 3227/SEWIP Increment 2.)

FY08 Congressional Adds: 9C24A EW Concept Demonstrator for LCS of \$.773M; 9243A Advanced Radar Absorbing Tile for Surface Ships for \$1.934M; 9C25A Congressional Add for \$1.993M

FY09 Congressional Adds: 2441A NULKA Decoy System and Mk 53 Decoy Launch System for \$1.596M; 9D92A Shipboard Electronic Warfare Sustainment Training for \$3.191M; 9D93A Accelerated Improvement for Active Surface Electronic Warfare Systems for \$1.596M

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	38.365	57.574	21.842
FY10 President's Budget	36.461	63.780	88.895
Total Adjustments	-1.904	6.206	67.053
(U) Summary of Adjustments			
Congressional Adjustments	0.000	6.227	0.000
SBIR/STTR/FTT Assessment	-0.362	0.000	0.000
Program Adjustments	-1.500	0.000	68.339
Rate/Misc Adjustments	-0.042	-0.021	-1.286
Total	-1.904	6.206	67.053

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	27.448	54.380	21.223				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Surface Electronic Warfare Improvement Program (SEWIP) provides enhanced Electronic Warfare (EW) capabilities to existing and new ship combat systems to improve Anti Ship Missile Defense (ASMD), counter-targeting and counter-surveillance capabilities, as well as improved situational awareness. The SEWIP employs an evolutionary acquisition and incremental development strategy to upgrade surface EW capabilities via a series of block upgrades to the AN/SLQ-32(V) system, and field EW improvements to keep pace with the ASMD threat. SEWIP will provide required EW capabilities and will incorporate technology advances as they become available to provide incremental upgrades and improvements in performance. SEWIP Block 1 is segmented into Block 1A, and Block 1B. Block 1A upgrades the AN/SLQ-32 pulse-processing computers and the display console allowing the system to more quickly identify threats and better display the information to the operator. Block 1A Electronic Surveillance Enhancements (ESE) pulse processing computers and the Improved Control and Display (ICAD) Human System Interface (HSI) console partially open the electronic warfare system architecture to support subsequent EW capability upgrades. Block 1A is in production with the FRP decision provided August 2006. Block 1B adds the Specific Emitter Identification (SEI) receiver capabilities in a stand-alone configuration (Block 1B1), and in a fully ICAD-integrated configuration (Block 1B2). Block 1B also adds High Gain High Sensitivity (HGHS) (Block 1B3), a critical improvement for threat correlation, situational awareness, and extending the battle space. Block 1B SEI (1B1 and 1B2) completed Milestone B and at-sea DT/OT testing in FY08. SEWIP Block 2 is expected to be a separate ACAT II program to develop an upgraded antenna, receiver, and combat system interface for SLQ-32. The upgrades are necessary in order to pace the threat, improving detection, accuracy, and mitigation of Electromagnetic Interference (EMI). (SEWIP Block 2 has funding in FY08 and FY09 under 0954/Shipboard EW Improvement Program; For FY10 SEWIP Block 2 is a separate project 3227/SEWIP Increment 2.)							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	12.362	1.121	0.000
RDT&E Articles Quantity	0	0	0
Block 1B1/1B2 SEI. Transitioned stand alone Specific Emitter Identification (SEI) RDC under formal acquisition as Block 1B1. Completes Improved Control and Display (ICAD)-integrated SEI (Block 1B2) with display upgrades and Network Centric Warfare Electronic Support (NCWES) - all added capability to the AN/SLQ-32B(V) System. ICAD improvements provide reduced workload for the operator with Human Systems Interface (HSI) enhancements, Mission Planning capability, and Embedded Training. SEI provides a high confidence means of identifying contacts of interest within the operating area. NCWES provides a direct link to off-board information to enhance the awareness of the AN/SLQ-32 operator. Blocks 1B1 and 1B2 completed Milestone B and developmental and operational test and evaluation (TEC HEVAL and OPEVAL) at-sea in Feb 2008.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.028	20.743	10.450
RDT&E Articles Quantity	0	0	0
Block 1B3 builds off the foundation of the 1B2-enhanced AN/SLQ-32B(V) system and significantly increases warfighting capability with the addition of the High Gain High Sensitivity (HGHS). HGHS technology will be matured through System Development and Demonstration (SDD) and integrated with SLQ-32 through ICAD.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.371	4.586	10.773
RDT&E Articles Quantity	0	0	0
ESE and ICAD development will be extended to ships with active variants of SLQ-32 (that is, (V)3 and (V)4). Electronic Surveillance Enhancements upgrades (V(4) ESE) provides proven Block 1A (V)3 ESE processing adapted to the aircraft carrier variant of SLQ-32. Improved Control and Display (ICAD) for AN/SLQ-32 V(3/4) provides ICAD for both active EW system variants.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.687	27.930	0.000
RDT&E Articles Quantity	0	0	0
SEWIP Block 2 provides an upgraded receiver, antenna, and combat system interface for SLQ-32 for both forward fit (e.g., DDG-1000 and CVN 78) and back-fit ships. (FY10 funding reported under project 3227/SEWIP Increment 2.)			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program	
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN 2312 AN/SLQ-32	24.660	22.900	34.264
O&M,N AN/SLQ-32 (12CR0/1C2C)	4.711	5.668	5.820
D. ACQUISITION STRATEGY: The Surface EW Improvement Program (SEWIP) will develop Block upgrades to SLQ-32 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.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		
Ancillary Hardware Development			151.420	0.000		0.000			
ESE Development	SS / FFP	Northrop Grumman	9.425	3.667	NOV-08	2.266	NOV-09		
ICAD Development	SS / CPFF	GD-AIS	11.747	0.000		3.689	NOV-09		
ESE Development (Block 1A)	SS / CPFF	Northrop Grumman	0.471	0.000		0.000			
System Integrator	SS / CPAF	GD-AIS	13.792	2.217	MAR-09	2.159	NOV-09		
1B Development	SS / CPAF	GD-AIS	52.875	13.133	MAR-09	3.847	NOV-09		
Q-70 Mods	SS / CPFF	LM-EAGAN	3.491	0.000		0.000			
Block 2 Study/Development	MIPR/CPIF	BAE & Others	0.336	0.000		0.000			
Block 2 Preliminary Development	C / CPIF	TBD	0.000	20.967	SEP-09	0.000			
Block 2 SD&D	C / CPIF	TBD	0.000	0.000		0.000			
Subtotal Product Development			243.557	39.984		11.961			
Remarks:									
Block 1 Integrated Logistics Support	WR	NSWC Crane, DD, NRL	9.394	0.537	NOV-08	1.000	NOV-09		
Block 1 Government Engineering Support	WR	NSWC Crane, DD, NRL	33.521	3.006	NOV-08	3.862	NOV-09		
Block 1 Integration and Test	WR	NSWC Crane, DD, NRL	0.853	1.090	NOV-08	0.000			
Block 2 Integrated Logistics Support	WR	NSWC Crane, DD, NRL	0.495	0.460	NOV-08	0.000			
Block 2 Government Engineering Support	WR	NSWC Crane, DD, NRL	2.295	1.834	NOV-08	0.000			
Subtotal Support Costs			46.558	6.927		4.862			
Remarks:									
Developmental Test & Evaluation	Various	Various	8.958	0.000		0.000			
Block 1A Test Planning/T&E Events	WR	NSWC Crane, DD, NRL	11.036	0.000		0.000			
Block 1B Test Planning/T&E Events	WR	NSWC Crane, DD, NRL, NAVAIR, OPTEVFOR, NSWC PHD	7.673	0.000		0.000			
Former Block 1C Test Planning/T&E Events	WR	NSWC Crane, DD, NRL	0.000	0.500	NOV-08	2.000	NOV-09		
Block 2 Test Planning/T&E Events	WR	NSWC, Crane, DD, NRL	0.650	1.008	NOV-08	0.000			
Subtotal Test and Evaluation			28.317	1.508		2.000			
Remarks:									

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		
Block 1Program Management Support	C / FFP	SEAPORT	27.371	1.200	NOV-08	1.200	NOV-09		
Block 1Program Management Support	WR	NSWC Crane, DD, NRL	9.577	1.000	NOV-08	1.000	NOV-09		
Block 1 Travel	PD	NAVSEA Program Office Travel	0.605	0.100	NOV-08	0.200	NOV-09		
Block 2 Program Management Support	C / FFP	SEAPORT	0.208	1.159	NOV-08	0.000			
Block 2 Program Management Support	WX	NSWC Crane, DD, PHD, NRL	1.039	2.448	NOV-08	0.000			
Block 2 Travel	PD	NAVSEA Program Office Travel	0.000	0.054	NOV-08	0.000			
Subtotal Management Services			38.800	5.961		2.400			
Remarks:									
Total Cost			357.232	54.380		21.223			

CLASSIFICATION:																				UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009													
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)										PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program													
Fiscal Year		2008				2009				2010																							
		1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones		Block 1B MS B DR 				Block 1B1/1B2 MS C/FRP DR 				LL Proc 																							
Block 1 Development/Integration		1B1 SEI Transition				(Stand-alone RDC Transition to 1B1 Acquisition)																											
		1B2 Integrated SEI				(Mission Planning, Display Updates, & Embedded Training Development/Integration)																											
		1B3 HGHS Development and Integration																															
						V(4) ESE Development, Integration, and Test																											
						ICAD EA																											
Block 2 Development		New Receiver/Antenna/Interface Development (Development moved to PU 3227 starting in FY10)																															
Block 1B Test and Evaluation Milestones																																	
Development Test		1B1/1B2 Gov't LBT 				1B1/1B2 TECH EVAL 																											
Operational Test						1B1/1B2 OPEVAL																											

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 0954/Shipboard EW Improvement Program		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Block 1B MS B DR		2Q					
Block 1B1/1B2 MS C/FRP DR			1Q				
Block 1B3 LL Proc				1Q			
1B1 SEI Transition		1Q-4Q					
1B2 Integrated SEI		1Q-4Q					
1B3 HGHS Development and Integration		1Q-4Q	1Q-4Q	1Q-4Q			
V(4) ESE Development, Integration, and Test		4Q	1Q-4Q	1Q-4Q			
ICAD EA Development, Integration, and Test				1Q-4Q			
Block 2 New Receiver/Antenna/Interface Development		1Q-4Q	1Q-4Q				
1B1/1B2 Gov't LBT		1Q					
1B1/1B2 TECHEVAL		2Q					
1B1/1B2 OPEVAL		2Q					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 2190/NULKA Decoy		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.313	3.017	4.797				
RDT&E Articles Qty	0	0	0				
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. In FY08 the program completed the development of DLP Software Version 6_3, tested it at sea and certified it for Fleet use. Future efforts involve development of the capability for high value unit protection.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	PROJECT NUMBER AND NAME 2190/NULKA Decoy	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.926	1.100	1.200
RDT&E Articles Quantity	0	0	0
NULKA decoy subsystem integration and improvements to include Effectiveness Studies, Engineering Studies and Fly Out Tactics.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	1.917	0.597
RDT&E Articles Quantity	0	0	0
Continue the development of NULKA decoy enhancements to include increased duty cycle and Electromagnetic Compatibility (EMC).			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.387	0.000	0.000
RDT&E Articles Quantity	0	0	0
Conduct at-sea test of upgraded Decoy Launching System (DLS) software.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.000	3.000
RDT&E Articles Quantity	0	0	0
Upgrade Launching System software to provide CVN protection capability.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN 5530 Anti-Ship Missile Decoy System	42.099	37.965	37.128
O&MN: Nulka / Anti-Ship	3.920	3.280	4.859
D. ACQUISITION STRATEGY:			
NULKA is a joint cooperative program between United States and Australia in full rate production.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 2190/NULKA Decoy				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		
Primary Hardware Development	RC	NSWC Crane, IN	3.000	0.000		0.000			
Primary Hardware Development	RX	BAE Systems, Australia / Sippican, MA	5.656	0.000		0.000			
Primary Hardware Development	MIPR	BAE Systems, Australia	6.142	0.000		0.200	OCT-09		
Systems Engineering	WR	NRL, Washington, DC	11.396	1.237	OCT-08	1.444	OCT-09		
Systems Engineering	WR	NWAD China Lake, CA	0.120	0.000		0.000			
Mk 53 System Eng Changes	FFP	Sechan, PA	0.150	0.000		0.000			
Systems Engineering	RX	NSWC Dahlgren, VA	0.867	0.831	OCT-08	2.153	OCT-09		
Systems Engineering	RX	NSMA, VA	0.360	0.000		0.000			
Systems Engineering	WR	NSWC Crane, IN	0.788	0.713	OCT-08	0.750	OCT-09		
Subtotal Product Development			28.479	2.781		4.547			
Remarks:									
Development Support	RX	NRL, Washington, DC	1.314	0.000		0.000			
Software Development	WR	NSWC Dahlgren, VA	2.527	0.000		0.000			
Subtotal Support Costs			3.841	0.000		0.000			
Remarks:									
Developmental Test & Evaluation	WR	NSWC Dahlgren, VA	0.700	0.000		0.000			
Developmental Test & Evaluation	WR	NRL, Washington, DC	1.181	0.000		0.000			
Test Assets	WR	NRL, Washington, DC	0.701	0.000		0.000			
Test Support	WR	NSWC Louisville, KY	0.050	0.000		0.000			
Subtotal Test and Evaluation			2.632	0.000		0.000			
Remarks:									

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 2190/NULKA Decoy				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		
Program Management Support	FFP	SEAPORT	0.659	0.200	OCT-08	0.210	OCT-09		
Travel	PD	NAVSEA Program Office Travel	0.442	0.036	OCT-08	0.040	OCT-09		
Subtotal Management Services			1.101	0.236		0.250			
Remarks:									
Total Cost			36.053	3.017		4.797			

CLASSIFICATION:																							UNCLASSIFIED					
EXHIBIT R-4, SCHEDULE PROFILE																							DATE May 2009					
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5									PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)											PROJECT NUMBER AND NAME 2190/NULKA Decoy								
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones																												
Production Milestones																												
Test & Evaluation Milestones																												
Development Test																												
Operational Test																												

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 2190/NULKA Decoy		
Schedule Profile		FY 2008	FY 2009	FY 2010			
LSD 41/49 CLASS DT		2ND QTR					
LPD 20 DT		3RD QTR					
LPD 20 OT			1ST QTR				
USCG DEEPWATER DT			3RD QTR				
CVN DLP SOFTWARE (START)				1ST - 4TH QTR			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 3227/SEWIP Increment 2		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	62.875				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: SEWIP Block 2 is expected to be a separate ACAT II program to develop an upgraded antenna, receiver, and combat system interface for SLQ-32. The upgrades are necessary in order to pace the threat, improving detection, accuracy, and mitigation of Electromagnetic Interference (EMI). (SEWIP Block 2 has funding in FY08 and FY09 under 0954/Shipboard EW Improvement Program. For FY10, SEWIP Block 2 is a separate project 3227/SEWIP Increment 2.)							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	PROJECT NUMBER AND NAME 3227/SEWIP Increment 2	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.000	62.875
RD T&E Articles Quantity	0	0	0
SEWIP Block 2 is a new-start program to provide an upgraded receiver, antenna, and combat system interface for SLQ-32, for both forward fit (e.g., DDG-1000 and CVN 78) and back-fit ships. This upgrade will greatly improve the Navy's Surface Electronic Warfare (EW) capabilities against emerging threats, as well as better integrate EW capabilities into the combat direction/management system. This effort consists of transitioning technology developed and demonstrated by the Office of Naval Research. C. OTHER PROGRAM FUNDING SUMMARY: D. ACQUISITION STRATEGY: The Surface EW Improvement Program (SEWIP) will develop Block upgrades to SLQ-32 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. A full and open competition will be utilized to select the SEWIP Block 2 prime contractor.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 3227/SEWIP Increment 2				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		
Block 2 SD&D	C / CPIF	TBD	0.000	0.000		51.922	JAN-10		
Subtotal Product Development			0.000	0.000		51.922			
Remarks:									
Block 2 Integrated Logistics Support	WR	NSWC Crane, DD, NRL	0.000	0.000		0.735	NOV-09		
Block 2 & Future EW Government Engineering Support	WR	NSWC Crane, DD, NRL	0.000	0.000		2.942	NOV-09		
Subtotal Support Costs			0.000	0.000		3.677			
Remarks:									
Block 2 Test Planning/T&E Events	WR	NSWC Crane, DD, NRL	0.000	0.000		2.414	NOV-09		
Subtotal Test and Evaluation			0.000	0.000		2.414			
Remarks:									
Block 2 Program Management Support	C / FFP	SEAPORT	0.000	0.000		1.355	NOV-09		
Block 2 Program Management Support	WR	NSWC Crane, DD, PHD, NRL	0.000	0.000		3.407	NOV-09		
Block 2 Travel	PD	NAVSEA Program Office Travel	0.000	0.000		0.100	NOV-09		
Subtotal Management Services			0.000	0.000		4.862			
Remarks:									
Total Cost			0.000	0.000		62.875			

CLASSIFICATION:										UNCLASSIFIED																					
EXHIBIT R-4, SCHEDULE PROFILE																		DATE May 2009													
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5										PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)										PROJECT NUMBER AND NAME 3227/SEWIP Increment 2											
Fiscal Year		2008				2009				2010																					
		1	2	3	4	1	2	3	4	1	2	3	4																		
Acquisition Milestones																															
Block 2 Development		New Receiver/Antenna/Interface Development																													
Block 2 Test and Evaluation Milestones																															
Development Test																															
Operational Test																															

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)			PROJECT NUMBER AND NAME 3227/SEWIP Increment 2			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Block 2 MS B DR			4Q					
Block 2 New Receiver/Antenna/Interface Development		1Q-4Q	1Q-4Q	1Q-4Q				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604757N/SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	PROJECT NUMBER AND NAME 9999/Congressional Add	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9C24A Electronic Warfare Concept Demonstrator for the Littoral Combat	0.773	0.000	0.000
RDT&E Articles Quantity	0	0	0
Develop Electronic Warfare Concept Demonstrator for the Littoral Combat System.			
	FY 2008	FY 2009	FY 2010
9C25A	1.993	0.000	0.000
RDT&E Articles Quantity	0	0	0
Block 1B3 builds off the foundation of the 1B2-enhanced AN/SLQ-32B(V) system and significantly increases warfighting capability with the addition of the High Gain High Sensitivity (HGHS).			
	FY 2008	FY 2009	FY 2010
9243A Advanced Radar Absorbing Tiles for Surface Ships	1.934	0.000	0.000
RDT&E Articles Quantity	0	0	0
Develop advanced radar absorbing materials.			
	FY 2008	FY 2009	FY 2010
2441A NULKA Decoy System and Mk 53 Decoy Launch System	0.000	1.596	0.000
RDT&E Articles Quantity	0	0	0
Develop capatability improvements for shipboard radars.			
	FY 2008	FY 2009	FY 2010
9D92A Shipboard Electronic Warfare Sustainment Training	0.000	3.191	0.000
RDT&E Articles Quantity	0	0	0
Begin development of the capability to perform synthetic training for the SEI and HGHS.			
	FY 2008	FY 2009	FY 2010
9D93A Accelerated Improvement for Active Surface Electronic Warfare Systems	0.000	1.596	0.000
RDT&E Articles Quantity	0	0	0
Begin development of display enhancements for the active variants of the AN/SLQ-32(V) system similar to those already provided for passive variants.			

CLASSIFICATION:		UNCLASSIFIED																																																		
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE May 2009																																														
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0604761N Intelligence Engineering																																																
COST (In Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015																																												
Total PE Cost	10.368	15.556	14.438																																																	
A. MISSION DESCRIPTION: (U) This funding encompasses the Navy Foreign Materiel Program (FMP) and the Maritime Domain Awareness Program (MDA). The FMP provides high leverage cost benefit through acquisition of foreign manufactured equipment with military application and potential military application and the subsequent exploitation of that materiel for potential vulnerabilities and countermeasures. The MDA Program provides for the development of advanced analytic tools to detect and monitor illicit networks and operations in support of national, theater, and fleet requirements; persistent cargo anomaly detection, alerting and classification, automated CBRN component tracking and altering, an overall increase in analytical precision in tying people to their cargo, and detection of anomalous trade entities, networks, and shipping practices; and an enterprise architecture that optimizes function and technological capabilities to enable seamless and scalable access to an integrated global maritime intelligence domain. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="text-align: left;">Funding:</td> <td style="text-align: center;">FY 2008</td> <td style="text-align: center;">FY 2009</td> <td style="text-align: center;">FY 2010</td> </tr> <tr> <td>President's Budget 2009</td> <td style="text-align: center;">1.927</td> <td style="text-align: center;">13.750</td> <td style="text-align: center;">4.647</td> </tr> <tr> <td>President's Budget 2010</td> <td style="text-align: center;">10.368</td> <td style="text-align: center;">15.556</td> <td style="text-align: center;">14.438</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: center;">8.441</td> <td style="text-align: center;">1.806</td> <td style="text-align: center;">9.791</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="text-align: left;">Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2009 OCO request</td> <td></td> <td style="text-align: center;">1.850</td> <td></td> </tr> <tr> <td>SBIR/STTR/FTT Assessments</td> <td style="text-align: center;">-0.009</td> <td></td> <td></td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: center;">8.45</td> <td></td> <td style="text-align: center;">10.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td></td> <td style="text-align: center;">-0.044</td> <td style="text-align: center;">-0.209</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: center;">8.441</td> <td style="text-align: center;">1.806</td> <td style="text-align: center;">9.791</td> </tr> </table> C. PROGRAM CHANGE EXPLANATION: The \$10M increase in FY 2010 reflects increases in Foreign Materiel acquisition opportunities.									Funding:	FY 2008	FY 2009	FY 2010	President's Budget 2009	1.927	13.750	4.647	President's Budget 2010	10.368	15.556	14.438	Total Adjustments	8.441	1.806	9.791	Summary of Adjustments				Congressional Rescissions				FY 2009 OCO request		1.850		SBIR/STTR/FTT Assessments	-0.009			Program Adjustments	8.45		10.000	Rate/Misc Adjustments		-0.044	-0.209	Subtotal	8.441	1.806	9.791
Funding:	FY 2008	FY 2009	FY 2010																																																	
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CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604761N Intelligence Engineering
C. OTHER PROGRAM FUNDING SUMMARY: Not applicable. D. ACQUISITION STRATEGY: The majority of MDA architecture is placed on the ONI IITM information technology support contract for IT development labor. Hardware and software procurements are competitively conducted in a fair and open manner in accordance with FAR directives. Also, leveraged existing DARPA developed SCANDECK capabilities and pursue a teaming arrangement with NGMS/ESEX to further develop existing technology. E. MAJOR PERFORMERS: - L3/Titan, Reston, VA - Semantic Research, Inc., San Diego, CA - Kestrel Enterprises Inc., Cheriton, VA - Mertron, Inc., Reston, VA - NGMS / ESSEX, Melbourne, FL		

Exhibit R-2, RDT&E,N Budget Item Justification							Date: May 2009	
Appropriation/Budget Activity RDT&E,N BA 5				R-1 Item Nomenclature: Medical Development 0604771N				
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	49.656	39.725	9.888	0.000	0.000	0.000	0.000	0.000
Medical/Dental Equipment Development/0933	16.684	7.812	9.888	0.000	0.000	0.000	0.000	0.000
Congressional Adds/9999	32.972	31.913	0.000	0.000	0.000	0.000	0.000	0.000
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 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 2008	FY 2009	FY 2010	FY 2011				
FY 2009 President's Budget	42.779	7.833	7.893	0.000				
FY 2010 President's Budget	49.656	39.725	9.888	0.000				
Total Adjustments	6.877	31.892	1.995	0.000				
Program Adjustments:								
Congressional Rescissions	0.000	0.000	0.000	0.000				
Congressional Adjustments	0.000	32.000	0.000	0.000				
Full Supplemental	0.000	0.000	0.000	0.000				
SBIR/STTR/FTT Assessment	1.344	0.000	0.000	0.000				
Rate/Miscellaneous Adjustments	5.533	-0.108	2.160	2.618				
Total Adjustments	6.877	31.892	2.160	2.618				
C. Other Program Funding Summary:								
D. Acquisition Strategy:								
E. Performance Metrics:								

Exhibit R-2a, RDT&E,N Project Justification						Date: May 2009	
Appropriation/Budget Activity RDT&E,N/BA 5				Medical Development 0604771N			
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010				
Medical/Dental Equipment Development/0933	16.684	7.812	10.053				
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 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 2008	FY 2009	FY 2010	FY 2011		
Accomplishment/Effort/Subtotal Cost		16.684	7.812	9.888	0.000		
RDT&E,N Articles Quantity							
FY 2008 Accomplishments: <u>Stasix® Preclinical Trials for Trauma Indications</u> - Completed preclinical trials of Stasix® infusible hemostatic agent. Identified effective dosage for delivery in animal model. Resulting hemostatis in liver injury model produced significant increase in survival over control. This effort provided baseline input for advanced preclinical trials to be initiated in FY09. <u>Heterotopic Ossification (HO) Incidence</u> - Completed analysis incidence and degree of heterotopic ossification associated with trauma treatment in theater. Incidence of HO is significantly higher in combat trauma than civilian trauma. Mechanisms of HO in combination with wound healing investigated to produce interventions. Preparing recommendations on use of psychotropic drug that negatively affect HO outcomes in polytrauma patients. <u>The Use of the Vacuum Assisted Wound Closure Device and Quantitative Bacteriology in Extremity Wound Closure</u> - Bayesian modelling allows prediction of likelihood of effective wound closure. This outcome can reduce by 50% the facilities and procedures required for definitive closure in an MTF. This program is complete. The results are transitioning into an FY09 Comprehensive Wound Treatment Effort. Preparing submission to FDA for approval of biomarker panel for MTF implementation in comprehensive wound repair regimen. <u>Monitoring Oxygen Ventilation and External Suction (MOVES) System</u> - Established test protocols for airworthiness testing. Finalized configuration for initial and Low Rate Initial Production (LRIP) product delivery. Continued design configuration of MOVES anesthesia module. Continued investigations of redesign for using MOVES in other naval platforms and in the Navy Expeditionary Resuscitative Surgery System (ERSS). This is a joint program with MARCORSYSCOM.							
R-1 Line Item 124 Page 2 of 11							

Exhibit R-2a, RDT&E,N Project Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N/BA 5		Medical Development 0604771N
FY 2008 Accomplishments (Continued): <u>Clinical Trial of a Newly Developed Forward-Deployable Dental Dressing</u> - Completed field trials of DentStat (syringe delivery system) with 1st Dental BN, Camp Pendleton, CA (Nov 07). Completed clinical trials of DentStat chemistry (two-bottle delivery system) (Mar 08). Final modifications made to the syringe delivery system. <u>The Use of Anti-Oxidants to Augment Outcome in Patients with Balance Disorders After Blast Injury and Blunt Head Trauma</u> - Continued clinical investigations into the efficacy of antioxidants to reduce the vestibular and auditory effects of blast exposure. <u>Restoration of Endodontically-Treated or Compromised Teeth to Prevent or Rehabilitate Tooth Fracture Using Computer-Aided Direct Ceramic/Composite Full-Coverage Restoration</u> - Proof of principle test was conducted to forward images of the crown preparation and was successfully transferred via email. Images are provided to NIDBR personnel to conduct in-laboratory re-construction and fabrication for extensive testing protocols to determine outcomes. Two CAD/CAM units have been deployed for testing. <u>Enhanced Spatial Disorientation Training: Basic, Clinical and Operational Aspects</u> - Continued development of spatial orientation technologies to investigate methods for mitigation spatial disorientation in aviators. Finalizing package for implementation of findings in training scenarios. <u>Cricothyroidotomy Device</u> - Received 100 prototype devices of final version 4 configuration designs. Demonstrated systems to JTF-CAPMED, USSOCOM, and Defense Medical Standardization Board representatives. Completed version 5.1 design for use in forward battle areas. Developed Phase I of Test Plan for ruggedization of packaging and prototype instruments. This is a joint program with the USMC and US Army. <u>Refinement and Development of Medical Planning Factors Among the Services</u> - Continued evaluation of modelling technologies for medical planning. Update and augment algorithms using data collected from CTR and other sources. Final Report in preparation. <u>Establishing a 3D Craniofacial Image Protocol and Pre-Injury Database</u> - Hardware required for establishing data storage and retrieval systems has been procured. Protocols for the verification of the equipment and the accuracy of Cone beam to conventional CT are approved. Proof of concept in verification of technique has been accomplished and results have been reported via Table Clinic at National Meeting and submission for publications. <u>Validation of a Readiness to Fly Assessment Tool</u> - Develop an operational readiness assessment tool that is web- or computer-based to assess an aviator's readiness to fly based on cognitive abilities crucial to heavy mental workload of aircraft operations and the effects of fatigue.		
R-1 Line Item 124 Page 3 of 11		

Exhibit R-2a, RDT&E,N Project Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N/BA 5		Medical Development 0604771N
FY 2008 Accomplishments (Continued): <u>Development of the Medical Force Planning Factors</u> - Measure the effectiveness of combat casualty medical care and preventive gear. <u>Light Emitting Diode (LED) Surgical Lamp for Forward Resuscitative Surgical System (FRSS)</u> - Completed design and initial specifications of a light-weight, 21-LED surgical lamp that will operate under extreme conditions. Completed design of battery module for field use. <u>Clinical Evaluation of a Vaxfectin TM - Formulated Tetravalent Dengue DNA Vaccine (VTDDV)</u> - Preparation for clinical investigations trials on four serotypes of dengue. Contract in place for GMP tetravalent dengue DNA vaccine in proprietary adjuvant (vexfectin) 5-10g per plasmid for 4 plasmids. Preparations for progress in large scale production and development of regulatory support initiated. <u>Evaluation of HemCon's Dental Dressing for Controlling Hemorrhage</u> - Finalizing the assessment of the stability/shelf-life of the product under extreme environmental operating conditions. <u>Improved Submariner Eyewear for Routine Wear and Emergency Equipment Use Underway</u> - Identified candidate eyewear and developed instruments for assessment of human factors during emergency scenarios. Transition activities are to be coordinated through Navy Optometry. <u>Thermal Insulation Performance of MK11 SEIE Submarine Escape Suit</u> - Completed draft design/collection of user-reported levels of fatigue/physical discomfort associated with long durations in the MK10 raft versus the MK11 raft. Information product transition efforts are coordinated with SUBFORCE. <u>Supplemental for Wound Research</u> - Evaluate the potential of amnion-derived progenitor cells for treating combat wounds in a standardized animal model of acute injury. Work includes supporting molecular and cellular studies related to the use of the progenitor cells. These studies include biomarker analyses that provide specific, quantifiable end-points for clinical outcomes. Related components of the project are directed toward enhanced treatment of acute and chronic wounds, wound care, and associated technologies. FY 2009 Plan: <u>PreClinical Trials for FDA approval of an Infusible Hemostatic Agent</u> - Initiate final preclinical trials of platelet derived hemostatic agents. Two candidate agents will be compared in a parallel effort. The outcomes will drive subsequent FDA Safety/Efficacy Trials of the infusible hemostatic agent selected from preclinical tests. The agent is designed for applications to non-compressible injuries. <u>Heterotopic Ossification Incidence</u> - Clinical procedures for reducing the incidence and severity of Heterotopic Ossification (HO) associated with traumatic injury. Identify potential modifications of clinical causes and timing of interventions. <u>The Use of the Vacuum Assisted Wound Closure Device and Quantitative Bacteriology in Extremity Wound Closure transitioning to Wound Management Program</u> - Finalize Clinical Protocols for use of cytokine/growth factor expression in reducing associated debridement and irrigation. Initiate transition to standard clinical practice at MTF.		
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Exhibit R-2a, RDT&E,N Project Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N/BA 5		Medical Development 0604771N
FY 2009 Plan (Continued): <u>Monitoring, Oxygen Ventilation and External Suction (MOVES) System</u> - Conduct reconfiguration of MOVES to reduce weight and cost for subsequent production runs. Incorporate joint service requirements. Continue Configuration Management of MOVES anesthesia module. <u>Forward-Deployable Dental Dressing Developmental/Operational Test and Evaluation</u> - Final Field Testing of ruggedized delivery system for the novel dental dressing. <u>Restoration of Endodontically-Treated or Compromised Teeth to Prevent or Rehabilitate Tooth Fracture Using Computer-Aided Direct Ceramic/Composite Full-Coverage Restoration</u> - Initiate transition of CEREC protocols to clinical practice. <u>Cybertech Cric Cricothyroidotomy Device</u> - Conduct late Developmental Test & Evaluation for human factors and ruggedization of Low Rate Initial Production cricothyroidotomy devices. This is a joint program with the USMC and US Army. <u>Refinement and Development of Medical Planning Factors Among the Services</u> - Finalize modelling technologies for medical planning. Update and augment algorithms using data collected from available data sources. Transition final product to medical planners. <u>Joint Development Projects with MARCORSYSCOM Medical Acquisition</u> - Initiate Joint Development Testing and Evaluation program for medical products and equipment. Finalize development for USMC Procurement. <u>Transition Projects from Force Health Protection Future Naval Capability</u> - Initiate Development, Testing, and Evaluation program for transition products from the Office of Naval Research 6.3 Advanced Development program. Focus will be on transition of novel hemostatic agents (e.g. infusible hemostatics and field/first responder devices). <u>Establishing a 3D Craniofacial Image Protocol and Pre-Injury Database</u> - Continue refinement of the pre-traumatic 3D image database for soft and hard tissue for use to re-establish structures for reconstruction of craniofacial abnormalities or traumatic injuries. Resulting images will be used for surgical guides to decrease OR time and increase predictability of surgical outcomes. <u>Validation of a Readiness to Fly Assessment Tool</u> - Continue Validation of an operational readiness assessment tool. The tool is computer-based and used to assess an aviator's readiness to fly. Based on cognitive abilities crucial to heavy mental workload of aircraft operations and the effects of fatigue. <u>Development of the Medical Force Planning Factors</u> - Measure the effectiveness of combat casualty medical care and preventive gear. <u>Clinical Evaluation of a Vaxfectin TM - Formulated Tetravalent Dengue DNA Vaccine (VTDDV)</u> - Continue clinical investigations trials on four serotypes of dengue. <u>Evaluation of HemCon's Dental Dressing for Controlling Hemorrhage</u> - Finalize the assessment of the stability/shelf-life of the product under extreme environmental operating conditions.		
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Exhibit R-2a, RDT&E,N Project Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N/BA 5		Medical Development 0604771N
FY 2010 Plan: <u>Clinical Evaluation of a Vaxfectin TM - Formulated Tetravalent Dengue DNA Vaccine (VTDDV)</u> - Continue clinical investigations trials on four serotypes of dengue. <u>Phase I Clinical Trials for FDA approval of an Infusible Hemostatic Agent</u> - Complete Phase I Safety Trials of the infusible hemostatic agent selected from preclinical tests. The agent is designed for applications to non-compressible injuries. Transition to US Army Medical Materials Development Agency for Phase II. <u>Mobile Oxygen Ventilation and External Suction (MOVES) Anesthesia</u> - Continue Development of MOVES anesthesia module. <u>Joint Development Projects with MARCORSYSCOM Medical Acquisition</u> - Initiate Joint Development Testing and Evaluation program for medical products and equipment. Finalize development for USMC Procurement. <u>Transition Projects from Force Health Protection Future Capability</u> - Initiate Development, Testing, and Evaluation program for transition products from the Office of Naval Research 6.3 Advanced Development program. Focus will be on transition of novel hemostatic agents (e.g. infusible hemostatics and field/first responder devices). C. Other Program Funding Summary: Not applicable D. Acquisition Strategy: Not applicable E. Performance Metrics: Not Applicable		
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Exhibit R-2a, RDT&E,N Budget Item Justification				Date: May 2009			
Appropriation/Budget Activity RDT&E,N BA 5				Medical Development 0604771N			
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010				
9999 Congressional Adds - VARIOUS	32.972	31.913	0.000				
RDT&E,N Articles Quantity:							
A. Mission Description and Budget Item Justification: Congressional Adds.							
B. Accomplishments/Planned Program							
	FY 2008	FY 2009					
Accomplishment/Effort/Subtotal Cost							
RDT&E,N Articles Quantity							
Military Dental Research	1.543	5.984					
Infusible Hemostatic Agent Clinical Trials - Phase 1	3.085						
Somatic Cell Processing Program (Diabetes Research)	1.543						
On Demand Custom Body Implants/Prosthesis for Injured Personnel	1.543	1.596					
Granular Chitosan Clotting Agent for Anti-Coagulated Hypothermic Blood	1.157						
Implantable Middle Ear Hearing System	0.965						
Mobile Oxygen, Ventilation and External Suction (MOVES)	1.928	1.197					
Discovery, Early Detection, Eval Treat & Prev in Cancer Research (Penn State Cancer Institute)	5.396	2.792					
Strategies to Mitigate Individual Stress Reactivity and Operational Stress Reactions in the Military	1.157						
US Navy Pandemic Influenza Vaccine Program	1.543	1.596					
VisualDX Image-Based Real-Time Clinical Decision Support	2.314						
Multivalent Dengue Vaccine Program	2.892						
Next Generation Networking Electronic Medical Records Project	3.856						

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Exhibit R-2a, RDT&E,N Budget Item Justification						Date: May 2009	
Appropriation/Budget Activity RDT&E,N BA 5				Medical Development 0604771N			
Congressional Continued:							
Advanced Research and Development for Hemostatic Agents (USMC)	3.085						
Hampton University Cancer Treatment Initiatives	0.965	7.977					
Advanced Molecular Medicine Initiative		1.995					
Composite Tissue Transplantation for Combat Wounded		1.995					
Disposable Biocidal Medical Masks for NAMRU Evaluation		0.798					
HEALTHeForce		2.792					
Topical Hemostat Effectiveness Study		0.798					
U.S. Navy Cancer Vaccine Program		2.393					
FY 2008 Accomplishments:							
Military Dental Research	Consultation Service. Provided evaluation results for incorporation into Authorized Dental Allowance List (ADAL) 662 - Field Dental Operator. Completed studies of immediate antimicrobial treatment of contaminated wounds. Results indicate that salts of fluoride (Silver and Zinc) had the most potent antimicrobial effect.						
Infusible Hemostatic Therapeutic Trials	Continued to explore the use of infusible agents in the control of non-compressible bleeding. Results were important in establishing the clinical protocols to be used for Phase I clinical trials in thrombocytopenic patients.						
Diabetes Research, Somatic Cell Processing Program	Continued research to develop and demonstrate improvements in cell sorting, analysis, and imaging. The results have provided notable improvements to the cell isolation process and increase the areas of research for tissue-engineered end products.						
On Demand Custom Body Implants/Prosthesis for Injured Personnel	Continued testing and evaluation of Phase I efforts to develop manufacturing methods and materials necessary for rapid prototyping and delivery of prostheses. Apply state-of-the-art CAD/CAM procedures to prosthesis manufacturing technology.						
Center for Deployment Psychology	Reprogrammed for FY08						
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Exhibit R-2a, RDT&E,N Budget Item Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N BA 5		Medical Development 0604771N
FY 2008 Accomplishments (Continued):		
Implantable Middle Ear Hearing System	Continued to investigate the military applicability of implantable hearing systems that counter the effects of noise-induced hearing loss without the drawbacks of conventional hearing aids. The results will be available for incorporation into the overall plan to address the major DoD effort to mitigate Noise-Induced Hearing Loss.	
Mobile Oxygen, Ventilation and External Suction (MOVES)	Completed prototyping of the Monitoring, Oxygen Ventilation and External Suction System (MOVES). This will allow completion of the animal, human factors, and human clinical testing of MOVES. LRIP is planned for 2Q FY09 as a next generation spiral. With production beginning in CY09.	
Penn State Cancer Institute	Continued R&D efforts supporting the new Penn State Cancer Institute (PSCI). Results of the efforts will direct future focus on expansion of translational cancer research capabilities in the areas of the breast, colon, and treatment of cancer.	
Strategies to Mitigate Individual Stress Reactivity and operational Stress Reactions in the Military	Developed stress-coping resources and interventions for combat deployed military personnel, their families, and the providers who support their psychological health needs. Educational materials and self-help exercises developed could assist returning war veterans as they readjust to domestic conditions and reintegrate with their families. Developing Training materials for both active duty and civilian providers, to enhance their ability to recognize the signs and symptoms of combat stress and	
VisualDX Image-Based Real-Time Clinical Decision Support	combat healthcare system and to evaluate the benefits of VisualDx in terms of force health protection and readiness.	
Multivalent Dengue Vaccine Program	Continued work to manufacture the two vaccine mixture under GMP conditions for a Phase I clinical investigation; execution of the Phase I clinical trial; and develop and test a single vaccine candidate that produces neutralizing antibodies against all four serotypes in vaccinated animals.	
Next Generation Networking Electronic Medical Records Project	achieved through the use of technologies such as dynamic layer 7 routing. The phase-III effort further demonstrates the capability of a highly advanced integrated service platform to solve problems of network performance latency, scalability and integration complexity. Demonstrated the ability to solve issues common to networked services, evolved definition of the benefits for Electronic Medical Record (EMR) services such as Medweb, BMIST, AHLTA, and high-level and exponential extensibility to other networked services.	
Advanced Research and Development of Hemostatic Agents (USMC)	Research improved functional modification to the QuikClot® hemostat in an effort to establish advanced functional applications and benefits of this sterile, traumatic wound treatment that rapidly arrests high-volume blood loss and achieves hemostasis in large wounds, arresting the hemorrhage before the casualty goes into shock.	
Hampton University Cancer Treatment Initiatives	Research and development efforts were continued that support advancement of technologies for diagnosis and treatment of cancer.	
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Exhibit R-2a, RDT&E,N Budget Item Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N BA 5		Medical Development 0604771N
FY09 Plans:		
Military Dental Research	Develop innovative designs for dental care and dental health for CONUS and OCONUS operations. Conduct critical research in development of rapid-read diagnostic tests and other protective measures that helped reduce the severity and number of casualties due to dental and other medical	
Advanced Molecular Medicine Initiative	This initiative seeks to revolutionize cancer treatment by identifying a patient's individual cancer cells for a more effective and less toxic treatment of cancer and to understand more fully why the human immune system fails to recognize cancer cells.	
Composite Tissue Transplantation for Combat Wounded	This effort will establish a multidisciplinary center for the systematic study of composite tissue transplantation. This center would conduct mechanistic studies on the immune response and rejection of transplanted tissues and establish a capability to conduct clinical trials in hand transplantation. The program will include a strategy to collect and analyze clinical data and materials to further the knowledge base on composite tissue transplants and be used to develop novel immunosuppressive treatments.	
On Demand Custom Body Implants/Prosthesis for Injured Personnel	Continue testing and evaluation of Phase I efforts to develop manufacturing methods and materials necessary for rapid prototyping and delivery of prostheses. Apply state-of-the-art CAD/CAM procedures to prosthesis manufacturing technology.	
Disposable Biocidal Medical Masks for NAMRU Evaluation	Conduct field and laboratory evaluation of human factors and efficacy of N95 Respirator with antimicrobial protection (Triosyn). Masks will be evaluated for form, fit, and function in select environments where conventional masks are used. Focus will be on field evaluations where infection	
HEALTHeForce	Established goals for this project include continuing to deliver quality product and services to West Virginia clinics that support rural health and provide additional capabilities and features tailored to this state. Examples of these features are additional chronic disease registries guided by national standards and local clinical input, ePrescribing, and enhanced patient education and support the expansion of HEALTHeWV program in collaboration with the National Technology Transfer Center.	
Mobile Oxygen, Ventilation and External Suction (MOVES)	Initiate reconfiguration of Low Rate Initial Production (LRIP) units Monitoring, Oxygen Ventilation and External Suction System (MOVES) human factors, weight, cube and cost. Reconfiguration of MOVES is specifically targeted to reduce weight and cost. Incorporate requirements from other services into LRIP units as part of the planned next generation research and development spiral. Configuration will be based on feedback from the warfighter and joint requirements for en-route care.	
Penn State Caner Institute	Continuation of R&D efforts in support of the new Penn State Cancer Institute (PSCI) and the focus on expansion of translational cancer research capabilities in the areas of the breast, colon, and treatment of cancer.	
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Exhibit R-2a, RDT&E,N Budget Item Justification		Date: May 2009
Appropriation/Budget Activity RDT&E,N BA 5		Medical Development 0604771N
FY09 Plans (Continued):		
U.S. Navy Cancer Vaccine Program	This project will develop a novel prostate cancer vaccine developed by Oncbiomune, LLC and support the development of an IND submission needed for FDA approval. The project supports a Phase IA/B clinical trial to be carried out at the VA San Diego Healthcare System, located in San Diego, CA. US military veterans who have received previous treatment (surgery, radiation or radioactive seed implants) and now have a rising PSA will participate in the study.	
Hampton University Cancer Treatment Initiatives	R&D efforts in support of continued progress in advanced technologies for diagnosis and treatment of cancer. Particular emphasis is placed on military and military veterans.	
C. Other Program Funding Summary: Not Applicable D. Acquisition Strategy: Not Applicable E. Performance Metrics: Not Applicable		
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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	43.486	48.542	63.184					
0253 Nav & Electro-Optical Supt	7.369	7.886	7.996					
0676 Improved ID Development	3.366	2.841	2.894					
0921 NAVSTAR GPS Equipment	21.067	28.348	21.895					
1253 Combat ID System	11.684	9.467	30.399					
Quantity of RDT&E Articles	5	2	18					

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. 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. 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.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	41.226	49.007	48.498
Current BES	43.486	48.542	63.184
Total Adjustments	2.260	-0.465	14.686

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments			
	-0.063	-0.332	
SBIR/STTR/FTT Assessments			14.749
Program Adjustments	2.323		-0.063
Rate/Misc Adjustments		-0.133	
Subtotal	2.260	-0.465	14.686

Schedule:

Proj 0676: FRPDR, IOC and LRIP and FRP delivery schedule changes are based on the Mode 5 Acquisition Program Baseline, dated 5 June 2008. The OE-120/UPX Antenna and the Navy Tactical Data System (NTDS) Interface Elimination schedule milestones have been added to the program schedule.

Proj 0921: Changes to the Advanced Digital Antenna Production (ADAP) development schedule are due to the delayed approval of acquisition documentation and technical issues. Changes caused the delay of the Full Rate Production schedule from 3Q08 to 1Q10.

Proj 1253: FRPDR, IOC, LRIP and FRP delivery schedule, and the OTRR and OPEVAL changes are based on the Mode 5 Acquisition Program Baseline, dated 5 June 2008.

Technical:

Not Applicable

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM		PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt
COST (In Millions)	FY 2008	FY 2009	FY 2010	
Project Cost	7.369	7.886	7.996	
RDT&E Articles Qty	0	0	0	
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.				

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EXHIBIT R-2a
RDT&E PROJECT JUSTIFICATION

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM	PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.154	0.147	0.139
RDT&E Articles Quantity	0	0	0
Upgrade/Resolve Obsolescent Photonics On-Board Team Trainer development.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.290	4.929	4.206
RDT&E Articles Quantity	0	0	0
ISIS and Photonics common hardware capabilities development and obsolescence.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.915	1.040	2.066
RDT&E Articles Quantity	0	0	0
Low Light Level TV development, digital sensor development and integration and displays.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.950	0.720	1.045
RDT&E Articles Quantity	0	0	0
Imaging System Test Efforts.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.060	1.050	0.540
RDT&E Articles Quantity	0	0	0
Patriot Radar Range Finding Development for Photonics for SSGN and VIRGINIA Class Submarines.			

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EXHIBIT R-2a
RDT&E PROJECT JUSTIFICATION

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM	PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2008	FY 2009	FY 2010					
(U) SCN Line 201300 (Photonics Mast only)	16.817	16.733	17.168					
OPN Line 083100 (PL022)	27.647	53.119	38.423					
OPN Line 083105	11.660	6.532	4.249					
(U) Related RDT&E	5.148	1.150	1.019					
PE 0604558N VIRGINIA Class Design Development	0.763	1.145	3.229					

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 for VIRGINIA Class submarines. 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.

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EXHIBIT R-2a
RDT&E PROJECT JUSTIFICATION

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EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM					PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				
Primary Hardware Development	Various	Various	7.623	1.710	OCT-08	1.801	OCT-09				
Software Development	Various	Various	5.594	2.227	OCT-08	2.249	OCT-09				
Systems Engineering	Various	Various	6.534	2.053	OCT-08	2.006	OCT-09				
Miscellaneous	Various	Various	2.052	0.503	OCT-08	0.515	OCT-09				
Subtotal Product Development			21.803	6.493		6.571					
Remarks:											
Program Management Support	CPAF	AT&T	1.852	0.543	OCT-08	0.557	OCT-09				
Subtotal Support Costs			1.852	0.543		0.557					
Remarks:											
Development Test & Evaluation	Various	Various	3.005	0.800	OCT-08	0.817	OCT-09				
Subtotal Test and Evaluation			3.005	0.800		0.817					
Remarks:											
Travel	CPAF	AT&T	0.150	0.050		0.051					
Subtotal Management Services			0.150	0.050		0.051					
Remarks:											
Total Cost			26.810	7.886		7.996					

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EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009														
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM										PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt																			
Fiscal Year	2008				2009				2010																									
	1	2	3	4	1	2	3	4	1	2	3	4																						
IMAGING F0253 SCHEDULE																																		
PMOBT																																		
ISIS COMMON HARDWARE																																		
Tech Insertion Fielding																																		
ISIS Test & Evaluation																																		
PHOTONICS SENSOR DEVELOPMENT																																		
Photonics Reliability Improvements																																		
Digital Periscope																																		
Camera/Displays Upgrade																																		

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EXHIBIT R-4
SCHEDULE PROFILE

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CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-4a, SCHEDULE DETAIL				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604777N/NAVIGATION/ID SYSTEM		PROJECT NUMBER AND NAME 0253/Nav & Electro-Optical Supt
Schedule Profile		FY 2008	FY 2009	FY 2010
TI-08 Development		1Q		
Photonics Integration Control and Display Development		1Q		
ISIS SSGN DT		2Q		
LLL TV EDM		3Q		
Photonics Reality Sea Test		3Q		
ISIS 688		4Q		
TI-06-EDM		4Q		
Digital Periscope EDM		4Q		
TI-08 Fielding			2Q	
Test Photonics Reality Improvements			2Q	
Test Digital Periscope			3Q	
Upgrade Photonics Camera			3Q	
PMOBT Software ECP			4Q	
TI-08 OT			4Q	
TI-1- Development				1Q
TI-10 EDM				2Q
Test Photonics Reality Sea Test				4Q
TI-10-OT				4Q

R-1 Line Item No 125

CLASSIFICATION:
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EXHIBIT R-4a
SCHEDULE DETAIL

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 0676 IMPROV IDENTIFICATION DEV			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
0676 IMPROV IDENTIFICATION	3.366	2.841	2.894					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reliable and secure Navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to providing platform identification 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. The Improved ID Development project addresses the Navy Lead of a Mark XIIA Mode 5 upgrade to the existing AN/UPX-29(V) Mark XII family of systems that is Joint and NATO interoperable. This exhibit also addresses the AN/UPX-29(V) antenna, the OE-120/UPX.								

EXHIBIT R-2a
RDT&E PROJECT JUSTIFICATION

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 0676 IMPROV IDENTIFICATION DEV		
B. Accomplishments/Planned Program				
AN/UPX-29 (V) - OE-120 Antenna Replacement	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.301	1.429	2.369	
RDT&E Articles Quantity				
Engineering and integration development of the new OE-120/UPX antenna. Develop design studies and test procedures, draft specifications, and perform system development and integration efforts.				
Mark XIIA Mode 5 Improvements for AN/UPX-29(V)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.065	0.817	0.225	
RDT&E Articles Quantity				
Engineering, development, and integration of Mark XIIA Improvements to the AN/UPX-29 (V). Correct deficiencies from Integrated Test and Operational Test (IT - OT) and baseline software and documentation. Funds development and integration of Mark XIIA Improvement to the AN/UPX-29 (V) system on CG 47, DDG 51, LHD 1, LPD 17 and CV/CVN class ships. Provides core Integrated Logistics Support (ILS) documentation; formalizes hardware/software configuration; finalizes technical/design data, and resolves testing anomalies.				
AN/UPX-29(V) Navy Tactical Data System elimination	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		0.595	0.300	
RDT&E Articles Quantity				
Development, test and integration of ethernet interface for the AN/UPX-29(V) to meet emergent needs of the Navy to eliminate all Navy Tactical Data System (NTDS) cables on CG 47, DDG 51, LHD 1, LPD 17 and, CV/CVN class ships.				

EXHIBIT R-2a

RDT&E PROJECT JUSTIFICATION

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS		PROJECT NUMBER AND NAME 0676 IMPROV IDENTIFICATION DEV
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
P-1 #62: Identification Systems - OPN	25.175	31.367	38.682	
D. ACQUISITION STRATEGY:				
The Acquisition Strategy is to develop Mode 5 Engineering Change Proposals (ECPs) for modern Mark XII Identification Friend or Foe (IFF) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.				

EXHIBIT R-2a
RDT&E PROJECT JUSTIFICATION

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDTE, N / BA-5			0604777N NAVIGATION / ID SYSTEMS				0676 IMPROV IDENTIFICATION DEV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	WX	NAWCAD, St Inigoes, MD	1.841	0.605	11/08	1.671	11/09						
Ship Integration	WX	NAWCAD, St Inigoes, MD	1.674	0.445	11/08	0.090	11/09						
Systems Engineering	WX	NAWCAD, St Inigoes, MD	3.836	0.372	11/08	0.135	11/09						
Subtotal Product Development			7.351	1.422		1.896							
Remarks:													
Development Support													
Configuration Management	WX	NAWCAD, St Inigoes, MD	0.169			0.177	11/09						
ILS	WX	NAWCAD, St Inigoes, MD	1.867	0.251	11/08	0.115	11/09						
Software Development	WX	NAWCAD, St Inigoes, MD	2.758	0.200	11/08	0.231	11/09						
Technical Data	WX	NAWCAD, St Inigoes, MD	0.688	0.300	11/08	0.175	11/09						
Training	WX	NAWCAD, St Inigoes, MD	0.200	0.073	11/08								
Subtotal Support			5.682	0.824		0.698							
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604777N NAVIGATION / ID SYSTEMS			0676 IMPROV IDENTIFICATION DEV							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Developmental Test & Evaluation	WX	NAWCAD, St Inigoes, MD	0.400	0.100	11/08								
Operational Test & Evaluation	WX	NAWCAD, St Inigoes, MD	1.228	0.100	11/08								
Test Assets	WX	NAWCAD, St Inigoes, MD	0.631	0.100	11/08								
GFE													
Award Fees													
Subtotal T&E			2.259	0.300		0.000							
Remarks:													
Contractor Engineering Support													
Program Management Support	C-CPFF	American Elec, California, MD	0.837	0.295	12/08	0.300	12/09						
Subtotal Management			0.837	0.295		0.300							
Remarks:													
Total Cost			16.129	2.841		2.894							
Remarks:													

EXHIBIT R-3
RDT&E PROJECT COST ANALYSIS

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EXHIBIT R4, Schedule Profile

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N /

BA-5

PROGRAM ELEMENT NUMBER AND NAME

0604777N, NAVIGATION/ID SYSTEM

PROJECT NUMBER AND NAME

0676

IMPROV ID DEV

Fiscal Year	FY 2008				FY 2009				FY 2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones									★	FRPDR & IOC		
Contracts &	▲	LRIP Option Executed					△	LRIP Option Executed	△	FRP Contract Award		
Deliverables								LRIP Deliveries (DI, CXP)				
								Production Line Insertion				
Development & Engineering												
								Prepare & Evaluate ECPs/SCDs				
OE-120/UPX Antenna						▲	SRR		△	SFR		
NTDS Elimination	Interface Design Specification Development								△	Interface Design Implementation		
Integration												
								Host Platform Integrations (Air)				
Test & Evaluation Milestones					TECHEVAL IT-C4	▲		△	OTRR			
								□	CT-C1 IOT&E			
								△	OPEVAL Out Brief			
NTDS Elimination												

R-1 SHOPPING LIST - Item No. 125

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Exhibit R-2, RDTEN Budget Item Justification

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Exhibit R-4a, Schedule Detail			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT 0604777N NAVIGATION / ID SYSTEMS		PROJECT NUMBER AND NAME 0676 IMPROV ID DEV	
Schedule Profile	FY 2008	FY 2009	FY 2010	
Mode 5				
Full Rate Production Decision Review (FRPDR) & IOC			1Q	
FRP Contract Award & APX-119 Integration Begins			1Q	
Low-Rate Initial Production Contract Award and Options	1Q	3Q		
Low-Rate Initial Production Deliveries (CXP, DI)	1Q-4Q	1Q-4Q	1Q-4Q	
FRP Deliveries				
Prepare & Evaluate ECPS/SCDs	1Q-4Q	1Q-4Q	1Q-4Q	
Production Line Insertion	1Q-4Q	1Q-4Q	1Q-4Q	
Host Platform Integrations (Air)	1Q-4Q	1Q-4Q	1Q-4Q	
TECHEVAL (IT-C4)		2Q		
Operational Test Readiness Review (OTRR)		3Q		
IOT&E		4Q		
OPEVAL Out Brief			1Q	
Mode 5 Joint IOC				
Mode 5 Spiral Development				
Follow-on Test and Evaluation			1Q-4Q	
OE-120/UPX Antenna				
Initial Technical Review (ITR)		1Q		
System Requirements Review (SRR)		1Q		
System Functional Review (SFR)			1Q	
Preliminary Design Review (PDR)			4Q	
Critical Design Review (CDR)				
Test Readiness Review (TRR)				
Production Readiness Review (PRR)				
Functional Configuration Audit (FCA)				
Physical Configuration Audit (PCA)				
NTDS Interface Elimination				
Interface Design Specification (IDS) Development		4Q		
Interface Design Implementation			1Q-4Q	
Test Readiness Review (TRR)				
Integration and Baseline Certification Testing				

EXHIBIT R-4a
SCHEDULE DETAIL

Exhibit R-2, RDTEN Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
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 2008	FY 2009	FY 2010				
Project Cost		21.067	28.348	21.895				
RDT&E Articles Qty		0	0	0	0	0	0	0

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

The mission of the Global Positioning System (GPS) program efforts is to provide assured and protected navigation solutions to the war fighters through supported, affordable, and integrated systems. Research, Development, Testing and Evaluation (RDT&E) funds are used to perform all the non-recurring GPS Surface Ship, Submarine and Aircraft Integration efforts. GPS continues to be integrated in all DoD platforms and the development of enhanced GPS is an urgent national security priority in accordance with US Code - 10USC2281 of 15 November 2005. As stated in the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6130.01D, 2007 Master Positioning, Navigation, and Timing Plan (MPNTP), the "GPS is the primary source of Positioning Navigation and Timing (PNT) information for the DoD". In accordance with OPNAVINST 9420.1B "GPS Precise Positioning Service (PPS) systems shall be used for all combat, combat support, and combat service support operations and training" to provide assured access to accurate position and performance under intentional and unintentional interference. This direction is in keeping with the National Security/Presidential Directive (NSPD)-39 of 15 December 2004 and current solutions are well-supported by numerous studies and analyses that include Defense Science Board Task Force reports (October 2005), the DoD's GPS III System Architecture/Requirements Definition (SA/RD) of January 2003, and various DoD and Navy requirements documents.

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. 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 modernized User Equipment (UE). Beginning in FY 10, the Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) system will integrate modernized GPS UE being developed by the GPS Wing into a complete NAVWAR solution for Navy surface and subsurface platforms. The GPNTS will be scalable to replace stand-alone WRN-6 systems as well as integrated Navigation Sensor System Interface (NAVSSI) systems. Additionally, future capability will migrate toward a Common Computing Environment (CCE) such as Consolidated Afloat Networks Enterprise Services (CANES).

The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel 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, the Navy Enhanced GPS User Equipment ORD was drafted 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 Wing development of an Advanced Digital Antenna Production (ADAP), the Navy's development of a smaller Anti-Jam (AJ) antenna and a conformal low-observable AJ antenna for aircraft with unique requirements, new technology AJ solutions for submarines (Frequency Excision Filter (FEF)), 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 Air and Sea Navigation Warfare (NAVWAR) programs. The Sea NAVWAR Program is executed in 3 increments. The GPS Antenna System (GAS-1) is integrated on surface platforms in Increment 1. Increment 2 is ADAP. It is an enhanced adaptive AJ antenna system based on advanced digital electronics and digital signal processing planned for surface ship integrations. Increment 3 addresses anti-jam (AJ) capabilities for submarines. The Air NAVWAR program is a single increment with GAS-1, ADAP, and other efforts continuing.

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, Navigation, and Time (PNT) 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 receiver procurements 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. The GPNTS 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)). Similarly, SAASM is required for GPS receivers in aircraft, and aircraft related SAASM integration and test will be required.

The Navy's overall GPS User Equipment upgrade is modernization of all GPS systems on Air and Sea platforms. This 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 Wing program. These new receivers and antennas will incorporate GPS Wing and Navy directed and developed technology enhancements to support new signals in the maritime domain, in space, enhanced receiver security, aircraft operations within controlled airspace and future weapons, combat, and C4I systems requirements.

Exhibit R-2a, RDTEN Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
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	

(U) B. Accomplishments/Planned Program

Air Navigation Warfare (NAVWAR)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	10.339	13.720	9.465	
RDT&E Articles Quantity	0	0	0	

(U) FY08 ACCOMPLISHMENTS: Completed development of conformal array for F/A-18 E/F/G. Completed initial antenna integration efforts on E-2D. Continued integration/testing of antenna on F/A-18 E/F/G. Continued Advanced Digital Antenna Production (ADAP) testing and NAVWAR integration on H-53 (IOC). Continued monitoring potential Small Antenna System (SAS)/Miniaturized - Controlled Reception Pattern Antenna (M-CRPA) solutions. Continued participation in joint NAVWAR Memorandum Of Understanding (MOU) initiatives with Canada, United Kingdom and Australia.

(U) FY09 PLANS: Continue integration of conformal array on F/A-18 E/F/G and NAVWAR on other Air platforms. Continue Selective Anti-Spoof Module (SAASM) integration and testing on Air platforms. Continue monitoring of SAS/M-CRPA development. Participate in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia. Complete NAVWAR testing on H-53.

(U) FY10 PLANS: Continue integration of conformal array on F/A-18 E/F/G and NAVWAR on other Air platforms. Continue developmental testing of NAVWAR on F/A-18 E/F/G. Continue SAASM integration and testing on Air platforms. Monitor of SAS/M-CRPA development. Participate in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

Sea Navigation Warfare (NAVWAR)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.274	4.964	4.450	
RDT&E Articles Quantity	0	0	0	

(U) FY08 ACCOMPLISHMENTS: Continued modeling and simulation, integration, and Developmental Testing (DT) efforts for ADAP on DDG, LCAC, and surface ships integrated with AN/WRN-6 (FFG, MCM, MHC). Continued participation in joint Navigation Warfare (NAVWAR) Memorandum of Understanding (MOU) initiatives with Canada, United Kingdom and Australia.

(U) FY09 PLANS: Increment 2 (ADAP): Conduct DT for ADAP on DDG, CVN, CG47 platforms. Support Operational Testing (OT) on DDG. Increment 3 (Submarine Anti Jam (AJ) Capability): Revise submarine AJ capability Analysis of Alternatives (AoA). Develop pre-Milestone B acquisition documents. Initiate contract planning for submarine AJ capability System Development and Demonstration contract. Participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

(U) FY10 PLANS: Increment 2 (ADAP): Conduct DT and integration for ADAP on LHD. Increment 3 (Submarine AJ): finalize acquisition documents for Milestone B. Conduct milestone decision review for Increment 2. Finalize submarine AJ technical specifications and award System Development & Demo (SD&D) contract. Continue participation in joint NAVWAR MOU initiatives with Canada, United Kingdom and Australia.

Exhibit R-2a, RDTEN Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
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	

(U) B. Accomplishments/Planned Program

Global Positioning System (GPS) Modernization	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	2.148	4.540	0.000	
RDT&E Articles Quantity	0	0	0	

(U) FY08 ACCOMPLISHMENTS: Performed Pre Milestone B market research, acquisition strategies and plans were performed in preparation for Milestone B. Performed acquisition document development and planning for the various entities of the modernization program.

(U) FY09 PLANS: Global Positioning System (GPS) Modernization Pre-Acquisition activities will support the GPS- Based Positioning, Navigation and Timing (PNT) Service (GPNTS) increment 2 fielding of M-Code. Finalize Air and Sea modernized GPS user equipment (UE) specifications. Develop technical requirements for the Maritime Domain for GPS User Equipment (MGUE). Support the development of modernized interface documents, the MGUE Enterprise Test and Evaluation Master Plan (TEMP), and modernized GPS user equipment for the Maritime and Air domains. Participate in down select activities conducted by the GPS Wing (GPSW) for Air and Maritime MGUE. Begin platform integration groundwork, such as identification of new capabilities to be incorporated, physical platform modification design, software requirements specification development, platform audits to determine suitability for transition, refining the platform capability roadmaps.

(U) FY10 PLANS: GPS Modernization funding and acquisition program efforts will merge into Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) program.

WRN X	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	4.306	5.124	0.000	
RDT&E Articles Quantity	0	0	0	

(U) FY08 ACCOMPLISHMENTS: Developed pre Milestone B acquisition documents. Released request for information (RFI). Conducted contracting planning conference. Completed WRN-X requirements documents. Developed Draft request for proposal (RFP) in preparation for WRN-X System Development and Demonstration (SDD) contract. Finalized mandatory acquisition documentation to obtain a Milestone B decision. Finalized the WRN-X technical specifications.

(U) FY09 PLANS: WRN-X Pre-Acquisition activities will support the GPNTS increment 1 fielding of a new scalable military GPS receiver with Selective Availability Anti-Spoof Module (SAASM). These efforts will include the completion of all statutory and regulatory acquisition requirements to include the Capabilities Development Document (CDD), Test and Evaluation Master Plan (TEMP), Programmatic, Environmental, Safety, and Health Assessment (PESHE), Information Assurance (IA) Strategy, Information Support Plan (ISP), Human Systems Integration (HSI), Systems Engineering Plan (SEP), Independent Logistics Support Plan (ILSP), Independent Logistics Assessment (ILA), Performance Based Logistics (PBL), Acquisition Strategy (AS)/Acquisition Plan (AP), Project Life Cycle Cost Estimate (PLCCE), and Navy Training Service Plan (NTSP) documents. Attainment of a Milestone B decision to move into the next phase of the program. Development and release of an RFP followed by a System Development and Demonstration (SDD) contract award. Activities necessary to support post contract award activities.

(U) FY10 PLANS: WRN-X funding and acquisition program efforts will merge into Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) program.

Exhibit R-2a, RDTE Budget Item Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
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	

(U) B. Accomplishments/Planned Program

Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	7.980	
RDT&E Articles Quantity	0	0	0	

All WRN-X and Global Positioning System (GPS) Modernization acquisition efforts in FY08 and FY09 will merge into the Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) program.

(U) FY10 PLANS: Complete design review (System Requirement Review -SRR, Preliminary Design Review-PDR, and Critical Design Review-CDR) to support a Design Readiness Review decision meeting. Complete initial, system, and combined Developmental Testing and Evaluation/ Operational Assessment (DT&E/OA). Prepare/update documents to obtain a favorable Milestone C decision, to include completion of a Capability Production Document (CPD). Release a Low Rate Initial Production (LRIP) Request For Proposal (RFP). Begin research for new receivers onboard tactical aircraft. Continue aircraft modernization impact assessments. Efforts may involve studies or development/testing of potential technologies for future program insertion.

Exhibit R-2a, RDTEN Budget Item Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
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

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) OPN Line #2657	7.021	10.861	10.845
(U) APN - Common Avionics Line # 0577	9.203	9.074	7.716

(U) D. ACQUISITION STRATEGY:

NAVWAR: Participate in Global Positioning System (GPS) Wing and Warner Robbins Air Logistics Center (ALC) FY 01-FY 12 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 Wing in their development of an Advanced Digital Antenna Program (ADAP) Line Replaceable Unit (LRU) and identify potential Navy candidate platforms.

GPNTS: Develop a new scalable Positioning, Navigation and Timing (PNT) system that is anticipated to replace the current WRN-6 and Navigation Sensor System Interface (NAVSSI) systems. Integrate GPS modernized capabilities into Global Positioning System (GPS) Based Positioning, Navigation Timing (PNT) Service (GPNTS) and aircraft platforms. Support the development of the Navy's Modernized GPS User Equipment (UE) efforts as they apply to GPNTS shipboard applications and aircraft platforms. Participate in GPS Wing procurements wherever applicable for GPS Modernization Enhancements. Develop the Navy's specifications necessary to capture and implement future GPS enhancements.

(U) F. Metrics:

Quarterly program reviews, monthly financial reviews to evaluate cost, schedule, performance, and award fee inputs.

Exhibit R-2a, RDTE Budget Item Justification

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Exhibit R-3 Cost Analysis (page 1)

DATE:

May 2009

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			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY09 Cost	FY09 Award Date	FY10 Cost	FY10 Award Date					Target Value of Contract
Product Development	Various	Product Vendors	279.576	5.346	Various	4.000	Various					
Product Development (SSC-SD)	WX	SSC-SD	68.759	0.850	10/08	0.800	10/09					
Product Dev (other in house)	WX	Various Field Activities	439.397									
Systems Engineering	Various	Various Govt/Contractor	13.468	2.923	Various	2.000	Various					
Subtotal Product Development			801.200	9.119		6.800						
Remarks:												
Development Support	Various	Various	12.710									
Software Development	Various	SSC-SD/Platform Primes	9.100	1.000	10/08	0.200	10/09					
Integrated Logistics Support	Various	SSC-SD/NAWC/Various Contractors	4.857	0.900	10/08	0.645	10/09					
Training Development	WX	SSC-SD/NAWC	3.525	0.600	10/08	0.800	10/09					
Technical Data	Various	Platform PMO's	3.100	0.600	10/08	0.500	10/09					
Subtotal Support			33.292	3.100		2.145						
Remarks:												

Exhibit R-3 Cost Analysis

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: May 2009		
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 Categories		Contract	Performing	Total		FY 09		FY 10				Target	
		Method	Activity &	PY s	FY 09	Award	FY 10	Award				Value of	
		& Type	Location	Cost	Cost	Date	Cost	Date				Contract	
Test & Evaluation (NAWC PAX)		WX	NAWC PAX	23.429	2.500	10/08	2.000	10/09					
Test & Evaluation (DCS)		CPAF	DCS CORP PAX	3.826	0.450	10/08	0.500	10/09					
Test & Evaluation (SSC-SD)		WX	SSC-SD	5.831	1.144	10/08	1.000	10/09					
Test & Evaluation Platform Testing		Various	VARIOUS CONTRACTORS	19.377	6.188	Various	3.850	Various					
Subtotal T&E				52.463	10.282		7.350						
Remarks:													
Contractor Engineering Support		Various	DCS, SAIC, ARINC	10.157	1.800	10/08	1.800	10/09					
Government Engineering Support		WX	SSC, NAWC, WR	8.799	2.200	10/08	2.000	10/09					
Program Management Support		CPAF	DCS, Price Systems	15.053	1.847	10/08	1.800	10/09					
Subtotal Management				34.009	5.847		5.600						
Total Cost				920.964	28.348		21.895						
Remarks:													

Exhibit R-3 Cost Analysis

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CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																								DATE: May 2009								
APPROPRIATION/BUDGET / PROGRAM ELEMENT NUMBER AND NAME																								PROJECT NUMBER AND NAME								
RDT&E, N / BA-5				0604777N NAVIGATION/ID SYSTEMS																				0921 NAVSTAR GPS EQUIPMENT								
Fiscal Year	2008				2009				2010																							
Quarter	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				
Air Navigation Warfare (NAVWAR) Acquisition M/S		△ GAS-1 Opt				△ Follow-on GAS-1 Award				△ GAS-1 Opt																						
			△ ADAP Award			△ ADAP Opt				△ ADAP Opt																						
	Conformal array Development																															
Air Navigation Warfare (NAVWAR)	DT, OT																															
Integration and T&E M/S	DT, OT				DT, OT				DT, OT																							
	E2D DT & OT																															
Air Navigation Warfare (NAVWAR)	MH-60S Installs																															
Platform Installation	AV-8B Installs																															
	P-3C Installs																															
	H-53 Installs																															
System Deliveries**	124				80				32																							

R-1 Shopping L

* ADAP (Advanced Digital Antenna Production), C-CRPA (Conformal Controlled Reception Pattern Antenna), GAS-1/1N (GPS Antenna System /Navy) are Anti-Jam (AJ) antenna solutions for designated platforms.

* ADAP (Advanced Digital Antenna Production) Contract award has moved from 2Q FY08 to 4Q FY 08

* MDA direction of 3/30/06 directed streamlining Air NAVWAR program from three phases to one. Milestone C decision of Oct 2001 applies to all current phases. Anticipate NAVWAR Air Phase 2 to integrate Modernized (M-Code) GPS Receivers.

** APN quantities are approximate year-end total number of NAVWAR system deliveries. Quantities do not include RDT&E units, Spares, or those projected for new construction aircraft.

Exhibit R-4, Schedule Profile

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Exhibit R-2, RD TEN Budget Item Justification

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																UNCLASSIFIED																DATE:															
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																															
Fiscal Year	2008				2009				2010																																						
Quarter	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																			
Sea Navigation Warfare (NAVWAR)																																															
Acquisition M/S																																															
Sea Increment 2 (ADAP)																																															
Sea Increment 3 (Sub)																																															
Sea Navigation Warfare (NAVWAR)																																															
Submarine AJ Capability																																															
Sea Navigation Warfare (NAVWAR)																																															
Platform T&E M/S																																															
Sea Increment 2 (ADAP) DT& OT	DT/OT (DDG)				DT (Surface Ships)																																										
Sea Increment 3 (Sub)																																															
Sea Navigation Warfare (NAVWAR)																																															
Platform Installation																																															
Sea Increment 1 (GAS-1)																																															
Sea Increment 2 (ADAP)																																															
Sea Increment 3 (Sub)																																															
System Deliveries **				20				37				50																																			

* ADAP is the Advanced Digital Antenna Production program, the Navy's development of a smaller Anti-Jam (AJ) antenna.

* ADAP (Advanced Digital Antenna Production) M/S C moved from 2Q FY08 to 3Q FY 09

* NAVWAR Sea has been restructured to reflect program changes. Phase 1A has been redesignated as Increment 1. Phase 1B has been terminated and installations planned for this phase are deferred to ADAP (Increment 2).

* Submarine integrations have been redesignated as Increment 3.

**Quantities are approximate year-end total number of NAVWAR system deliveries. Quantities do not include RDT&E units, SCN or Spares.

Exhibit R-4, Schedule Profile

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CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																				DATE: May 2009
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
Fiscal Year	FY08				FY09				FY10											
Quarter	1	2	3	4	1	2	3	4	1	2	3	4								
Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) Milestone/Acquisition Increment 1					△ AS/AP	△ APB △ TEMP	△ MS B			△ CDR △ DRR		△ LRIP RFP								
GPNTS Milestone/Acquisition Increment 2																				
GPNTS CONTRACTS								△ Increment 1 AWARD												
GPNTS TEST & EVALUATION								△ In DT&E												

* Global Positioning System (GPS) Positioning, Navigation, Timing (PNT) Service GPNTS will be a single Program of Record (POR), which will receive, process, and distribute three dimensional position, velocity, acceleration, time, and frequency in the formats required by shipboard user systems. GPNTS will be scaleable to accommodate back fit of current legacy PNT systems as well as forward fit of new platforms.

* GPNTS Acquisition Strategy (AS)/Acquisition Plan (AP), Acquisition Program Baseline (APB), and Milestone B in FY09 are WRN-X and Global Positioning System (GPS) Modernization pre-acquisition activities.

* Increment 1 will develop, acquire, and field a baseline GPNTS integrating current Selective Availability Anti-Spoof Module (SAASM) GPS receiver. GPNTS will be based on open standards in a Service Oriented Architecture (SOA) that will provide an open, extensible, and modernized replacement for the current fleet PNT systems, while targeting Common Computing Environments (CCE) such as Consolidated Afloat Networks Enterprise Services (CANES).

* Increment 2 will integrate Military GPS User Equipment (MGUE), which will allow the U.S. Navy to leverage current and future technology that will allow the U.S. Navy to leverage current and future technology development provided by the GPS Wing (GPSW), including Military Code (M-Code) and Protection of Navigation (PRONAV) security architecture.

Exhibit R-4, Schedule Profile

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CLASSIFICATION:

EXHIBIT R-4a, Schedule Detail						UNCLASSIFIED			DATE: May 2009
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		
Air Navigation Warfare (Navwar) Profile		FY 2008	FY 2009	FY 2010					
Conformal Array Development		1-4Q							
H-53 DT/OT		1-4Q	1-4Q						
AV-8B DT/OT									
F/A 18 E/F/G DT/OT		1-4Q	1-4Q	1-4Q					
E-2D DT/OT		1-4Q							
Sea Navigation Warfare (Navwar) Profile									
Increment 3 (Phase 2) M/S B (FEF)				2Q					
Increment 3 (Phase 2) DT/OT									
Increment 3 (Phase 2) M/S C LRIP									
Increment 3 (Phase 2) FRP									
Increment 3 (Phase 2) IOC									
Increment 2 (ADAP) DT/OT		1-4Q	1-4Q	1-4Q					
Increment 2 (ADAP) M/S C LRIP			3Q						
Increment 2 (ADAP) FRP				1Q					
Increment 2 (ADAP) IOC				3Q					
Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS)									
Increment 1									
MS B			3Q						
MS C									
M/S C LRIP									
FRP									
IOC									
Increment 2									
MS B									
MS C									

*GPNTS Acquisition Strategy (AS)/Acquisition Plan (AP), Acquisition Program Baseline (APB), and Milestone B in FY09 are WRN-X and Global Positioning System (GPS) Modernization pre-acquisition activities.

Exhibit R-4a, Schedule Detail

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
1253 Combat Identification Systems	11.684	9.467	30.399					
RDT&E Articles Qty	5	2	18					

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.

In July 2006, the Navy MK XIIA Mode 5 program was approved for entry into the Production and Deployment Phase and Low Rate Initial Production. In March 2007, Joint Requirements Oversight Council Memorandum (JROCM 047-07) endorsed a Mode 5 Joint Initial Operational Capability (IOC) in FY14 and Joint Full Operational Capability (FOC). An amendment to the LRIP Acquisition Program Baseline was signed in June 2008 to reschedule IOT&E in support of DoD synchronization efforts.

The FY 2008 and out RDT&E articles include Mode 5 cryptographic modules and associated hardware and software changes to AN/APX-123, AN/APX-119, and AN/APX-111. These RDT&E units are to support hardware, software, and integration efforts to host systems on remaining aircraft T/M/S, including AH-1Z/UH-1Y, E-2D, KC-130J, MV-22, VH-71A, and F/A-18E/F and EA-18G.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS		
B. Accomplishments/Planned Program				
Mode 5 prototype hardware, cryptographic module	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.372	2.450	18.364	
RDT&E Articles Quantity	5	2	18	
Perform development of kits for installation into existing fleet assets including AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, and AN/APX-111 Combined Interrogator Transponder. Repair and correct deficiencies identified during testing and procure low rate initial production (LRIP) units to support testing and platform integration. LRIP units include Mode 5 cryptographic module install kits for AN/UPX-37/41C, AN/APX-118/123, AN/APX-119, and AN/UPX-24 with associated hardware and software changes to the host boxes. Perform platform integration efforts on AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, AN/APX-119 Transponder, and AN/APX-111 Combined Interrogator Transponder.				
Mode 5 systems engineering and ILS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.798	3.453	5.248	
RDT&E Articles Quantity				
Perform systems engineering and analysis in support of Mode 5 hardware/software development on AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Digital Transponder, AN/APX-119 Transponder, AN/APX-111 Combined Interrogator Transponder, 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.				
Mode 5 Upgrade DT & OT	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.514	3.564	6.787	
RDT&E Articles Quantity				
Perform Mode 5 developmental and operational test phases for AN/UPX-37/41C Interrogator, AN/APX-118/123 Common Transponder, AN/APX-119 Transponder, and AN/APX-111 Combined Interrogator Transponder.				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME 1253 COMBAT IDENTIFICATION SYSTEMS													
C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 60%;"><u>Line Item No. & Name</u></th> <th style="text-align: right; width: 10%;"><u>FY 2008</u></th> <th style="text-align: right; width: 10%;"><u>FY 2009</u></th> <th style="text-align: right; width: 10%;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>P-1 #62: Identification Systems - OPN</td> <td style="text-align: right;">25.175</td> <td style="text-align: right;">31.367</td> <td style="text-align: right;">38.682</td> </tr> <tr> <td>P-1 #55: Identification Systems - APN-5</td> <td style="text-align: right;">10.213</td> <td style="text-align: right;">11.997</td> <td style="text-align: right;">24.125</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The Acquisition Strategy is to develop Mode 5 Engineering Change Proposals (ECPs) for modern Mark XII Identification Friend or Foe (IFF) equipment and integrate into all Navy Combat Weapons systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.				<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	P-1 #62: Identification Systems - OPN	25.175	31.367	38.682	P-1 #55: Identification Systems - APN-5	10.213	11.997	24.125
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>												
P-1 #62: Identification Systems - OPN	25.175	31.367	38.682												
P-1 #55: Identification Systems - APN-5	10.213	11.997	24.125												

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604777N NAVIGATION / ID SYSTEMS			1253 COMBAT IDENTIFICATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Development	FFP	LOCKHEED, OWEGO, NY	3.047	0.490	12/08	1.100	12/09					
Primary Hardware Development	WX	NAWCWD, CHINA LAKE CA	3.623	0.180								
Primary Hardware Development	CPFF	NG , BETHPAGE, NY	2.200	1.692	12/08		12/09					
Primary Hardware Development	VAR	BAE, GREENLAWN NY	26.283			0.264						
Primary Hardware Development	TBD	BOEING, PHIL, PA	0.000			16.200	12/09					
Primary Hardware Development	TBD	L-3, WACO, TX	0.000				01/10					
Primary Hardware Development	TBD	RAYTHEON, TOWSON, MD	0.000	0.088	12/08	0.800	12/09					
Systems Engineering	WX	NAWCAD, PAX RIVER MD	4.100	1.740	11/08	2.833	11/09					
Systems Engineering	WX	NAWCWD, CHINA LAKE				1.200						
Systems Engineering	WX	NAWCAD, ST INDIGOES MD	9.428	1.351	11/08	0.465	11/09					
GFE												
Award Fees												
Subtotal Product Development			48.681	5.541		22.862						
Remarks:												
Development Support												
ILS	VAR	VAR	1.097	0.362	11/08	0.750	11/09					
Software Development	VAR	VAR	2.708									
Technical Data	VAR	VAR	0.053									
Subtotal Support			3.858	0.362		0.750						
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDTE&E, N / BA-5			0604777N NAVIGATION / ID SYSTEMS				1253 COMBAT IDENTIFICATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Operational Test & Evaluation	WX	NAWCAD, PAX RIVER MD	1.871	2.411	11/08	0.400	11/09						
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER MD	11.979	1.007	11/08	2.657	11/09						
Test Assets	VAR	VAR	1.638	0.146	11/08	3.730	11/09						
Subtotal T&E			15.488	3.564		6.787							
Remarks:													
Contractor Engineering Support	VAR	VAR	0.450										
Government Engineering Support	VAR	VAR	1.811										
Program Management Support	VAR	VAR	1.961										
ETS (Non-FFRDC)	WX	NAWCAD, PAX RIVER MD	0.174										
Subtotal Management			4.396	0.000		0.000							
Remarks:													
Total Cost			72.423	9.467		30.399							
Remarks:													

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5								PROGRAM ELEMENT NUMBER AND NAME 0604777N, NAVIGATION/ID SYSTEM				PROJECT NUMBER AND NAME 1253, COMBAT IDENTIFICATION SYSTEMS												
Fiscal Year	FY 2008				FY 2009				FY 2010															
	1	2	3	4	1	2	3	4	1	2	3	4												
Acquisition Milestones									★	FRPDR & IOC														
Contracts &	▲ LRIP Option Executed						△ LRIP Option Execute		▲	FRP	Contract Award	△ AN/APX-111	△ AN/AP											
Deliverables	LRIP Deliveries (DI, CXP)																							
	Production Line Insertion																							
Development & Engineering																								
Engineering	Prepare & Evaluate ECPs/SCDs																							
Integration	Host Platform Integrations (Air)																							
Test & Evaluation Milestones				TECHEVAL IT-C4	▲		△	OTRR																
							□	CT-C1 IOT&E																
								△	OPEVAL Out Brief															

R-1 SHOPPING LIST - Item No. 125

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME	
RDTE&E, N / BA-5	0604777N NAVIGATION / ID SYSTEM			1253 COMBAT IDENTIFICATION SYSTEMS	
Schedule Profile	FY 2008	FY 2009	FY 2010		
Full Rate Production Decision Review (FRPDR) & IOC			1Q		
FRP Contract Award & APX-119 Integration Begins			1Q		
Low-Rate Initial Production Contract Award and Options	1Q	3Q			
Low-Rate Initial Production Deliveries (CXP, DI)	1Q-4Q	1Q-4Q	1Q-4Q		
FRP Deliveries					
Prepare & Evaluate ECPs/SCDs	1Q-4Q	1Q-4Q	1Q-4Q		
Production Line Insertion	1Q-4Q	1Q-4Q	1Q-4Q		
Host Platform Integrations (Air)	1Q-4Q	1Q-4Q	1Q-4Q		
TECHEVAL (IT-C4)		2Q			
Operational Test Readiness Review (OTRR)		3Q			
IOT&E		4Q			
OPEVAL Out Brief			1Q		
Mode 5 Joint IOC					
Mode 5 Spiral Development					
Follow-on Test and Evaluation			1Q-4Q		

R-1 SHOPPING LIST - Item No.

125

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604784N Distributed Surveillance System			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	0.000	1.995	0.000					
9999 Congressional Add	0.000	1.995	0.000					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Add								

R-1 SHOPPING LIST - Item No. 126

UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: MAY 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604784/DISTRIBUTED SURVEILLANCE SYSTEM			PROJECT NUMBER AND NAME 9999 CONGRESSIONAL ADDS														
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010																
Project Cost		1.995																	
RDT&E Articles Qty																			
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Add B. Accomplishments/Planned Program <table border="1"><tr><td>9857A Sure Track Re-Architecture & Sensor Augmentation</td><td>FY 08</td><td>FY 09</td><td>FY10</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>1.995</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></table> The FY09 Sure Track effort will implement the new Open Map Display, with respect to Atlantic Test Range (ATR) requirements, in a manner that makes it compatible with the new Services Oriented Architecture (SOA).								9857A Sure Track Re-Architecture & Sensor Augmentation	FY 08	FY 09	FY10	Accomplishments/Effort/Subtotal Cost		1.995		RDT&E Articles Quantity			
9857A Sure Track Re-Architecture & Sensor Augmentation	FY 08	FY 09	FY10																
Accomplishments/Effort/Subtotal Cost		1.995																	
RDT&E Articles Quantity																			

R-1 SHOPPING LIST - Item No. 126

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	1,848.883	1,744.570	1,741.296					
2261 JSF	1,515.688	1,498.878	1,709.350					
3194 Joint Reprogramming Center	5.378	29.678	31.946					
9999 Congressional Adds	327.817	216.014						

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, 7 other International countries, and 3 Foreign Military Sales cases are participants in the JSF Program.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
FY09 President's Budget:	1,868.046	1,532.748	1,028.674
FY10 President's Budget:	1,848.883	1,744.570	1,741.296
Total Adjustments	-19.163	211.822	712.622

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments		216.558	
SBIR/STTR/FTT Assessments	-18.663		
Program Adjustments	-0.500		712.733
Rate/Misc Adjustments		-4.736	-0.111
Subtotal	-19.163	211.822	712.622

Schedule:

Changes to Program Master Schedule reflect Flight Test Extension.

Technical:

Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	1,515.688	1,498.878	1,709.350					
RDT&E Articles Qty	1	9	8					

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

Quantity of 13 RDT&E articles reflect flight test articles (including one asset in FY06) and 6 ground test articles are budgeted in SDD which includes total program quantities for Navy and Air Force.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The F-35 Lightning II (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, 7 other International countries, and 3 Foreign Military Sales cases are participants in the JSF Program. The following pages combine Navy, Air Force, international, and Congressional Add funding.

The following table presents the total dollars distributed in section B of this R-2A. This has been done to give a more accurate picture of the total dollars being spent on each task.

	<u>PU</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Navy	2261	1,515.688	1,498.878	1,709.350
Navy Cong Add	2261A	231.416	214.418	
Navy Cong Add	9C38A	96.401		
Navy Cong Add	9D99A		1.596	
Air Force	3831	1,939.107	1,734.299	1,858.055
International		552.720	250.615	114.080
Total		4,335.332	3,699.806	3,681.485

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM		
B. Accomplishments/Planned Program				
System Development & Demonstration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2,926.312	2,355.639	2,793.947	
RDT&E Articles Quantity	1	9	8	
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.				
F135 Propulsion System	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	654.258	594.154	405.000	
RDT&E Articles Quantity				
Continue SDD execution of the F135 Propulsion System with Pratt & Whitney to include engine testing, autonomic logistics, integration and performing technology maturation efforts.				
F136 Propulsion System	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	463.609	417.000	0.000	
RDT&E Articles Quantity				
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.				

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM		
B. Accomplishments/Planned Program (Cont.)				
Systems Engineering	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	23.642	33.642	38.963	
RDT&E Articles Quantity				
Continue SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support.				
Development Test and Evaluation	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	79.369	124.093	248.612	
RDT&E Articles Quantity				
Government Development Test and Evaluation (DT&E) continues 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).				
Development Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	135.229	127.673	136.831	
RDT&E Articles Quantity				
Continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.				

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM	
B. Accomplishments/Planned Program (Cont.)			
Program Management Support	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	52.912	47.606	58.132
RDT&E Articles Quantity			
Continue management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives.			

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) PROGRAM	

C. OTHER PROGRAM FUNDING SUMMARY:
This is a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Navy. Program element 0604800N continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom, seven other international countries, and 3 Foreign Military Sales cases are participants in the SDD phase of JSF. International cooperation was further enhanced through the implementation of the Production, Sustainment, and Follow-on Development (PSFD) MOU, by the US and its eight SDD international partners, which extends the relationship through the life of the Program.

<u>RDT&E:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0604800F Joint Strike Fighter	1,939.107	1,734.299	1,858.055
International Partner Funding	552.720	250.615	114.080

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 FY06.

<u>RELATED PROCUREMENT:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0204146N APN-1 (P-1 No. 6 F-35 (JSF) - Joint Strike Fighter) (Quantity)	1,223.640 (6)	1,650.088 (7)	4,478.048 (20)
0207142F P-1 No. 1 F-35 (Quantity)	1,481.853 (6)	1,721.558 (7)	2,479.140 (10)

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			May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDTE, N / BA-5	0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	2261, JOINT STRIKE FIGHTER (JSF) PROGRAM		
RELATED SPARES AND REPAIR PARTS:	FY 2008	FY 2009	FY 2010	
0207142F, BPAC: 16F35A	69.756	60.930	129.710	
BLI 060510	0.000	32.653	248.958	
RELATED OTHER PROCUREMENT NAVY:	FY 2008	FY 2009	FY 2010	
BLI 426500	0.855	2.972	6.036	
RELATED MILCON:	FY 2008	FY 2009	FY 2010	
0207124F	74.300	22.100	48.800	
0203176N			1.552	
0212176N			23.008	
0212576N			3.007	

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EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM
D. 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. (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 through FY09 when program funding ends. The updated JSF Acquisition Strategy and program schedule were approved following the May 05 DAB. APR 06 DAB authorized full funding for LRIP I procurement. USAF LRIP I Advanced Procurement funding was awarded during FY06, followed by the USAF Regular Procurement award in FY07. USAF and DoN Advanced Procurement funding for LRIP II was awarded during FY07. USAF LRIP II full-funding contract award occurred in April 08. DoN LRIP II full funding contract was awarded July 08, upon successful first flight of the DoN STOVL aircraft. USAF and DoN Advance Procurement funding for LRIP III was awarded in May 08, LRIP III full funding was awarded April 09. LRIP IV advance procurement was awarded in Feb 09 and full funding contract award will occur in Feb 10. Budget reflects a one year flight test extension approved by the Executive Steering Committee.		

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Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM			2261, JOINT STRIKE FIGHTER (JSF) PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary H/W Dev - Air System	C/CPAF	Lockheed, Ft. Worth TX	20,633.361	2,355.247	10/08	2,793.947	10/09					
Primary H/W Dev - Air System	SS/BOA	Lockheed Martin	5.630									
Primary H/W Dev - Air System	SS/IDIQ	Lockheed Martin	17.613	0.391								
Primary H/W Dev - F135 Engine	SS/CPAF	Pratt&Whitney, Hartford CT	5,512.000	594.041	10/08	405.000	10/09					
Primary H/W Dev - F135 Engine	SS/BOA	Pratt & Whitney	36.016									
Primary H/W Dev - F135 Engine	SS/IDIQ	Pratt & Whitney	14.677	0.113	10/08							
Primary H/W Dev - F136 Engine	SS/CPAF	General Electric, Cinn. OH	382.753	417.000	10/08							
Primary H/W Dev - F136 Engine	SS/BOA	General Electric	6.348									
Primary H/W Dev - F136 Engine	SS/IDIQ	General Electric	109.849									
Primary H/W Dev - F136 Engine SDD	SS/CPAF	GE/RR Fighter Engine Team	1,247.827									
Systems Engineering	WX	Various	200.527	33.642	10/08	38.963	10/09					
Subtotal Product Development			28,166.601	3,400.434		3,237.909						
Remarks: Total cost includes Navy, Air Force and International Cooperative Partners contributions. Lockheed Martin Award Fee Estimate: FY09 \$218.398, FY10 \$167.202 Pratt & Whitney Award Fee Estimate: FY09 \$65.451, FY10 \$37.037 General Electric/Rolls Royce Fighter Engine Team Award Fee Estimate: FY09 \$40.599												

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Exhibit R-3 Cost Analysis (page 1)						DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			2261, JOINT STRIKE FIGHTER (JSF) PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Development Support	WX	AFFTC/Eglin	51.233	21.320	10/08	17.151	10/09					
Development Support	WX	ASC/AFRL	29.136	5.259	10/08	2.532	10/09					
Development Support	WX	Bolling AFB	5.743	3.591	10/08							
Development Support	MIPR	DMEA	4.112									
Development Support	MIPR	ESC	6.005	0.280	10/08							
Development Support	MIPR	AEDC/Fuel	84.628	40.582	10/08	49.242	10/09					
Development Support	WX	Jacksonville	3.161			0.273	10/09					
Development Support	MIPR	Various	188.213	5.780	10/08	6.040	10/09					
Development Support	WX	NAWC China Lake	63.834	15.186	10/08	28.271	10/09					
Development Support	WX	NAWC TSD Orlando	4.455	1.596	10/08	1.440	10/09					
Development Support	WX	NAWC Patuxent River	203.073	32.776	10/08	31.391	10/09					
Development Support	WX	NSWC	2.263	0.591	10/08	0.491	10/09					
Development Support	WX	SPAWAR	5.757	0.711	10/08							
Development Support	MIPR	Various	24.187									

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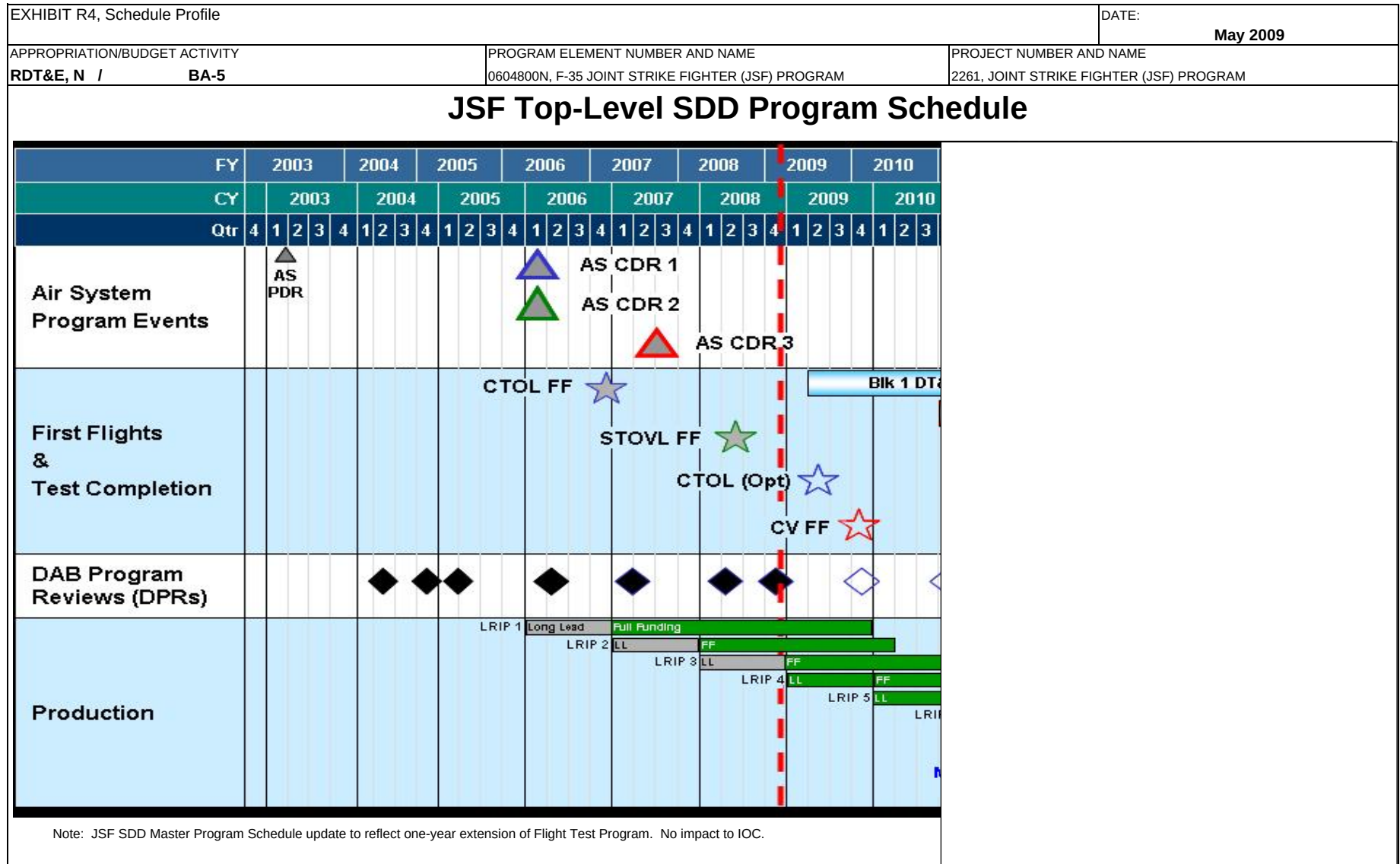
Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME 2261, JOINT STRIKE FIGHTER (JSF) PROGRAM					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Developmental Test & Evaluation	WX	NAWC Patuxent River	117.359	56.587	10/08	107.700	10/09				
Developmental Test & Evaluation	MIPR	Edwards AFB- AFFTC	121.850	32.231	10/08	96.600	10/09				
Developmental Test & Evaluation	WX	Various	36.646	2.070	10/08	1.212	10/09				
Developmental Test & Evaluation	WX	NAWC China Lake	31.303	10.210	10/08	12.260	10/09				
Developmental Test & Evaluation	MIPR	Eglin AFB	52.699	9.785	10/08	14.100	10/09				
Developmental Test & Evaluation	MIPR	JITC	0.505	1.140	10/08	0.640	10/09				
Operation Test & Evaluation	WX/MIPR	Various	13.518	12.070	10/08	16.100	10/09				
Subtotal T&E			373.880	124.093		248.612					
Remarks: Total cost includes Navy, Air Force and International Cooperative Partners contributions.											
Program Management Support	SS/CPFF	Stanley, Arlington, VA	88.651	18.827	11/08	17.700	11/09				
Program Management Support	SS/CPFF	Mantech, Arlington, VA	27.082	6.762	11/08	7.100	11/09				
Travel	WX/MIPR	Various	21.288	4.310	10/08	3.849	10/09				
Program Management Support	C/CPAF	Alion/Jacobs Sverdrup, Arl. VA	43.421	14.670	11/08	14.093	11/09				
Program Management Support	SS/CPFF	Wyle Labs (AI-ES), Arl. VA	44.732	3.036	11/08	15.389	11/09				
Subtotal Management			225.174	47.606		58.131					
Remarks: Total cost includes Navy, Air Force and International Cooperative Partners contributions. Prior Years reflect \$12,667.401 USN / \$12,700.965 USAF / \$4,073.089 International / Total \$29,441.455 FY 2009 reflects \$1,714.892 USN / \$1,734,299 USAF / \$250.615 International / Total \$3,699.806 FY 2010 reflects \$1,709.350 USN / \$1,858.055 USAF / \$114.080 International / Total \$3,681.485											
Total Cost			29,441.455	3,699.806		3,681.485					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME 3194, JOINT REPROGRAMMING CENTER			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost USRL BUILD UP		5.378	29.678	31.946				
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The United States Research Laboratory (USRL)/Capability Concept project, previously referred to as the JSF Joint Reprogramming Center (JRC)/Capability Concept is required to adequately develop and maintain Operation Sensor Engineering F-35(V) Mission Data to support USN, USMC, and USAF multi-mission objectives. USRL will allow rapid operational response to threat changes. Funding for this project unit (3194) is provided specifically for: - Aircraft sensor function and combat identification - Conducting Offensive Identification/Jamming of potential threats - Providing self defense against surface threats, air, and missile threats. - Detecting and identifying targets, to include moving land, air, and missile targets - Providing mission planning to ensure aircraft survivability - Conducting offensive operations against surface threats; - Conducting sensor management and information processing. - Software development for this requirement is funded through the F-35 Joint Strike Fighter SDD baseline.								

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 3194, JOINT REPROGRAMMING CENTER		
B. Accomplishments/Planned Program				
USRL BUILD UP	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	4.789	26.678	25.046	
RDT&E Articles Quantity				
Funds provided to Lockheed Martin Aero in support of reprogramming techniques, development and verification capacity required to adjust to emergent threats, and validate system effectiveness to increase survivability of the weapon system.				
Development Support	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	0.589	3.000	6.900	
RDT&E Articles Quantity				
SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support of Joint Reprogramming Center.				

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	3194, JOINT REPROGRAMMING CENTER	

C. OTHER PROGRAM FUNDING SUMMARY:
This is a joint program with no executive service. Program Element 0604800F continues USAF development efforts budgeted in 0603800F.

<u>RDT&E:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0604800F Joint Strike Fighter	38.364	40.095	32.385

Remarks: USAF is funding this requirement jointly with the USN beginning in FY08 as a subset of PE 0604800F.

D. ACQUISITION STRATEGY:
The Joint Reprogramming Capability is a subset of the JSF Program and falls within the JSF acquisition strategy. JRC is needed to support scheduled Initial Operational Capability dates (and supporting test activity) for the three JSF variants. To that end, a concept of operations (CONOPS) is being developed for JRC to address Mission Data (MD) development and verification/validation/testing and to merge service unique requirements into Joint processes/procedures. Previously envisaged as a single facility, JRC now is comprised of two distinct facilities under the JRC concept. The United States Reprogramming Laboratory (USRL) will support U.S. Joint Service reprogramming requirements; the Partner Reprogramming Laboratory will focus on International Partner areas of interest.

Inter-Service collaboration is ongoing to formalize the USRL requirements planning process and will eliminate duplication of effort, will maximize technology to improve configuration control, will employ advance networks, and will ensure the implementation of an enterprise (single shared database) solution. By capitalizing on legacy platform synergy, operational mission data intellect, proven processes, and existing reprogramming center resources, this approach also will improve efficiencies. A Joint Command reprogramming authority will determine/manage reprogramming priorities and implementation authority.

USRL Mission data development strategy is based upon an assessment of legacy systems, F-22 data, corporate expertise of Eglin/Pt Mugu personnel, adjusted cost and schedule projections keyed to complexity of multi-variant and multi-mission aircraft, JSF-specific utilization of multiple sources of non-sustained disparate, raw, intelligence data, development of threat assessment - metrics and build-up of real-world scenarios for systems verification and validation. These efforts support JSF operational requirements, interoperability, and fratricide mitigation.

Although the F-35 JSF SDD Program has contracted with Lockheed Martin and Pratt & Whitney for the SDD of the JSF, LM does not have the laboratory space availability or expertise to perform operational evaluation of lab and flight test data and support field recommendations to the level needed. The complexity and magnitude of JSF mission data loads drives the decision to utilize government and contractor resources to design and develop a joint-Service reprogramming facility at Eglin AFB.

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-05			PROGRAM ELEMENT 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROG			PROJECT NUMBER AND NAME 3194, JOINT REPROGRAMMING CENTER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary H/W and S/W Dev	C/CPAF	Lockheed, Ft. Worth TX	4.789	26.678	10/08	25.046	10/09					
Subtotal Product Development			4.789	26.678		25.046						
Remarks: Award Fee Plan: FY09 \$1.401												
Development Support	WX	NAWC China Lake/Pt/Mugu	0.589	3.000	10/08	6.900	10/09					
Subtotal Support			0.589	3.000		6.900						

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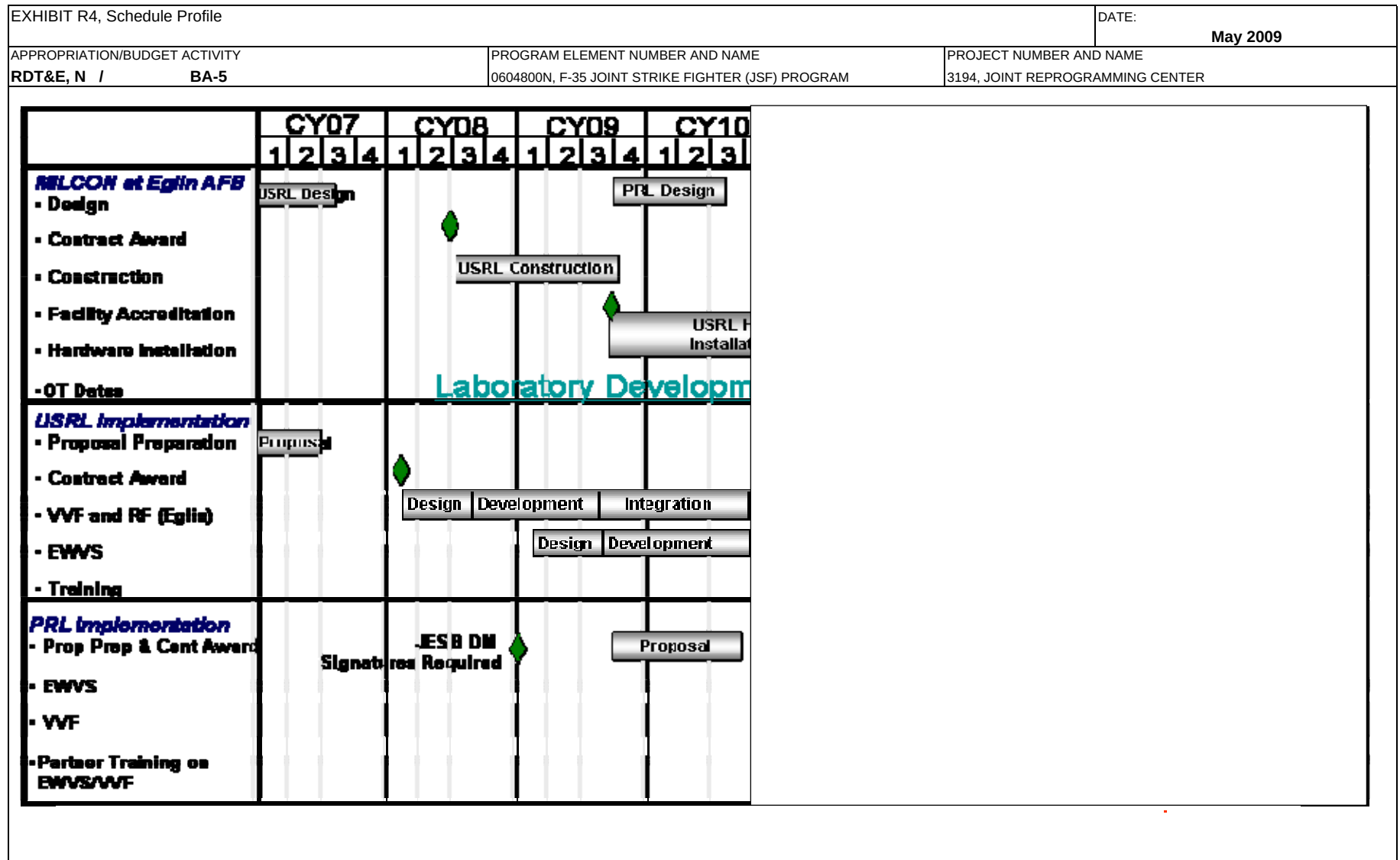
Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-05			PROGRAM ELEMENT 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROG			PROJECT NUMBER AND NAME 3194, JOINT REPROGRAMMING CENTER							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
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							
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support													
Travel													
Transportation													
SBIR Assessment													
Subtotal Management			0.000	0.000		0.000							
Remarks:													
Total Cost			5.378	29.678		31.946							
Remarks:													

R-1 SHOPPING LIST - Item No. 2

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CLASSIFICATION:



R-1 SHOPPING LIST - Item No. 127

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R-1 SHOPPING LIST - Item No. 127

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	327.817	216.014						
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds to the Joint Strike Fighter Program Include: FY08: 1) F136 Fighter Engine Team (FET) Alternate Engine incremental funding. 2) Production Affordability Initiatives FY09: 1) F135B Lift Fan Component Manufacturing 2) Maintain Development of 2nd source for engine								

R-1 SHOPPING LIST - Item No. 127

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N, F-35 JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDs		
B. Accomplishments/Planned Program				
2261A MAINTAIN DEV OF 2ND SOURCE ENGINE	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	231.416	214.418		
RDT&E Articles Quantity				
Maintain Development of 2nd source for F-35 Lightning II engine General Electric/Fighter Engine Team (GE/FET). Funding continues 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 0603800F). Efforts include technical technology maturation, engine testing, autonomic logistics and integration.				
9C38A PRODUCTION AFFORDABILITY	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	96.401			
RDT&E Articles Quantity				
To provide funds for Production Affordability initiatives to protect JSF production schedule profile.				
9D99A F-35B LIFT FAN COMPONENT	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost		1.596		
RDT&E Articles Quantity				
To provide funds to JSF for affordability changes to the Lift Fan Driveshaft Coupling design. Changes will improve production efficiency, reduce the cost of driveshaft manufacturing, and help support engine and overall program cost. This change not only lowers product costs but has a weight decrease and added stretch/compression capabilities which aid in aircraft installation and operational requirements.				

R-1 SHOPPING LIST - Item No. 127

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.							
RDT&E, N / BA 5 / System Development and Demonstration		0605013M Information Technology and Development							
COST (\$ in Millions)		FY08	FY09	FY10	FY10 OCO	FY10 Total			
Total PE Cost		28.068	30.156	9.868	0.000	9.868			
C2906 Marine Corps Information Technology Dev/Mod		27.103	30.156	9.868	0.000	9.868			
C9999 Congressional Adds		0.965	0.000	0.000	0.000	0.000			
Quantity of RDT&E Articles									
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
This program establishes, sustains and continuously refines 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 operation.									
B. PROGRAM CHANGE SUMMARY									
		FY 2008	FY 2009	FY 2010					
Funding:									
FY 2009 President's Budget:		25.100	30.238	13.058					
FY 2010 President's Budget:		28.068	30.156	9.868					
Total Adjustments:		2.968	-0.082	-3.190					
Summary of Adjustments:									
a. SBIR/STTR Transfer:		-0.254							
b. Program Adjustments:		3.607	-0.082	-3.047					
c. Congressional Adjustments:		-0.385							
d. Rate/Misc. Adjustments:				-0.143					
Subtotal		2.968	-0.082	-3.190					

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 5 System Dev & Demonstration		PROGRAM ELEMENT NUMBER AND NAME 0605013M Information Technology and Development			PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology			
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total		
Project Cost		27.103	30.156	9.868	0.000	9.868		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: INSENSITIVE MUNITIONS (IM) funding supports two programs: Insensitive Munitions (IM) and Marine Ammunition Knowledge Enterprise (MAKE). IM R&D initiative will focus on the development of improved packaging materials/design, venting technology, development/incorporation of a less sensitive propelling charge and all associated munitions qualification testing of the incorporated technologies. This development effort is being executed to directly improve the IM responses for the 120mm Expeditionary Fire Support System (EFSS) XM1103 Smoke and Precision Extended Range Munition (PERM) cartridges in the areas of Fast/Slow Cook-Off, Fragment Impact and Sympathetic Reaction. The R&D initiative of MAKE is the enterprise knowledge repository designed, evolved and updated to facilitate knowledge dominance. MAKE provides the enterprise web based access to data and information to enable the decision making process. MAKE is a force multiplier and critical enabler in support of the Life Cycle Management (LCM) of the Corps' \$4 billion plus Class V(W) stockpile. DEFENSE MESSAGING SYSTEM (DMS) is an Office of the Secretary of Defense (OSD)-mandated program that replaced the Automatic Digital Network (AUTODIN). 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 will centralize the DMS functions including Fortezza Security Services. MARINE CORPS TRAINING INFORMATION MANAGEMENT SYSTEM (MCTIMS) replaced the mainframe program By Name Assignment (BNA), which managed all Marine Corps, school seats and interfaced with other service's school seat management programs. MCTIMS is the Marine Corps' official program of record for training and education management and is the single source upon which the Training and Education Command (TECOM) relies to manage training personnel, training seats, students, and other training resources. MCTIMS is the enterprise application upon which "standards base" instruction, education and training is built, delivered, tracked, and evaluated. MCTIMS will be establishing the unit training management module for all ground forces. This will provide commanders an enterprise level application which brings standardization in planning and scheduling training, recording of training against units and individual Marines, provide training assessments and report combat readiness to Department of Defense (DOD) systems. MANPOWER OPERATIONS SYSTEMS (MOS) is a portfolio of enterprise information technology systems and modules that support manpower business operations for the Total Force (active and reserve). The investment in the portfolio improves dataflow and increases reliability, functionality, and accuracy of data while reducing the manpower required to operate and maintain these systems/operations. Development is partially driven by regulatory and policy changes mandated by Congress, DOD, Department of the Navy (DON), and United States Marine Corps (USMC). The systems support all five-tiers of Manpower: 1) Individual Marine, 2) Small Unit Leader; 3) Unit, 4) Installation Personnel Administration Center (IPAC)/Disbursing Echelon, and 5) HQMC Manpower and Reserve Affairs (M&RA)/ Department of Finance Accounting Service (DFAS). The MOS portfolio provides support in functional areas such as Permanent Change of Station (PCS) assignments, retention, mobilization, manpower planning, line of duty determination, personnel accountability, individual augmentation, personnel records management and maintenance, management of case incidents, civilian professional development planning, pay entitlement determinations, promotion and performance evaluations and self service/visibility of personnel data. MOS interfaces with other systems to provide manpower data and web services functionality for pay and personnel transactions between systems. Systems in the portfolio include Manpower Assignment Support System (MASS), Performance Evaluation System (PES), Total Force Retention System (TFRS), Optical Digital Imaging - Records Management System (ODI-RMS), Class I/II/III (composed of Child and Spouse Abuse (CASA), Sexual Assault Incident Reporting Database (SAIRD) and Rape and Sexual Assault (RASA)), Marine Corps Medical Entitlements Data System (MCMEDS), Civilian Workforce Development Application (CWDA), and Manpower Mobilization Assignment System (MMAS). 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 Headquarters Marine Corps (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 environment. 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 HQMC Command, Control, Communications and Computers (C4), MCEITS will allow for new achieve architectural standardization, consolidated management, and seamless interoperability of, and access to the data residing in our currently fielded applications (business and tactical). Testing efforts will be focused on MCEITS Portal and MCEITS provided services operating within a Service Oriented Architecture (SOA) environment. We will be ensuring the ability to host services and applications in a Web Services enabled environment. MCEITS will also ensure NCES services are able to be federated throughout the Marine Corps to include Content Discover and Delivery (CD&D), Collaboration and Text Chat, between the service consumer and provider. MANPOWER PLANNING SYSTEMS (MPS) is a portfolio of systems, consisting of three systems; the legacy Manpower Models, the Total Force Data Warehouse (TFDW), and the replacement effort of the legacy Manpower Models, the Total Force Manpower Models Re-engineering effort (TFMMR). This portfolio provides the tools and data to support the creation of active and reserve modeling of accession, recruiting, training, classification, retention, promotion, mobilization, distribution, and assignment plans. The funding in MPS will provide the technical solution for process improvement and will strategically align manpower systems/functional process with the C4 architecture. MPS interfaces with other systems to utilize manpower data in model analysis and future year planning efforts. MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) is an enterprise level system to automate administrative procedures for the recruiting station (RS) operations. This customized automated system, centered around procedures in the Guidebook for Recruiters, Volume I, will dramatically improve efficiency and effectiveness in Marine Corps recruiting. Furthermore, Military Entrance Processing Command (MEPCOM) requires Marine Corps recruiting to provide information in electronic format only. MCRISS is the Marine Corps Recruiting Command's (MCRC) program to manage applicant processing from commitment to accession / commission into the Marine Corps and Marine Corps Reserve. This enterprise approach allows for efficient sharing of information about potential recruits and recruiter screening efforts, yielding a more cost effective process. TOTAL FORCE STRUCTURE MANAGEMENT SYSTEM (TFSMS) the Marine Corps' authoritative data source for force structure data and provider of the Marine Corps' Tables of Organization and Equipment. TFSMS defines present and future Marine Corps force structure, establishes the Marine Corps baseline for readiness reporting, justifies resource requirements and allocation and enables Marine Corps compliance with the Joint Staff and OSD initiative to standardize force structure representation by providing the Marine Corps Global Force Management (GFM) Organizational Server. TFSMS is a web-based system built on the Oracle E-Business suite and employing Cognos Report Net Business Intelligence software for the development of standard and ad-hoc queries. In FY08, TFSMS has over 12,000 users across the Marine Corps and provides authoritative force structure data to over 12 Marine Corps information systems. TFSMS continues development of functionality to complete Block 1 Capabilities Production Document (CPD) requirements, development of the GFM Org Server Non-secure Internet Protocol Routing Network and Secure Internet Protocol Routing Network (NIPRNET and SIPRNET) and acquisition planning/development of TFSMS Block 2. Hardware procurements for disaster recovery/continuity of operation, refresh of production/development, the TFSMS interim training lab as well as migration to Oracle Fusion are planned.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 5 System Dev & Demonstration	PROGRAM ELEMENT NUMBER AND NAME 0605013M Information Technology and Development		PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology	
SECURE OPERATIONAL NETWORK INFRASTRUCTURE CAPABILITY (SONIC) will provide critical infrastructure and operational capabilities that are secure and reliable, enabling command and control from the headquarters to the lowest tactical edge. SONIC will update the current aging classified IT infrastructure and support full Marine Corps' control over its C2 operational network by providing continuity, high availability, disaster recovery, and enhanced secure access to services and data. (U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	1.100	0.000	0.000
RDT&E Articles Qty				
INSENSITIVE MUNITIONS (IM) development in FY09 will focus on IM compliant munitions inventory. Based on USMC IM Strategic Plan this RDT&E program will focus on addressing IM deficiencies for EFSS in FY09. The MAKE strategy is to conduct assessments of service life effects on availability and Course of Action (COA) development to optimize asset utilization. Continue future enhancements to the Ammunition Budget Management System (ABMS). Develop decision support tools, in support of, implementing actions identified in the PM Ammunition Strategic Plan.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	0.268	0.571	0.178	0.000
RDT&E Articles Qty				
DEFENSE MESSAGING SYSTEM (DMS) during FY08 DMS contributed funds to Defense Information Systems Agency (DISA) to enable the Joint Interoperability Test Command (JITC) to test new products for the services to utilize. DMS purchased hardware peripherals to test Marine Corps messaging and an EMC Replication Manager Server Host to test replication signals to the Storage Area Network (SAN) to ensure proper communication signaling. FY09 DMS will test six High Assurance Guards (HAGs) to communicate between different security domains as well as utilize VMWare virtual software to test different operating systems and platforms. FY10 DMS will continue defense messaging testing and develop systems to improve vital communication among the six Area Control Centers (ACC).				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.906	0.000
RDT&E Articles Qty				
MARINE CORPS TRAINING MANAGEMENT INFORMATION SYSTEM (MCTIMS) will develop an automated system for unit training management with reporting capabilities to Defense Readiness Reporting System (DRRS), reporting the combat readiness of Marines. Development of the Unit Training Management Module will accommodate training plans, training schedules, training support requests.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	8.512	3.212	0.000	0.000
RDT&E Articles Qty				
MANPOWER OPERATIONS SYSTEMS (MOS) FY08 - FY10 development will focus on initial development of Case Management Module, specifically, the Installation Personnel Administration Center (IPAC) 1-4 increments. This automation of processes replaces the Marine administrator manpower reductions in the IPACs. During FY09, initial development of Drill Management Module (DMM) and Secure Personnel Accountability Module (SPAM) will be completed. FY09 -FY10 will include stabilization of Manpower Assignment Support System (MASS).				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	6.992	17.528	5.529	0.000
RDT&E Articles Qty				
MARINE CORPS ENTERPRISE INFORMATION TECHNOLOGY SERVICES (MCEITS) in FY08 conducted the required Modeling and Simulation (M&S), Manpower Analysis study, engineering and acquisition strategy, Life Cycle Cost Analysis (LCCE), Economic Analysis (EA) and Capability Development Document (CDD) to support Increment 1 Milestone B completion. In FY09; MCEITS efforts are focused on continued M&S and Manpower Analysis, commencement of System Integration (SI) design, platform and application integration, testing and correction of deficiencies. In FY10; MCEITS efforts are continued integration testing and development of the Capability Production Document (CPD) in support of Milestone C and the start of Increment I Initial Operational Capability (IOC) testing.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	6.246	2.002	0.000	0.000
RDT&E Articles Qty				
MANPOWER PLANNING SYSTEMS (MPS) re-engineering of TFMMR will provide long-term planning tools integral to the Human Resource Development Process (HRDP). The current portfolio of Manpower Models, in use in various form since 1960, are utilizing dated technology and algorithms. 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 Manpower Master Planning System. TFMMR's first increments will reach Initial Operational Capability (IOC) in 1st QTR FY10, retiring the legacy Models system.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 5 System Dev & Demonstration		PROGRAM ELEMENT NUMBER AND NAME 0605013M Information Technology and Development		PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.247	0.000	
RDT&E Articles Qty					
MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) starting in FY10, MCRISS will expand Joint Personnel Adjudication System (JPAS)/ Office of Personnel Management (OPM) for electronic submission of SF-86 security forms to improve submission success. The development of the interface with JPAS will enable Military Entrance Processing Stations (MEPS) to begin clearance work so that students who require clearances do not have to wait at schools for their clearances to be approved.					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	
Accomplishment/Effort Subtotal Cost	5.085	5.743	2.613	0.000	
RDT&E Articles Qty					
TOTAL FORCE STRUCTURE MANAGEMENT SYSTEM (TFSMS)TOTAL FORCE STRUCTURE MANAGEMENT SYSTEM (TFSMS), TFSMS will develop and deploy a significant software release which will change how the Marine Corps coordinates and tracks deployed forces/equipment as well as significant improvements in managing large-scale organizational changes. TFSMS development also includes the initial development and fielding of the Global Force Management Data Initiative Initial Operational Capability. Future funding will be used for completion of TFSMS Block 1 functionality including Integration of Operating Forces' (OPFOR) local purchase item process to increase effectiveness of life-cycle sustainment planning and migration to Programs of Record; creation of associations between force structure and equipment to identify the equipment requirements and capabilities required for each Marine Corps billet; development of Block 1 Transactional (Super User) Web-based Training to support attainment of Full Operational Capability and continued development of Global Force Management functionality and capability and development of TF21457SMS Block 2. The TFSMS Increment II Milestone 'B' decision will occur in Sep 09. Following a successful milestone decision, a competitive award for the Increment II Systems Integrator will occur in the 1st Qtr of FY10. Increment II development will begin in FY10.					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.395	0.000	
RDT&E Articles Qty					
SECURE OPERATIONAL NETWORK INFRASTRUCTURE CAPABILITY (SONIC)FY10 will support integration and testing in order to upgrade, add new capabilities to the network, and baseline performance parameters.					
(U) Total \$	27.103	30.156	9.868	0.000	
(U) C. OTHER PROGRAM FUNDING SUMMARY:					
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
PMC BLI 463500 COMM & ELEC INFRA SPT: DMS	8.611	0.000	0.461	0.064	0.525
PMC BLI 461700 COMBAT SPT SYS: MOS	1.248	0.767	0.841	0.000	0.841
PMC BLI 463000 COMMON COMPUTER RES: MCEITS	12.678	4.375	3.473	2.800	6.273
PMC BLI 461700 COMBAT SPT SYS: MPS	0.245	0.287	0.288	0.000	0.288
PMC BLI 463000 COMMON COMPUTER RES: TFSMS	2.574	0.337	0.000	0.000	0.000
PMC BLI 463000 COMMON COMPUTER RES: SI	0.000	0.000	18.250	0.000	18.250
(U) Related RDT&E: Not Applicable.					
(U) D. ACQUISITION STRATEGY:					
INSENSITIVE MUNITIONS (IM) The Marine Corps has over 300 items currently in their inventory that are not IM compliant which are addressed annually in the USMC IM Strategic Plan. Through this annual plan the USMC is required to propose, focus and execute an IM strategy to yield maximum benefit to the Marine Corps with respect to achieving a more IM compliant munitions inventory. Based on USMC IM Strategic Plan this RDT&E program will focus on addressing IM deficiencies for EFSS in FY09. The MAKE strategy is to conduct assessments of service life effects on availability and COA development to optimize asset utilization. Continue future enhancements to the Ammunition Budget Management System (ABMS). Develop decision support tools, in support of, implementing actions identified in the PM Ammunition Strategic Plan FY09.					
DEFENSE MESSAGING SYSTEM (DMS) is a Joint Acquisition Category (ACAT) 1AM program. It is Assistant Secretary Defense (ASD) Command, Control, Communication and Intelligence (C3I) - mandated. Each year JITC runs on Operational Test assessment on DMS software versions and maintenance releases. The funding supports Marine Corps Operational Test (OT) activity. Marine Corps participation is vital to ensuring the implementation of DMS is interoperable with all DoD CINCs/Services/Agencies.					
MARINE CORPS TRAINING INFORMATION SYSTEM (MCTIMS)will utilize an evolutionary strategy with spiral development methodology. MCTIMS is structured in a module format that allows for phasing of development without having to re-engineer the entire system to add significant new capability. MCTIMS utilizes a firm-fixed price contracting strategy to reduce risk to the government. MCTIMS is fully integrated systema , emphasizing code re-use between modules to reduce cost and improve program stability.					
MANPOWER OPERATIONS SYSTEMS (MOS)the systems within this portfolio follow an Evolutionary Acquisition (EA) approach: 1. Define, develop & deliver an initial or "core" capability based on mature technology. 2. "Core" capability will be incrementally improved over an extended period of time. Spiral Development Model: 1. Iterative cycles of requirements definition, design, build and evaluation. The contracting strategy across the portfolio is to utilize competitive firm-fixed price contracts.					

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA 5 System Dev & Demonstration	0605013M Information Technology and Development	C2906 Marine Corps Information Technology
MARINE CORPS ENTERPRISE INFORMATION TECHNOLOGY SERVICES (MCEITS) will be implemented using an evolutionary acquisition strategy. Two blocks of capability will be fielded with each block providing an operationally effective and suitable capability in the shortest time possible. The program will deliver an initial capability and continue integration and production of the system to provide full capability over time. The objective is to balance needs with available commercial and government solutions and resources, and to put capability into the hands of the users quickly. This strategy is supported by an Indefinite Delivery Indefinite Quantity (IDIQ) contracting vehicle which will allow the contractor to provide the full range of capabilities, services and solutions necessary to satisfy the requirements through incremental implementation of technology, processes and capabilities. Capabilities will be incrementally provided through the use of individual task orders to ensure technology and services are inserted according to the overall program goals, user requirements and program schedule. MANPOWER PLANNING SYSTEMS (MPS) the system will be developed with an open system architecture using spiral development methodology and maximize the use of Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) solutions while supporting the current legacy manpower models until the full transition to Total Force Manpower Models Re-Engineering (TFMMR). Furthermore, the redesign supports the Manpower and Reserve Affairs Human Resource Development Process (HRDP). The contracting strategy is competitive firm-fixed price. MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS) in addition to planned capability, development is strongly guided by DOD, DON, and USMC mandates. Changes in recruiting standards, policies for interoperability, security and standardization will be developed/implemented within the mandated time frame. MCRISS capitalizes on centrally located data with secure web and wireless web enabled entry. MCRISS utilizes a modular/spiral development to maintain system operability while providing continued development. Contracting strategy includes firm-fixed price contracts. TOTAL FORCE STRUCTURE MANAGEMENT SYSTEMS (TFSMS) Block 1 Capabilities Production Document (CPD) approved by the Marine Corps Requirements Oversight Council (MROC) 9 Apr 08. Block 1 development continues through FY09 with Block 1 Full Operational Capability (FOC) planned for FY10. Block 1 Super User WBT development begins in FY09 with completion in FY10. Block 2 Capabilities Development Document (CDD) final draft expected 4th Qtr FY08 with a projected Milestone B decision in 3rd/4th Qtr FY09. Block 2 development begins in FY10. Global Force Management Organizational Server Task 1 development continues after attaining Initial Operational Capability (IOC) in Sep 08. RDT&E funding required to support development efforts. SECURE OPERATIONAL NETWORK INFRASTRUCTURE CAPABILITY (SONIC) infrastructure is currently undergoing refresh under Statement of Need (SON) authority to establish an as is baseline. In FY10, SONIC will build on the baseline under anticipated ACAT designation.		

Exhibit R-3 Cost Analysis								Date: May 2009			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA 5 / System Development and Demonstration				0605013M Information Technology and Development				C2906 Marine Corps Information Technology			
Cost Categories	Contract Method & Type	Activity & Location	Total PY s Cost	FY 08 Cost	FY08 Award Date	FY 09 Cost	FY09 Award Date	FY 10 Cost	FY10 Award Date	Fy2010 OCO Cost	FY2010 OCO Award Date
MCEITS PM Task	C/FP	GD, Needham, MA		2.700	12/08	4.000	05/09	1.940	12/09		
Total Force Structure Management System - Dev	C/FP	TBD	0.840	5.165	05/08	5.757	12/08	2.650	12/09		
VAR	VAR	Various	30.544	14.650	VAR	16.966	VAR	2.341	VAR		
Subtotal Product Dev			31.384	22.515		26.723		6.931		0.000	
Remarks											
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY08 Award Date	FY 09 Cost	FY09 Award Date	FY 10 Cost	FY10 Award Date	FY2010 OCO Cost	FY2010 OCO Award Date
MCEITS RDT&E Management	C/FP	Quinetiq Stafford, VA	1.000	2.924	03/08	2.505	04/09	2.257	04/10		
VAR	VAR	Various	0.000	0.520	VAR	0.141	VAR	0.000	VAR		
Subtotal Support			1.000	3.444		2.646		2.257		0.000	
Remarks											
Cost Categories	Contract Method & Type	Activity & Location	Total PY s Cost	FY 08 Cost	FY08 Award Date	FY 09 Cost	FY09 Award Date	FY 10 Cost	FY10 Award Date	FY2010 OCO Cost	FY2010 OCO Award Date
VAR	VAR	Various	1.900	1.144	VAR	0.787	VAR	0.680	VAR		
Subtotal T&E			1.900	1.144		0.787		0.680		0.000	
Remarks:											
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY08 Award Date	FY 09 Cost	FY09 Award Date	FY 10 Cost	FY10 Award Date	Fy2010 OCO Cost	FY2010 OCO Award Date
Subtotal Management			0.000	0.000		0.000		0.000		0.000	
Remarks:											
Total Cost			34.284	27.103		30.156		9.868		0.000	

Exhibit R-4/4a, RDT&E Program Schedule Profile/Detail

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA 5 / System Development and Demonstration

0605013M Information Technology and Development

C2906 Marine Corps Information Technology

MCEITS

Marine Corps Enterprise Information Technology Services (MCEITS) Planning Schedule

Activity/FY	2008				2009				2010			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones	Concept & Technology Dev.								Prod			
			◇ MS B							MS C Increment I	◇	◇
			◇ Spiral 0								IOC Increment I	
Contract												
Technical Reviews												
			SRR/SFR									
			◇									
Testing												
Requirement Documents												
System Engineering												
Information Assurance												
Other Activities												

Program Funding Summary

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>	<u>FY 2010 Total</u>
(APPN, BLI #, NOMEN)					
(U) RDT&E,N	6.992	17.528	5.529	0.000	5.529
(U) PMC, 463000 MCEITS	12.678	4.375	3.473	2.800	6.273

Exhibit R-4/4a, RDT&E Program Schedule Profile/Detail				May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5 / System Development and Demonstration		PROGRAM ELEMENT NUMBER AND NAME 0605013M Information Technology and Development			PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology		
MCEITS	FY 2008	FY 2009	FY 2010				
Pre-Concept Decision							
Milestone A							
Increment 1 Milestone B	3Q						
Capability Development Document	2Q						
Development Test (DT)-1	4Q						
Development Test (DT)-2B		2Q					
Development Test (DT)-B3		4Q					
Development Test (DT)-B4/OA			2Q				
Capability Production Document		4Q					
Increment 1 Milestone C			3Q				
Increment 1 Operational Test (OT)			4Q				
Increment 1 Initial Operational Capability (IOC)			4Q				

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N /BA-5 System Dev & Demonstration	0605013M Information Technology and Development				C9999 CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY2010 OCO	FY 2010 Total			
Project Cost	0.965	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 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost	0.965	0.000	0.000	0.000				
RDT&E Articles Qty								
C9A59A - OBLIQUE IMAGING & SOFTWARE TOOL: Provides imagery of all Marine Corps installations from oblique angles (40-degree angle) covering all four cardinal directions. The imagery is tied into systems that support emergency and first responders (fire, police, and security personnel) as part of their homeland defense and force protection mission. Use of the oblique imagery integrated within the existing GEOFidelis program also improve operational efficiencies, reduce expenses, and better manage installation growth via improved decision making processes through the use of visual data.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000				
RDT&E Articles Qty								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000				
RDT&E Articles Qty								
(U) Total \$	0.965	0.000	0.000	0.000	0.000			
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
(U) Related RDT&E: Not Applicable.								
(U) D. ACQUISITION STRATEGY: Not Applicable.								

CLASSIFICATION:			UNCLASSIFIED				
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5			R-1 ITEM NOMENCLATURE 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	71.747	91.643	69.026				
2901 / AAUSN IT	2.767	3.993	0.976				
2903 / NAVAIR IT	0.679	0.705	0.775				
2904 / NAVSEA IT	5.137	22.903	26.242				
2905 / BUPERS IT	0.000	6.482	0.000				
2907 / RESFOR IT	0.567	3.491	3.500				
3026 / ERP Convergence	35.877	32.698	17.154				
3034 / DIMHRS	0.000	0.000	18.474				
3167 / Joint Technical Data Integration (JTDI)	1.147	1.599	1.475				
3185 / Joint Airlift Information System (JALIS)	0.404	0.425	0.430				
9999 / CONGRESSIONAL ADDS	25.169	19.347	0.000				

A. MISSION DESCRIPTION:

2901 AAUSN IT The NCIS Modernization Initiative includes multiple projects with RDT&E requirements : Multiple Threat Alert Center (MTAC), Data Modernization & Analytical Tools, and Knowledge Network (K-Net).

Multiple Threat Alert Center (MTAC): The Post-Cole Secretary of the Navy Anti-terrorism/Force Protection Task Force identified the need for NCIS to enhance the Multiple Threat Alert Center (MTAC). The MTAC provides key anti-terrorism/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 those forward deployed agents and to task them to respond to emerging threats. Funding is required for equipment and contractor support to 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.

Knowledge Network (K-Net): K-Net is a Data Modernization & analytical tool being developed and soon deployed that greatly enhances NCIS's technological arsenal. K-Net implements an integrated NCIS approach for identifying, capturing, evaluating, retrieving, and sharing all of NCIS's knowledge and expertise. To that end, K-Net is a knowledge management system that improves NCIS's ability to search, analyze, fuse, and distribute both national intelligence and law enforcement information. The envisioned end state for K-Net is a secure, intuitive, web environment that is the one stop shop where applications, data, and tools are easily accessible to all of NCIS users to effectively and securely fulfill their mission regardless of when and where they operate.

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	
NCIS RECORDS DIGITALIZATION: The Electronic Records Management System (ERMAS) is an on-going contractor supported effort to develop a system that will digitalize all of the NCIS criminal and intelligence investigative records. BOARD TRACKING SYSTEM (BOATS): replaces three independent database systems into a single application. The systems are the Detainee Tracking System (DTS) which has two versions, one located in Arlington, VA and one at GITMO, Cuba with slightly different functions; as well as the Tracking Systems (TS) which is employed by GITMO. BOATS consolidates three systems into a single robust database management system and provides additional capabilities and timely data integration. DEPARTMENT OF THE NAVY CRIMINAL JUSTICE INFORMATION SYSTEM (DONCJIS): The Naval Criminal Investigative Service (NCIS) is the Executive Agent (EA) for the Department of the Navy Criminal Justice Information System (DONCJIS) formerly (CLEOC). This system provides a cradle to grave criminal justice and law enforcement information system. THE SECRETARY OF THE NAVY'S COUNCIL OF REVIEW BOARDS (SCORB): A modular, integrated, web-based system designed to retrieve, process manage and track cases, replacing four existing client-server databases operating on a non-NMCI compliant platform for the Combat Related Special Compensation Board, Physical Evaluation Board, Naval Clemency and Parole Board, and Naval Discharge Board in Phase One of this project. THE DEPARTMENT OF THE NAVY CHIEF INFORMATION OFFICE (DON CIO): is chartered to advise the Secretary of the Navy on Information Management/ Information Technology (IM/IT) matters as well as discharge the functions with the Clinger-Cohen Act of 1996. The Clinger-Cohen Act revised government IM/IT acquisition and procurement policies and procedures for Information Technology (IT). The Chief Information Officer is charged with providing leadership, guidance and support to the Department of the Navy (DON) to ensure enabling the DON mission through effective use of IT. The DON CIO initiated an initiative to develop a Self Assessment Tool to be used by installation commanders to determine vulnerabilities associated with their critical infrastructure. The tool will be provided to commands to assist them in determining vulnerabilities to their infrastructure. Once vulnerabilities are identified, the tool will provide base commanders with the ability to prioritize those vulnerabilities, enabling them to better determine appropriate resource allocations to make corrective actions. DITPR identifies mission critical, mission essential and mission support IT assets and their contingency plan status, in support of DON CIO Critical Infrastructure efforts and meeting critical IT reporting requirements levied by Congress. DITPR is a critical DOD authoritative database tool used for tracking Component (MILDEP) systems, programs and infrastructure to include NSS systems and programs. DITPR is a Portfolio Management decision making tool used to make better resource allocations with in the Department. 2903 NAVAIR IT - CMIS - 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 - This program includes the funding for Information Technology (IT) support at NAVSEA HQ and the technical refresh of Naval Shipyard maintenance, repair and overhaul (MRO) production tools. This includes modifications/enhancements to Shipyard IT systems, such as Advanced Industrial Management (AIM), AIM Express (Xp), Project		

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	R-1 ITEM NOMENCLATURE 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	
Scheduling and Sequencing (PSS), Performance Measurement & Control (PMC), Navy Workload and Performance System (NWPS) and NAVSEA Forecaster (NSFC). This program also supports development and modernization of Shipyard HQ tools and other new start technologies/systems. The goal of this program is to provide modernization, migration, and consolidation of obsolete legacy systems to the next generation of centrally hosted tools supporting MRO of the fleet force assets. This funding also supports development and modification to existing software, hardware, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure.		
2905 BUPERS IT - The John Warner NDAA FY 2007, Pub. I, No. 109-364, directed the SECNAV to prepare a report on the Marine Corp Total Force System (MCTFS), including an analysis of alternatives to MCTFS, which compared the costs of deploying and operating MCTFS within the Navy and the cost of including Navy in the Defense Integrated Military Human Resource System (DIMHRS) development. Based on the review, the Deputy Secretary of Defense concluded that it would be in the best interest of the DOD and the DON to join the other services in migrating to DIMHRS. In Jan 09, DEPSECDEF provided additional guidance to the Services for migration to a DIMHRS core, that allowed more flexibility on the technical approach. The Program Executive Office Enterprise Information Systems (PEO EIS) received funding in FY09 to identify DON requirements, provide a business case for transition options, establish a prototype process integrated with data management and data services tools to support bottom up data governance and data discovery efforts to inform authoritative data store development for future information technology system migration, and provide program management to support the Navy transition to a DIMHRS core product, NMCTFS, or future pay and personnel solutions.		
2907 RESFOR IT - Sea Warrior (SW): Sea Warrior includes the Navy manpower management, career management, personnel distribution, recruiting and accessions, training and education information technology systems. The products produced by the Sea Warrior Program Management Office support the Navy mission by ensuring the best available fit of personnel to work. Funding is for (1) implementation of deferred or new engineering change proposals executed as block updates (CMS/ID MU1A-1, MU1A-2, MU1B, MU1B-2, MU1B-3 and MU1B-4) with new functionality; and (2) design and development of an enterprise training management and delivery capability to replace the current Navy elearning delivery platform.		
3026 ERP Convergence: The Navy Enterprise Resource Planning solution is an integrated business management system that modernizes and standardizes Navy's business processes. Navy Enterprise Resource Planning utilizes best commercial practices (SAP software) to provide real-time information exchange, unprecedented financial and asset visibility, and improved reporting and decision-making capabilities across key acquisition, financial, and logistics operations.		
Navy Enterprise Resource Planning is the tool chosen to meet Congressional mandates to establish and maintain federal financially compliant management systems, federal accounting standards, and US Government General Ledger procedures at the transaction level. The Navy Enterprise Resource Planning foundation to achieve enterprise-wide business transformation is accomplished through two releases; the Financial/Acquisition Solution (Release 1.0) and the Single Supply Solution (Release 1.1). In October 2008, ASN FM&C designated Navy Enterprise Resource Planning the Navy's Financial System of Record. The current Program of Record is scheduled to deploy to approximately 64,000 users. Approximately 53% of the Navy's TOA will be managed by Navy Enterprise Resource Planning at Full Operational Capability (FOC) in 2013. Deployment of Release 1.0 to Naval Aviation Systems Command (NAVAIR) and to Naval Supply Systems Command (NAVSUP) occurred in October 2007 and October 2008, respectively, as planned.		

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RD TEN/BA 5	0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	
Changes from the FY 2009 President's Budget Submission include a reassessment of the Navy Enterprise Resource Planning Release 1.2 (Intermediate Level Maintenance Solution) in response to a Base Realignment and Closure (BRAC) initiative which eliminated the need for an Enterprise Resource Planning requirement at the I-level. Current legacy systems will continue to satisfy I-level requirements. Additional changes include a seven month delay in NAVSUP's Release 1.1 Single Supply Solution go-live and implementation of risk mitigation strategy by setting all Release 1.0 deployments to begin 1 October. Specific schedule changes include: - deployment of Release 1.0 to Space and Naval Warfare Command is scheduled for October 2009 - deployment of Release 1.1 to Naval Supply Systems Command is scheduled for February 2010 The Navy has committed to take the Navy Enterprise Resource Planning; Business Backbone; across the Enterprise which will provide unprecedented management visibility. Expanding the Business Backbone will increase the percentage of Navy TOA managed within the system from 53% to 100% and will increase the number of users from 64,000 to 143,000. A deployment schedule is in the process of development. 3034 Future Pay and Personnel System - FY 2010 funding supports Future Pay and Personnel System (FPPS) design, development and modernization efforts. Provides development, integration, and support of future pay and personnel system capabilities, including the modernization and consolidation of existing pay and personnel systems into the DIMHRS core and remaining Navy-unique development and modernization efforts for a fully integrated pay and personnel solution. Includes (1) development of specifications and design of solutions to integrate with DIMHRS core and/or other selected pay and personnel products, (2) design and development of solutions to provide remaining Navy-unique capabilities defined by a Navy gap analysis; (3) staffing of the Navy program office, development and modernization support from the functional organization, (4) development and modernization of remaining legacy system interfaces; (5) development of the authoritative data store and interfaces with the DIMHRS core and other pay and personnel products; and Operational Test and Evaluation of the selected future pay and personnel solution. 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		

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	
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 work hours 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. Portable Electronic Maintenance Aids (PEMA): Funding supports the evaluation, testing and integration to develop PEMA Commercial Off The Shelf (COTS) solution for portable device deployments across the Naval Aviation Enterprise (NAE). PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Integrated Electronic Technical Manuals (IETMs), IP based data uploads, BIT data downloads, automated diagnostics, and planeside NALCOMIS). PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment (AME) implemented for weapon systems. 3185 Joint Air Logistics Information System (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. 9406 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 from 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. 9999 Congressional Adds		

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	69.053	72.497	66.388
FY10 President's Budget	71.747	91.643	69.026
Total Adjustments	2.694	19.146	2.638
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	19.151	0.000
SBIR/STTR/FTT Assessment	-1.005	0.000	0.000
Program Adjustments	3.699	0.005	2.970
Rate/Misc Adjustments	0.000	0.000	-0.332
Total	2.694	19.146	2.638

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2901/AAUSN IT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	2.767	3.993	0.976				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: NCIS MODERNIZATION INITIATIVE (includes multiple projects with RDT&E requirements: Multiple Threat Alert Center (MTAC), Data Modernization & Analytical Tools, and Knowledge Network (K-Net)): 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 anti-terrorism/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 to 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-Overseas Contingency Operations 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. KNOWLEDGE NETWORK (K-Net): K-Net is a Data Modernization & analytical tool being developed and soon deployed that greatly enhances NCIS's technological arsenal. K-Net implements an integrated NCIS approach for identifying, capturing, evaluating, retrieving, and sharing all of NCIS's knowledge and expertise. To that end, K-Net is a knowledge management system that improves NCIS's ability to search, analyze, fuse, and distribute both national intelligence and law enforcement information. The envisioned end state for K-Net is a secure, intuitive, web environment that is the one stop shop where applications, data, and tools are easily accessible to all of NCIS users to effectively and securely fulfill their mission regardless of when and where they operate. NCIS RECORDS DIGITALIZATION: The Records Management Information System (RMIS) is an on-going contractor supported effort to develop a system that will digitalize all of the NCIS criminal and counterintelligence investigative records. DEPARTMENT OF THE NAVY CRIMINAL JUSTICE INFORMATION SYSTEM (DONCJIS): The Naval Criminal Investigative Service (NCIS) is the Executive Agent (EA) for the Department of the Navy Criminal Justice Information System (DONCJIS) formerly (CLEOC). This system provides a cradle to grave criminal justice and law enforcement information system.							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2901/AAUSN IT
BOARD TRACKING SYSTEM (BOATS): Replaces three independent database systems into a single application. The systems are the Detainee Tracking System (DTS) which has two versions, one located in Arlington, VA and one at GITMO, Cuba with slightly different functions; as well as the Tracking Systems (TS) which is employed by GITMO. BOATS consolidates three systems into a single robust database management system and provides additional capabilities and timely data integration. THE SECRETARY OF THE NAVY'S COUNCIL OF REVIEW BOARDS (SCORB): A modular, integrated, web-based system designed to retrieve, process manage and track cases, replacing four existing client-server databases operating on a non-NMCI compliant platform for the Combat Related Special Compensation Board, Physical Evaluation Board, Naval Clemency and Parole Board, and Naval Discharge Board in Phase One of this project.		

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2901/AAUSN IT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	3.194	0.000
RDT&E Articles Quantity	0	0	0
NCIS MODERNIZATION INITIATIVE (includes multiple projects with RDT&E requirements : Multiple Threat Alert Center (MTAC), Data Modernization & Analytical Tools, and Knowledge Network (K-Net): 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 anti-terrorism/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 to modify COTS software. Knowledge Network (K-Net): K-Net is a Data Modernization & analytical tool being developed and soon deployed that greatly enhances NCIS's technological arsenal. K-Net implements an integrated NCIS approach for identifying, capturing, evaluating, retrieving, and sharing all of NCIS's knowledge and expertise. To that end, K-Net is a knowledge management system that improves NCIS's ability to search, analyze, fuse, and distribute both national intelligence and law enforcement information. The envisioned end state for K-Net is a secure, intuitive, web environment that is the one stop shop where applications, data, and tools are easily accessible to all of NCIS users to effectively and securely fulfill their mission regardless of when and where they operate. 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. FY 2009 Contractor support to begin developmental efforts for next-increment capabilities in Data Modernization & Analytical Tools and K-Net.			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2901/AAUSN IT	
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.737	0.000	0.000
RDT&E Articles Quantity	0	0	0
BOARD TRACKING SYSTEM (BOATS): Replaces three independent database systems into a single application. The systems are the Detainee Tracking System (DTS) which has two versions one located in Arlington, VA and one at GITMO, Cuba with slightly different functions; as well as the Tracking Systems (TS) which is employed by GITMO. BOATS consolidates three systems into a single robust database management system and provides additional capabilities and timely data integration. FY 2008 A single robust database management system that provides additional capabilities and timely data integration.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.586	0.599	0.976
RDT&E Articles Quantity	0	0	0
DEPARTMENT OF THE NAVY CRIMINAL JUSTICE INFORMATION SYSTEM (DONCJIS): The Naval Criminal Investigative Service (NCIS) is the Executive Agent (EA) for the Department of the Navy Criminal Justice Information System (DONCJIS) formerly (CLEOC). This system provides a cradle to grave criminal justice and law enforcement information system. The system enables multiple communities within the DON to share criminal justice and law enforcement information. This system will also be used for managing investigations and storing information on the law enforcement, command, judicial and corrections response to criminal activity within the DON. Funding is required for contractor support to develop, test, train , deploy and implement this application in support of the overall NCIS Modernization effort. FY2008 Contractor Support for continued development of additional spirals/versions of DONCJIS production capabilities FY2009 Contractor Support for continued development of additional spirals/versions of DONCJIS production capabilities FY2010 Contractor Support for continued development of additional spirals/versions of DONCJIS production capabilities			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2901/AAUSN IT	
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.444	0.200	0.000
RDT&E Articles Quantity	0	0	0
THE SECRETARY OF THE NAVY'S COUNCIL OF REVIEW BOARDS (SCORB): A modular, integrated, web-based system designed to retrieve, process manage and track cases, replacing four existing client-server databases operating on a non-NMCI compliant platform for the Coumbat Related Special Compensation Board, Physical Evaluation Board, Naval Clemency and Parole Board, and Naval Discharge Board in Phase One of this project. In Phase Two of this project the database will include additional functionality to support the work of the Board for Correction of Naval Records and make the system available not only to SCORB staff but also to the public to enable applicants to apply online. THE SECRETARY OF THE NAVY'S COUNCIL OF REVIEW BOARDS (SCORB): A modular, integrated, web-based system designed to retrieve, process manage and track cases, replacing four existing client-server databases operating on a non-NMCI compliant platform for the Coumbat Related Special Compensation Board, Physical Evaluation Board, Naval Clemency and Parole Board, and Naval Discharge Board in Phase One of this project. In Phase Two of this project the database will include additional functionality to support the work of the Board for Correction of Naval Records and make the system available not only to SCORB staff but also to the public to enable applicants to apply online. FY 2008 Contractor support, hardware and software FY 2009 Contractor support, hardware and software C. OTHER PROGRAM FUNDING SUMMARY: D. ACQUISITION STRATEGY: E. MAJOR PERFORMERS:			

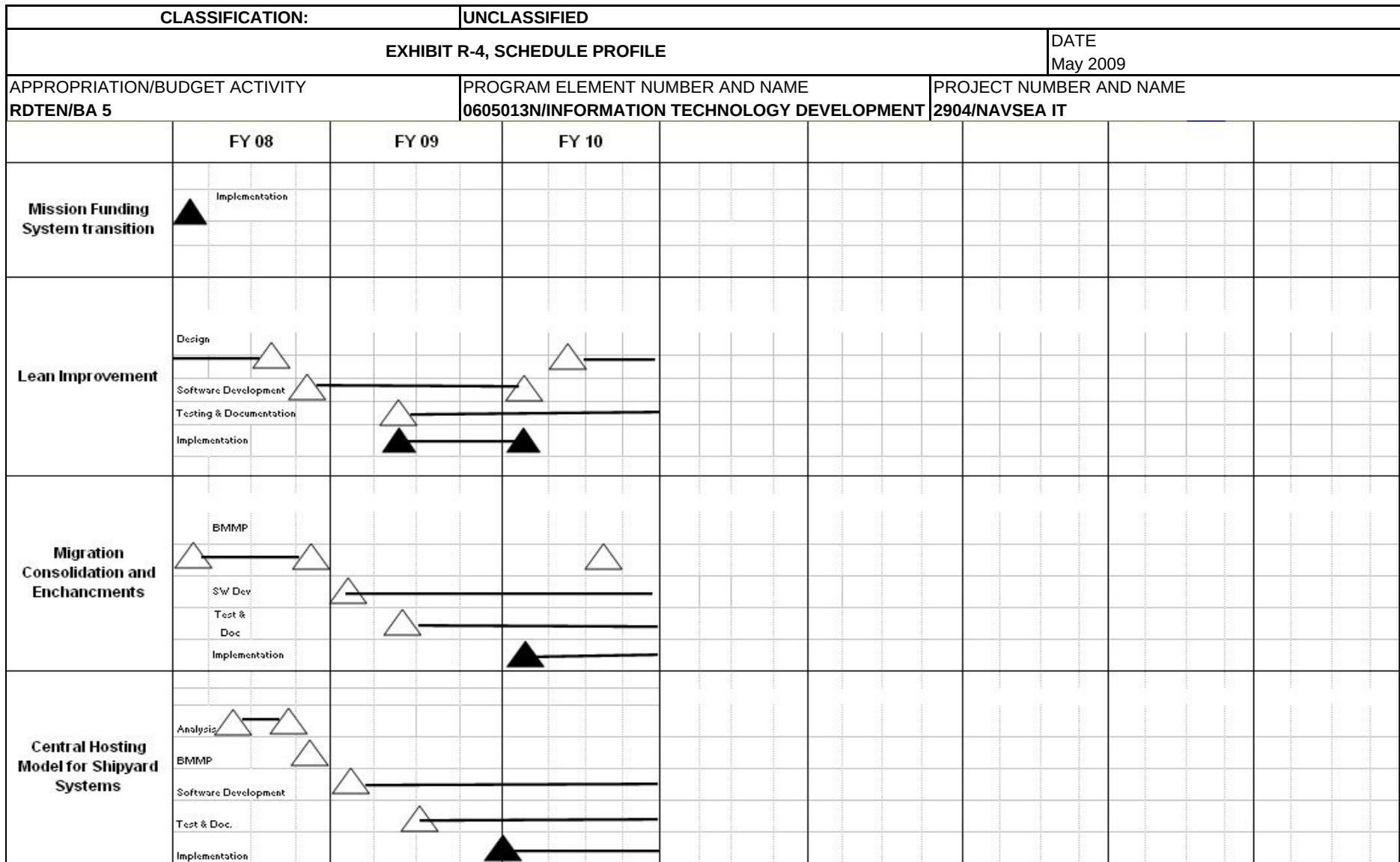
CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2903/NAVAIR IT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.679	0.705	0.775				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CMIS - 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:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2903/NAVAIR IT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.679	0.705	0.775
RDT&E Articles Quantity	0	0	0
CMIS - 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. C. OTHER PROGRAM FUNDING SUMMARY: CMIS - Not Applicable D. ACQUISITION STRATEGY: CMIS - 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 evolving commercial standards. Various contractors using competitively awarded contracts have supported the program. Currently, Intergraph Corporation is the CMIS integration contractor selected through a GSA contract. E. MAJOR PERFORMERS:			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2904/NAVSEA IT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	5.137	22.903	26.242				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program includes the funding for Information Technology (IT) support at NAVSEA HQ and the technical refresh of Naval Shipyard and Regional Maintenance Center (RMC) maintenance, repair and overhaul (MRO) production tools. This includes modifications/enhancements to Shipyard IT systems, including Advanced Industrial Management (AIM), AIM Express (Xp), Project Scheduling and Sequencing (PSS), Performance Measurement & Control (PMC), Navy Workload and Performance System (NWPS) and NAVSEA Forecaster (NSFC). This program also supports development and modernization of Shipyard HQ tools and other new start technologies/systems. The goal of this program is to provide modernization, migration, and consolidation of obsolete legacy systems to the next generation of centrally hosted tools supporting MRO of the fleet force assets. This project will allow Navy to realign functionality, consolidate and reduce systems and applications, and re-platform operations to facilitate a centrally hosted, net-centric maintenance solution suite which supports the CARS initiative. This funding also supports development and modification to existing software, hardware, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2904/NAVSEA IT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.137	22.903	26.242
RD T&E Articles Quantity	0	0	0
2904 This program includes the funding for Information Technology (IT) support at NAVSEA HQ and the technical refresh of Naval Shipyard and Regional Maintenance Center (RMC) maintenance, repair and overhaul (MRO) production tools. This project will allow Navy to realign functionality, consolidate systems and applications, and re-platform operations to facilitate a centrally hosted, net-centric maintenance solution suite. C. OTHER PROGRAM FUNDING SUMMARY: D. ACQUISITION STRATEGY: E. MAJOR PERFORMERS:			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 2904/NAVSEA IT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Software Development	CPFF	NAVSEA - WNY, DC	5.137	0.000		22.903	TBD	26.242	TBD			
Software Development	WR	FISC Philly	5.000	0.000		0.000		0.000				
Subtotal Support Costs			10.137	0.000		22.903		26.242				
Remarks: The NAVSEA 04 Program Office for Information Technology plans to execute all contract awards through the NAVSEA SEAPORT vehicle starting in FY 09.												
Total Cost			10.137	0.000		22.903		26.242				



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2904/NAVSEA IT			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Shipyard Systems Transition into Mission Funding								
Software development								
IT testing and documentation								
Implementation		Q1						
Lean Systems Improvement								
Analysis and design		Q1-Q3		Q2-Q4				
Software development		Q4	Q1-Q4	Q1				
Testing and documentation			Q2-Q4	Q1-Q4				
Implementation			Q2-Q4	Q1				
Migratation Consolidation and Enhancements								
Analysis								
BMMP Approval		Q1-Q4		Q3				
Software Development			Q1-Q4	Q1-Q4				
Testing and Documentation			Q2-Q4	Q1-Q4				
Implementation				Q1-Q4				
Central Hosting Model for Shipyard Systems								
Analysis		Q2-Q3						
BMMP Approval		Q4						
Software Development			Q1-Q4	Q1-Q4				
Testing and Documentation			Q3-Q4	Q1-Q4				
Implementation				Q1-Q4				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2905/BUPERS IT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	6.482	0.000				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) FY09 Perform a business case analysis study based on the Courses of Action (COA) from the January 09 DIMHRS Workshop conducted by DBSMC - The purpose of the BCA is to provide a risk mitigation strategy for the Navy in the event the DIMHRS Enterprise Program cannot deliver a single Future Pay & Personnel capability for the Department. The study will be a detailed alternatives analysis that will consider the DIMHRS core, NMCTFS, along with other COAs. (U) FY09 Establish a prototype/test bed authoritative data source (ADS) process and toolset for the Manpower, Personnel, Training and Education (MPT&E) Domain - This will be a phased effort including: requirements definition and concept refinement, integration of automated tools, and execution of the integrated processes and tools with test data. The ADS effort provides a technical foundation to inform future IT dev/mod efforts on how best to define, analyze, cleanse, and standardize the core data required to develop authoritative data stores to support Business Enterprise Priorities (BEPS) of the DOD Enterprise Architecture. (U) FY09 Provide programmatic oversight for the business case analysis, information management framework for ADS efforts and engineering, requirements, cost analysis/engineering support - These are the Program Office activities required to ensure acquisition discipline and rigor are applied in order to achieve cost, performance, and schedule objectives for the Navy's future pay and personnel solution implementation effort.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2905/BUPERS IT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	6.482	0.000
RD T&E Articles Quantity	0	0	0
(U) FY09 - Begin business case analysis			
(U) FY09 - Begin prototype information management framework and Authoritative Data Source prototype/test bed			
C. OTHER PROGRAM FUNDING SUMMARY: 0605013N/3034			
D. ACQUISITION STRATEGY: Contracting will be accomplished using existing contract vehicles within Team SPAWAR and use of Federally Funded Research and Development Centers (FFRDCs)			
E. MAJOR PERFORMERS:			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2907/RESFOR IT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.567	3.491	3.500				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 2907 RESFOR IT - Sea Warrior (SW): Sea Warrior includes the Navy manpower management, career management, personnel distribution, recruiting and accessions, training and education information technology systems. The products produced by the Sea Warrior Program Management Office support the Navy mission by ensuring the best available fit of personnel to work. Funding is for (1) implementation of deferred or new engineering change proposals executed as block updates (CMS/ID MU1B, MU1B-2, MU1B-3 and MU1B-4) with new functionality; (2) design and development of an enterprise training management and delivery capability to replace the current Navy elearning delivery platform, and (3) interface and design decomposition work on legacy manpower and personnel systems.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 2907/RESFOR IT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Plans/Effort/Subtotal Cost	0.567	2.450	1.000
RDT&E Articles Quantity	1	2	2
SW CMS/ID Development/Modernization FY08: Completed CMS/ID MU1A-2 release ashore and afloat.			
(U) FY09 - Career Management System/Interactive Detailing, complete block updates for MU1B-1/MU1B-2. These upgrades include Sailors applying for their own applications and GSA jobs.			
(U) FY10 - Career Management System/Interactive Detailing, complete block updates for MU1B-3, MU1B-4. These upgrades include active and reserve force capability integration.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.700	2.000
RDT&E Articles Quantity	0	0	1
SW ETMDS (U) FY09 - Enterprise Training Management and Delivery System to replace the Learning Management System - Distributed Learning (LMS-DL). Initial contract award and system design will begin in FY09.			
(U) FY10 - Enterprise Training Management and Delivery System to replace the Learning Management System - Distributed Learning (LMS-DL). Complete system design and development and begin testing.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.341	0.500
RDT&E Articles Quantity	0	1	1
Legacy IT Systems Interface/Design Decomposition (U) FY09 - Complete decomposition of interface and design specifications for NAVACTSTAT. (U) FY10 - Begin decomposition of interface and design specifications for Officer Assignment Information System.			

CLASSIFICATION:	UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT				PROJECT NUMBER AND NAME 2907/RESFOR IT			
C. OTHER PROGRAM FUNDING SUMMARY:								
Line Item No. and Name	FY 2008	FY 2009	FY 2010					Total Cost
O&MN - AGSAG 4A4M	33.371	30.423	29.053					
O&MN - AGSAG 5T6M	0.000	6.671	6.847					
O&MN - AGSAG 3B1K	2.247	2.165	3.499					
O&MN - AGSAG 3B4K	15.425	16.482	14.605					
D. ACQUISITION STRATEGY: Sea Warrior PMO will follow an incremental development approach to develop future capability. Each increment will be established and approved by OPNAV. Each increment will follow an annual cycle with one major release within the year. SW CMS/ID Development Modernization - existing Service System Center New Orleans (SSC NOLA) Systems Engineering and Technical Assistance (SETA) contract will be used for this effort. SW ETMDS - this will be a competitive contract either under SeaPort or via the open market. SW Modifications to Legacy IT Systems to implement Billet Based Distribution - existing Service System Center New Orleans (SSC NOLA) Systems Engineering and Technical Assistance (SETA) contract will be used for this effort.								
E. MAJOR PERFORMERS:								

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 2907/RESFOR IT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Plans/System Decomposition		Various/New Orleans, LA	1.027	0.000		0.000		0.000				
Systems Engineering		Various/New Orleans, La	0.000	0.000		0.200	NOV-08	0.225	NOV-09			
Licenses		Various/New Orleans, La	0.000	0.000		0.082	NOV-08	0.095	NOV-09			
Systems Engineering		Various/New Orleans, La	0.567	0.000		0.350	JAN-09	0.100	JAN-10			
Subtotal Product Development			1.594	0.000		0.632		0.420				
Remarks:												
Development Support	CPFF	Various/New Orleans, LA	0.000	0.000		0.226	NOV-08	0.071	NOV-09			
Software Development	CPFF	Various/New Orleans, LA	0.000	0.000		1.174	NOV-08	0.368	NOV-09			
Training Development	CPFF	Various/New Orleans, LA	0.000	0.000		0.282	NOV-08	0.089	NOV-09			
Integrated Logistics Support	CPFF	Various/New Orleans, LA	0.000	0.000		0.226	NOV-08	0.071	NOV-09			
Configuration Management	CPFF	Various/New Orleans, LA	0.000	0.000		0.090	NOV-08	0.028	NOV-09			
Technical Data	CPFF	Various/New Orleans, LA	0.000	0.000		0.170	NOV-08	0.053	NOV-09			
GFE	CPFF	Various/New Orleans, LA	0.000	0.000		0.000		0.000				
Software Development	TBD	TBD	0.000	0.000		0.000		0.813	NOV-09			
Training Development			0.000	0.000		0.000		0.195	NOV-09			
Integrated Logistics Support			0.000	0.000		0.000		0.156	NOV-09			
Configuration Management			0.000	0.000		0.000		0.063	NOV-09			
Technical Data			0.000	0.000		0.000		0.117	NOV-09			
Software Development		TBD	0.000	0.000		0.000		0.400	JAN-10			
Interface Development		Various	0.200	0.000		0.000		0.000				
Subtotal Support Costs			0.200	0.000		2.168		2.424				
Remarks:												
Begin Acquisition, final design			0.420	0.000		0.000		0.000				
Subtotal Test and Evaluation			0.420	0.000		0.000		0.000				
Remarks:												
Development Support			0.000	0.000		0.000		0.156	NOV-09			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 2907/RESFOR IT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Systems Engineering	TBD	TBD	0.000	0.000		0.691	FEB-09	0.500	NOV-09			
Subtotal Management Services			0.000	0.000		0.691		0.656				
Remarks:												
			0.000	0.000		0.000		0.000				
Total Cost			2.214	0.000		3.491		3.500				

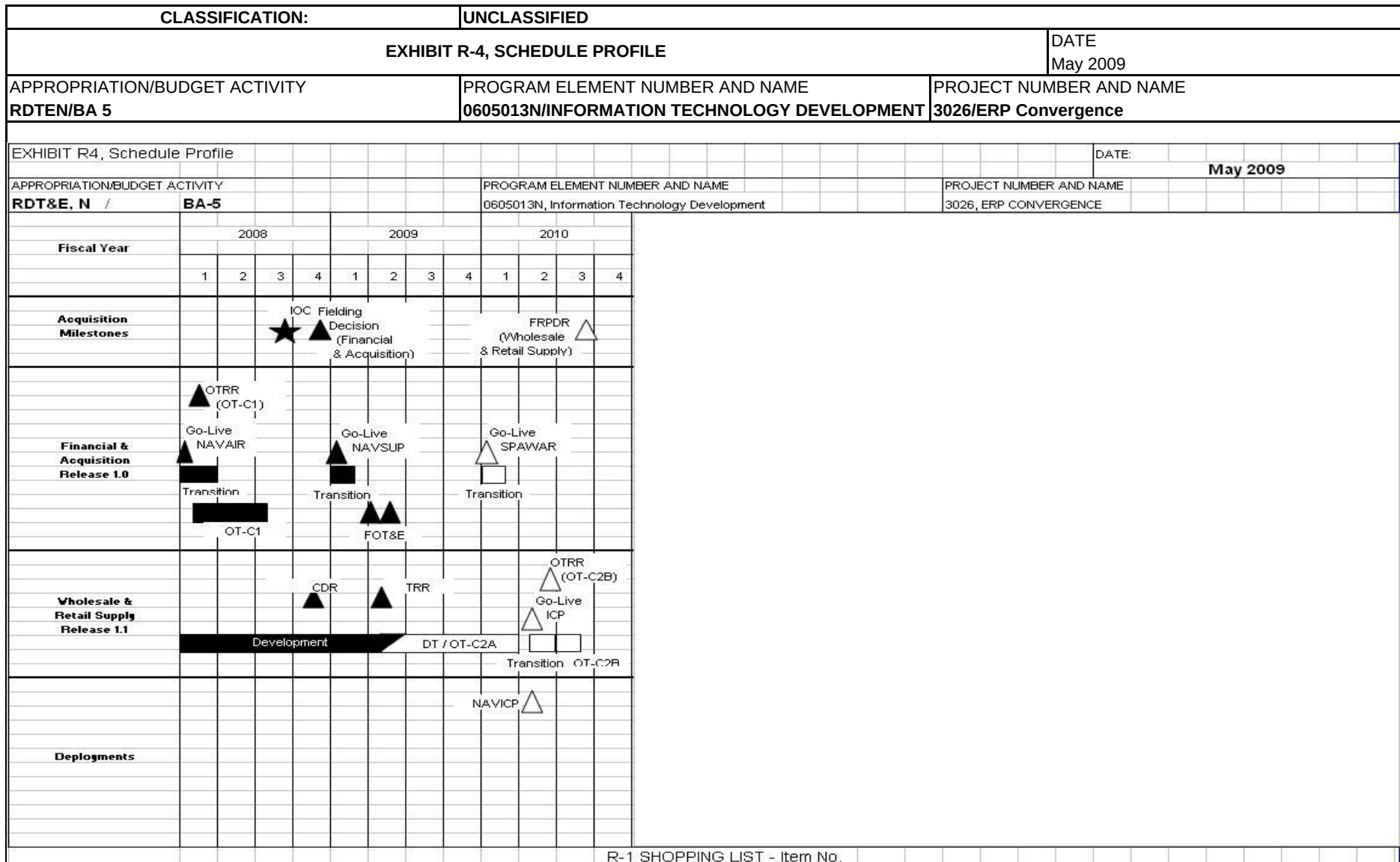
CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT						PROJECT NUMBER AND NAME 2907/RESFOR IT					
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones	Spiral 1										Increment 1		
System Requirements Review													
System Design Development													
Design Review													
Test Readiness Review													
Test & Evaluation Milestones													
Developmental Testing													
Operational Testing													
Production Milestones													
IOC													

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 2907/RESFOR IT		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Sea Warrior Spiral 1System Design Development		Q1		Q1			
ETMDS Systems Requirements Review				Q1			
ETMDS Preliminary Design Review				Q2			
ETMDS Critical Design Review				Q3			
ETMDS Test Readiness Review				Q4			
Sea Warrior Spiral 1System Requirements Review			Q3				
Sea Warrior Spiral 1 IOC			Q3				
Sea Warrior Spiral 1System Design Review		Q2		Q3			
Sea Warrior Spiral 1System Test Readiness Review		Q3					
Sea Warrior Spiral 1System Developmental Testing		Q3					
Sea Warrior Spiral 1System Operational Testing			Q1				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 3026/ERP Convergence		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	35.877	32.698	17.154				
RD T&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Enterprise Resource Planning solution is an integrated business management system that modernizes and standardizes Navy's business processes. Navy Enterprise Resource Planning utilizes best commercial practices (SAP software) to provide real-time information exchange, unprecedented financial and asset visibility, and improved reporting and decision-making capabilities across key acquisition, financial, and logistics operations. Navy Enterprise Resource Planning is the tool chosen to meet Congressional mandates to establish and maintain federal financially compliant management systems, federal accounting standards, and US Government General Ledger procedures at the transaction level. The Navy Enterprise Resource Planning foundation to achieve enterprise-wide business transformation is accomplished through two releases; the Financial/Acquisition Solution (Release 1.0) and the Single Supply Solution (Release 1.1). In October 2008, ASN FM&C designated Navy Enterprise Resource Planning the Navy's Financial System of Record. The current Program of Record is scheduled to deploy to approximately 64,000 users. Approximately 53% of the Navy's TOA will be managed by Navy Enterprise Resource Planning at Full Operational Capability (FOC) in 2013. Deployment of Release 1.0 to Naval Aviation Systems Command (NAVAIR) and to Naval Supply Systems Command (NAVSUP) occurred in October 2007 and October 2008, respectively, as planned. The Navy has committed to take the Navy Enterprise Resource Planning ;Business Backbone; across the Enterprise which will provide unprecedented management visibility. Expanding the Business Backbone will increase the percentage of Navy TOA managed within the system from 53% to 100% and will increase the number of users from 64,000 to 143,000. A deployment schedule is in the process of development.							

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 3026/ERP Convergence					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Primary Development	SS/CPAF	Bearing Pt, Lexington Park, MD	143.327	0.000		0.000		0.000				
Award Fees	SS/CPAF	Bearing Pt, Lexington Park, MD	4.740	0.000		0.000		0.000				
Primary Development	C/CPAF	IBM, Annapolis, MD	33.649	0.000		22.079	NOV-08	0.000				
Award Fees	C/CPAF	IBM, Annapolis, MD	0.461	0.000		1.927	SEP-09	0.000				
Primary Development	C/CPAF	IBM, Annapolis, MD	0.000	0.000		0.000		6.903	NOV-09			
Primary Development	TBD	TBD	0.000	0.000		0.000		1.200				
Subtotal Product Development			182.177	0.000		24.006		8.103				
Remarks: Remarks: Prior Years and FY 09: To date, approximately 90% of Award Fees have been awarded to Bearing Point, IBM, and GDIT. Other contracts are not yet eligible for Award Fees. FY 10: To date, no Award Fees have been awarded; contracts are not yet eligible for Award Fees.												
Software Development	C/CPAF	GDIT, Fairfax, VA	2.597	0.000		0.638	OCT-08	0.596	OCT-09			
Award Fees	C/CPAF	GDIT, Fairfax, VA	0.471	0.000		0.000		0.000				
Software Development	C/CPAF	IBM, Annapolis MD	13.123	0.000		0.592	OCT-08	0.298	OCT-09			
Award Fees	C/CPAF	IBM, Annapolis MD	0.519	0.000		0.000		0.000				
Software Development	VARIOUS	Various	24.859	0.000		2.228	VAR	7.040	VAR			
Subtotal Support Costs			41.569	0.000		3.458		7.934				
Remarks: Remarks: Prior Years and FY 09: To date, approximately 90% of Award Fees have been awarded to Bearing Point, IBM, and GDIT. Other contracts are not yet eligible for Award Fees. FY 10: To date, no Award Fees have been awarded; contracts are not yet eligible for Award Fees.												
Developmental Test & Evaluation	Various	Various	20.607	0.000		2.765	VAR	0.000				
Developmental Test & Evaluation	Various	Various	0.202	0.000		1.864	VAR	0.000				
Operational Test & Evaluation	Various	Various	1.435	0.000		0.504	VAR	0.000				
Operational Test & Evaluation	Various	Various	0.623	0.000		0.101	VAR	0.000				

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 3026/ERP Convergence					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Quality Assurance	Various	Various	2.074	0.000		0.000		0.000				
Quality Assurance	Various	Various	1.392	0.000		0.000		0.000				
Operational Test & Evaluation	Various	Various	0.000	0.000		0.000		1.117	VAR			
Subtotal Test and Evaluation			26.333	0.000		5.234		1.117				
Remarks:												
All Management Costs	Various	Various	3.703	0.000		0.000		0.000				
Subtotal Management Services			3.703	0.000		0.000		0.000				
Remarks: RDT&E Management Services funding shifted to O&MN as the Program phase shifted to deployment.												
Total Cost			253.782	0.000		32.698		17.154				



R-1 SHOPPING LIST - Item No.

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 3034/DIMHRS		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	18.474				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3034 Future Pay and Personnel System - FY 2010 funding supports Future Pay and Personnel System (FPPS) design, development and modernization efforts. Provides development, integration, and support of future pay and personnel system capabilities, including the modernization and consolidation of existing pay and personnel systems into the DIMHRS core and remaining Navy-unique development and modernization efforts for a fully integrated pay and personnel solution. Includes (1) development of specifications and design of solutions to integrate with DIMHRS core and/or other selected pay and personnel products, (2) design and development of solutions to provide remaining Navy-unique capabilities defined by a Navy gap analysis; (3) staffing of the Navy program office, development and modernization support from the functional organization, (4) development and modernization of remaining legacy system interfaces; (5) development of the authoritative data store and interfaces with the DIMHRS core and other pay and personnel products; and Operational Test and Evaluation of the selected future pay and personnel solution.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 3034/DIMHRS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	0.000	18.474
RDT&E Articles Quantity	0	0	0
FY-10: Complete engineering design and integration requirements to incorporate Navy capabilities into the DIMHRS core and int; disconnected NMPA operations.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
O&M,N - AGSAG 4A4M	0.000	0.000	11.998
OPN - LI 8106	0.000	0.000	1.000
D. ACQUISITION STRATEGY:			
ACQUISITION STRATEGY: Navy will begin the transition to a Future Pay and Personnel System (FPPS) in FY 2012. The requirements analysis and the Navy unique capabilities will be designed and implemented into the DIHMRS core to the extent practical. Remaining Navy unique functionality will be designed into current systems to the maximum extent possible. New capability will be procured via open market methods.			
E. MAJOR PERFORMERS:			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 3034/DIMHRS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000		0.000				
Remarks:												
Customization and Gap Development	TBD	TBD	0.000	0.000		0.000		11.474	TBD			
Interface Development	TBD	TBD	0.000	0.000		0.000		7.000	TBD			
Subtotal Support Costs			0.000	0.000		0.000		18.474				
Remarks:												
Remarks: FPPS - In process of determining contract vehicle for FY-2010 and beyond.												
Test (SIT, SAT, OT)	TBD	TBD	0.000	0.000		0.000		0.000				
Subtotal Test and Evaluation			0.000	0.000		0.000		0.000				
Remarks:												
Remarks: FPPS - In process of determining contract vehicle for FY-2010 and beyond.												
Subtotal Management Services			0.000	0.000		0.000		0.000				
Remarks:												
Total Cost			0.000	0.000		0.000		18.474				

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 3034/DIMHRS			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Acquisition Milestones								
System Requirements Review				Q3-Q4				
Milestone C								
IOC								
Fielding Decision (Financial & Acquisition)								
FOC								
FRPDR								
Program Management/Systems Engineering/Data Management				Q2				
Interface Development/Customization/Test								
Note: Includes planning, requirements analysis, requirements								
evaluation, operational testing and interface testing								
Deployment/Training/Change Management				Q3-Q4				
Note: Includes training, planning, building, testing, policy								
analysis, process evaluation and strategic communication								
activities and updating concepts of operation								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 3167/Joint Technical Data Integration (JTDI)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.147	1.599	1.475				
RDT&E Articles Qty	0	0	0				
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. Portable Electronic Maintenance Aids (PEMA): Funding supports the evaluation, testing and integration to develop PEMA Commercial Off The Shelf (COTS) solution for portable device deployments across the Naval Aviation Enterprise (NAE). PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Integrated Electronic Technical Manuals (IETMs), IP based data uploads, BIT data downloads, automated diagnostics, and planeside NALCOMIS). PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment (AME) implemented for weapon systems.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 3167/Joint Technical Data Integration (JTDI)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
JTDI Development	1.147	1.599	0.982
RDT&E Articles Quantity	0	0	0
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.			
	FY 2008	FY 2009	FY 2010
Portable Electronic Maintenance Aids (PEMA)	0.000	0.000	0.493
RDT&E Articles Quantity	0	0	0
Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of T/M/S peculiar software/hardware requirements and network connectivity compliance across the GIG prior to deployment to the fleet by a yearly release cycle.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN, L.I. No. 101, Other Aviation Support Equipment	3.777	5.250	3.654
OPN, L.I. No. 100A, Portable Electronic Maintenance Aids	0.000	0.000	9.710
D. 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.			
PEMA 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.			
E. MAJOR PERFORMERS:			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 3167/Joint Technical Data Integration (JTDI)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000		0.000				
Remarks:												
Software Development	C-CPFF	Wyle Laboratories Inc, Huntsville, AL	0.275	0.000		0.000		0.000				
Software Development	C-ID/IQ	Eyak Technology LLC, Reston, VA	0.999	0.000		0.000		0.000				
Software Development	C-ID/IQ	Tyonek Mfg LLC, Anchorage, AK	0.559	0.000		0.000		0.000				
Software Development	C-ID/IQ	Integrgraph Corp, AL	1.147	0.000		1.599	DEC-08	0.000				
Software Development	C-ID/IQ	TBD	0.000	0.000		0.000		0.982	DEC-09			
Subtotal Support Costs			2.980	0.000		1.599		0.982				
Remarks:												
Remarks: - *ID/IQ - Indefinite Delivery/Indefinite Quantity **FFP - Firm Fixed Price												
Developmental Test & Evaluation	C-ID/IQ	TBD	0.000	0.000		0.000		0.493	DEC-09			
Subtotal Test and Evaluation			0.000	0.000		0.000		0.493				
Remarks:												
Program Management Support	WX	DTIC, Fort Belvoir, VA	0.010	0.000		0.000		0.000				
Subtotal Management Services			0.010	0.000		0.000		0.000				
Remarks:												
Total Cost			2.990	0.000		1.599		1.475				

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5					PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT					PROJECT NUMBER AND NAME 3167/Joint Technical Data Integration (JTDI)			
Fiscal Year	FY 2008				FY 2009				FY 2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
JTDI PROGRAM							MS C2						
Acquisition							▲						
Milestones													
Requirements:	Release 2.0				Release 2.5				Release 3.0				
Service IPT/ECs		▲				▲				▲			
Contract Award	▲				▲				▲				
Software and Hardware	Release 1.5				Release 2.0				Release 2.5				
Evaluation / Integration	■				■				■				
Site Deployments													
Test & Evaluation													
Milestones													
Risk Assessment		▲				▲				▲			
Developmental/Functional	Release 1.5				Release 2.0				Release 2.5				
Testing		■				■				■			
Production Milestones													
Deliveries:	Release 1.5				Release 2.0				Release 2.5				
Engineering Change Package		▲					▲					▲	

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE												DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT						PROJECT NUMBER AND NAME 3167/PEMA					
CLASSIFICATION:				UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE												DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT						PROJECT NUMBER AND NAME 3167/PEMA					
Fiscal Year	FY 2008				FY 2009				FY 2010						
	1	2	3	4	1	2	3	4	1	2	3	4			
PEMA PROGRAM															
Requirements: Each Image Release By TIMS									Release 1 △						
Contact Award									△						
Image Development									Release 1 □						
Test & Evaluation Milestones															
Risk Assessment										Release 1.0 △					
Functional Testing										Release 1.0 □					
Production Milestones															
Deliverables:															

[illegible]

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT			PROJECT NUMBER AND NAME 3185/Joint Airlift Information System (JALIS)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.404	0.425	0.430				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 and database 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.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9259A Condition Based Maintenance	2.603	2.393	0.000
RDT&E Articles Quantity	0	0	0
Condition Based Maintenance Enabling Technologies For Distance Support - is a continuation of the work begun to address the current capabilities and add new capabilities to the Navy's Distance Support (DS) program and Fleet maintenance transformation initiatives.			
	FY 2008	FY 2009	FY 2010
9783A SPAWAR Information Technology Center	7.140	0.000	0.000
RDT&E Articles Quantity	0	0	0
Provide critical joint Naval/University information systems research, development and technology transfer, in partnership with the University of New Orleans. The Information Technology Center (ITC) or SPAWAR System Center Atlantic New Orleans Office was established through a unique cost sharing arrangement between the State of Louisiana and the federal government to provide state-of-the-art facilities to develop and maintain technology-based enterprise solutions for managing information within the Department of Navy and Department of Defense (DoD). This includes enterprise solutions for managing/migrating DoD/Naval personnel systems, and to conduct joint Naval/local university information systems research, development of homeland security/disaster preparedness tools, and for central design, migration, and integration activities for Naval Manpower and Personnel (M&P) systems at the SPAWAR Systems Center New Orleans.			
	FY 2008	FY 2009	FY 2010
9C39A Electronic Portal For Analysis, Workload & Zoonotic Surveillance	2.314	0.000	0.000
RDT&E Articles Quantity	0	0	0
Electronic Portal for Analysis, Workload, and Zoonotic Surveillance (EPAWS)			
The Electronic Portal for Analysis, Workload and Zoonotic Surveillance of Medical and Preventative Health Records is an initial effort to develop and demonstrate a capability outside of DoD systems that will be evaluated at its completion for potential military applicability. This capability will be focused on veterinarian data systems rather than human healthcare. There are currently multiple disparate data systems that should be evaluated to create a datamart that can be accessed through a web-based portal for surveillance and analysis. This project will compliment TMA's effort on the Veterinary Services Systems Management (VSSM) effort which has been currently engaged with the intended performer to finalize requirements for this effort.			
	FY 2008	FY 2009	FY 2010
9C40A Integration Of Logistics Information For Knowledge Project	1.736	1.596	0.000
RDT&E Articles Quantity	0	0	0
Integration of Logistics Info for Knowledge Projection & Readiness - This program has developed the Mission Readiness Assistance System (MRAS) which captures shipboard equipment and logistics data and integrates that information to report real-time equipment readiness and the ship's ability to support assigned missions. The program is the shipboard version of Maintenance Figure of Merit (MFOM) which reports readiness for all ships to Defense Readiness Reporting System - Navy (DRRS-N).			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
	FY 2008	FY 2009	FY 2010
9C41A National Terrorism Preparedness Institute	2.314	2.992	0.000
RDT&E Articles Quantity	0	0	0
Funding will be used to support critical Area Security Operations Command and Control (ASOCC) information system research/development, prototyping and training activities. These funds will be used to further enhance and improve the C2 capabilities, providing a configurable Service Oriented Architecture (SOA) platform for cross utilization and information dissemination between Federal, State and local entities. As part of the prototype and development efforts, Space and Naval Warfare (SPAWAR) Systems Center Atlantic New Orleans Office will work with key domains, including the Maritime Domain Awareness (MDA) community for effectiveness and proof-of-concept testing that include integration testing and training. SSC Atlantic New Orleans Office, National Terrorism Preparedness Institute (NTPI) and the Navy share the same view that the safety and economic security of the United States depends upon the secure use of the world's oceans. This is a continuation of an FY 2007 add in PE 0605013N project 9B18N.			
	FY 2008	FY 2009	FY 2010
9C42A Navy Condition Based Maintenance For Shipyard Facilities	2.892	0.000	0.000
RDT&E Articles Quantity	0	0	0
Conditioned Based Maintenance and Mission Readiness Assessment System - 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. CBM enabling technologies are being inserted into Naval Shipyards in support of total asset visibility and to reduce equipment maintenance.			
	FY 2008	FY 2009	FY 2010
2901A Digital Access Of NCIS Records	6.170	1.596	0.000
RDT&E Articles Quantity	0	0	0
NCIS RECORDS DIGITALIZATION: The Electronic Records Management System (ERMAS) is an on-going contractor supported effort to develop a system that will digitalize all of the NCIS criminal and counterintelligence investigative records.			
FY2008: This add is an on-going contractor supported effort to develop a system that will digitalize all of the NCIS criminal and intelligence investigative records.			
	FY 2008	FY 2009	FY 2010
9E30A Supply Chain Logistics Capability at the ABL NIROP	0.000	7.978	0.000
RDT&E Articles Quantity	0	0	0
This program supports the integration, development and testing of information technology associated with energetic operations at Naval Industrial Reserve Ordnance Plants (NIROIPs) and associated industrial activities.			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605013N/INFORMATION TECHNOLOGY DEVELOPMENT	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
	FY 2008	FY 2009	FY 2010
9E01A Base Level Inventory Tracking System Enhancements	0.000	2.792	0.000
RDT&E Articles Quantity	0	0	0
Base Level Inventory Tracking System Enhancements			

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0605212N, CH-53K RDTE			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	386.305	564.774	554.827					
3059 CH-53K Development	386.305	564.774	554.827					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The CH-53 is the only marinized heavy-lift helicopter in the world and is the Marine Corps only heavy-lift helicopter. The CH-53 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. An improved CH-53 is needed to support Marine Air-Ground Task Force heavy-lift requirements in the 21st century joint environment. The CH-53K will provide improvements in range and payload, performance, cargo handling and turn-around times, reliability and maintainability, interoperability, and survivability. The CH-53K program is required to provide full system capability, including shipboard compatibilities, at Initial Operational Capability (IOC). The CH-53K will replace the CH-53E. Total aircraft quantities for the CH-53K program are 205 helicopters. This includes one Ground Test Vehicle (GTV) and four Engineering Development Models (EDMs) for SDD, to be purchased with RDT&E funds. Of the remaining 200 Production-representative and Production aircraft, the first six will be procured as Low Rate Initial Production (LRIP) Lot 1 aircraft with RDT&E and APN funds, with the four RDT&E aircraft to be used for Initial Operational Test and Evaluation (IOT&E) and the two APN aircraft establishing the IOC production base.								

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	0605212N, CH-53K RDTE	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
FY09 President's Budget:	388.380	570.484	590.243
FY10 President's Budget:	386.305	564.774	554.827
Total Adjustments	-2.075	-5.710	-35.416

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-4.165	
SBIR/STTR/FTT Assessments	-2.075		
Program Adjustments			-26.305
Rate/Misc Adjustment		-1.545	-9.111
Subtotal	-2.075	-5.710	-35.416

Schedule:

Underexecution marks during SDD have affected early design efforts causing the planned design ramp to slow during critical design phases. Although schedule has been delayed, the program is within Acquisition Program Baseline (APB) parameters.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605212N, CH-53K RDTE			PROJECT NUMBER AND NAME 3059, CH-53K Development			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	386.305	564.774	554.827					
3059 CH-53K Development	1	2	2					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The CH-53 is the only marinized heavy-lift helicopter in the world and is the Marine Corps only heavy-lift helicopter. The CH-53 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. An improved CH-53 is needed to support Marine Air-Ground Task Force heavy-lift requirements in the 21st century joint environment. The CH-53K will provide improvements in range and payload, performance, cargo handling and turn-around times, reliability and maintainability, interoperability, and survivability. The CH-53K program is required to provide full system capability, including shipboard compatibilities, at Initial Operational Capability (IOC). The CH-53K will replace the CH-53E.

Total aircraft quantities for the CH-53K program are 205 helicopters. This includes one Ground Test Vehicle (GTV) and four Engineering Development Models (EDMs) for SDD, to be purchased with RDT&E funds. Of the remaining 200 Production-representative and Production aircraft, the first six will be procured as Low Rate Initial Production (LRIP) Lot 1 aircraft with RDT&E and APN funds, with the four RDT&E aircraft to be used for Initial Operational Test and Evaluation (IOT&E) and the two APN aircraft establishing the IOC production base

R-1 SHOPPING LIST - Item No. 130

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605212N, CH-53K RDTE	PROJECT NUMBER AND NAME 3059, CH-53K Development		
B. Accomplishments/Planned Program				
Air Vehicle Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	337.849	511.309	483.491	
RDT&E Articles Quantity	1	2	2	
System Development and Demonstration (SDD) activities for the CH-53K air vehicle and its associated subsystems and components, and CH-53K ancillary systems.				
Integrated Logistics Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	10.320	11.400	25.110	
RDT&E Articles Quantity				
In-house, field activities, and contractors support of Integrated Logistic support and Test & Evaluation activities, including but not limited to planning, preparations, and management of data, support equipment, Government Furnished Equipment (GFE), Studies & Analysis, training elements of CH-53K development, and program Test & Evaluation efforts.				
Systems Engineering & Project Management	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	38.136	42.065	46.226	
RDT&E Articles Quantity				
In-house, field activities, and contractors support of Integrated Product Teams (IPTs) to allow for the preparation of acquisition strategy, examination of equipment and avionics for the CH-53K, 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-53K program.				

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA--5	0605212N, CH-53K RDTE	3059, CH-53K Development	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Not Applicable			

D. ACQUISITION STRATEGY:

On 31 October 2005, the Defense Acquisition Board reviewed the CH-53K program for a Milestone (MS) B decision on entry to System Development and Demonstration (SDD). The Under Secretary of the Defense (Acquisition, Technology and Logistics) (USD(AT&L)) signed the Acquisition Decision Memorandum (ADM) allowing the program to proceed with SDD on 22 December 2005. The CH-53K program was initiated as 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 CH-53K program will use a

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)						DATE: May 2009							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0605212N, CH-53K RDTE			3059, CH-53K Development							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Primary Hardware Development	CPAF	SIKORSKY Stratford, CT	864.176	478.206	12/08	447.727	12/09						
Ancillary Hardware Development													
Aircraft Integration													
Ship Integration													
Ship Suitability													
Systems Engineering													
Training Development													
Licenses													
Tooling													
GFE	VARIOUS	VARIOUS	22.449	6.382	VARIOUS	5.740	VARIOUS						
Award Fees	CPAF	SIKORSKY Stratford, CT	29.507	26.721	12/09	30.024	12/10						
Subtotal Product Development			916.132	511.309		483.491							
Remarks: Award Fee earned in FY 2006 by Sikorsky Aircraft Corporation equaled sixty-three percent of available award fee pool. Award Fee earned in FY 2007 by Sikorsky Aircraft Corporation equaled thirty-five percent of available award fee pool. Award Fee earned in FY 2008 by Sikorsky Aircraft Corporation equaled fifty-six percent of available award fee pool. Amounts may not add due to rounding.													
Development Support	WX	TBD				5.800	12/09						
Software Development													
Integrated Logistics Support	WX	VARIOUS	19.948	6.100	12/08	6.710	12/09						
Configuration Management													
Technical Data													
Studies & Analyses	VARIOUS	VARIOUS	16.347	0.700	VARIOUS	0.400	VARIOUS						
GFE													
Award Fees													
Subtotal Support			36.295	6.800		12.910							
Remarks: Amounts may not add due to rounding.													

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UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605212N, CH-53K RDTE			PROJECT NUMBER AND NAME 3059, CH-53K Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	WX	VARIOUS	4.197	3.600	12/08	11.000	12/09					
Operational Test & Evaluation	WX	TBD										
Live Fire Test & Evaluation	WX	NAWCWD, CHINA LAKE CA	1.020	1.000	01/09	1.200	01/10					
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			5.217	4.600		12.200						
Remarks: Amounts may not add due to rounding.												
Contractor Engineering Support	VARIOUS	VARIOUS	6.527	1.303	12/08	1.350	12/09					
Government Engineering Support	WX	VARIOUS	86.036	28.673	12/08	32.073	12/09					
Program Management Support	VARIOUS	VARIOUS	32.871	11.479	12/08	12.132	12/09					
Travel	WX	NAWCAD , PAX RIVER, MD	1.673	0.610	VARIOUS	0.671	VARIOUS					
Transportation												
SBIR Assessment												
Subtotal Management			127.107	42.065		46.226						
Remarks: Amounts may not add due to rounding.												
Total Cost			1,084.751	564.774		554.827						
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE					
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME								
RDT&E, N / BA-5										0605212N, CH-53K RDTE										3059, CH-53K Development								
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones											DRR																	
	System Integration										System		Demonstration															
RDT&E Contract Awards																												
Engineering Milestones				PDR							CDR																	
Logistics Milestones											ILA																	
Test & Evaluation Milestones																												
Production Milestones																												
Deliveries																												

R-1 SHOPPING LIST - Item Nr 130

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE:		
						May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME		
RDT&E, N / BA 5			0605212N, CH-53K RDTE			3059, CH-53K Development		
Schedule Profile			FY 2008	FY 2009	FY 2010			
System Integration phase			1Q-4Q	1Q-4Q	1Q-3Q			
Preliminary Design Review (PDR)			4Q					
Critical Design Review (CDR)					2Q			
Independent Logistics Assessment (ILA)					2Q			
USD(AT&L) Design Readiness Review (DRR)					3Q			
System Demonstration phase					3Q-4Q			
Alternative Live Fire T&E (ALT&E) (Comp.)								
Ground Test Vehicle (GTV) delivery								
Flight Readiness Review (FRR)								
Engineering Dev't Model (EDM) #1 delivery								
Integrated Test & Eval (IT) B1 (IT-B1)								
EDM #2 delivery								
EDM #3 delivery								
First Flight								
EDM #4 delivery								
Production Readiness Review (PRR)								
Independent Logistics Assessment (ILA)								
Operational Test & Eval (OT) B1 (OT-B1)								
ALFT&E (System)								
IT-B2								
MS C								
Low-Rate Initial Production (LRIP) phase								
LRIP 1 Kt Award								
LRIP 1 production								
IT-C1								
IT-C2								
OT-C1								
LRIP Lot 1 Aircraft 1 & 2								
Tech Eval								
IT-C3								
LRIP Lot 1 Aircraft 3								
LRIP Lot 1 Aircraft 4								
IOT&E / OT-2 / OPEVAL								
IOC								

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UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0605430N, C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost		24.291						
3199/Avionics Modernization		24.291						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) C-130 Avionics Modernization Program (AMP): The mission of the C/KC-130T is to provide aerial refueling service in support of fleet USN and USMC air operations and provide assault air transport for personnel, equipment, and supplies. The forty-eight (48) C/KC-130T aircraft are operating with avionics systems that require immediate attention to the issues of equipment obsolescence, supportability, commercial standardization, global navigation and flight safety. The Secretary of Defense and Regulatory Agencies are imposing initiatives and mandates for precision navigation and improved flight safety requirements for aircraft operating as air transport and troop carriers in the U.S. and abroad. These issues have significant impact on cost, reliability and maintainability. The present state of these aircraft is that they will not be operable assets by the latter half of the next decade without a major upgrade to the avionics suite and the electrical systems. Current reliability data indicates an increase in maintenance actions will be required unless an upgrade to existing systems is accomplished. Unless an avionics modernization program is implemented, aircraft availability and the ability to respond to critical missions will be decreased. To ensure global airspace access, joint service solutions in CNS/ATM are required. These improvements are driven by major restructure of airspace architecture and Air Traffic Control (ATC) procedures worldwide. CNS/ATM enhancements are categorized into three areas: navigation, communication and surveillance. The CNS/ATM C-130 AMP modification will allow the C-130 to operate within the ATM environment and comply with Euro-control standards. Communication upgrades are required to allow continued operation in all theater airspace, including data link and digitized voice capacity. Surveillance functions will identify aircraft position for ATM purposes.

Due to programmatic delays of the Avionics Modernization Program, and USMC decision to pursue an all KC-130J model fleet, the program is being restructured.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0605430N, C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:		24.407	28.969
Current President's Budget:		24.291	0.000
Total Adjustments		-0.116	-28.969
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.050	
SBIR/STTR/FTT Assessments			
Program Adjustments			-28.969
Rate/Misc Adjustments		-0.066	
Subtotal		-0.116	-28.969

Schedule:

CNS/ATM C-130 AMP. The CDR, Test Kit Installation, TRR, Integrated Development Test, OTRR, Operational Test, USN/USMC MS C FRP will not occur.

Technical:

CNS/ATM C-130 AMP. The CDR, Test Kit Installation, TRR, Integrated Development Test, OTRR, Operational Test, USN/USMC MS C FRP will not occur.

R-1 SHOPPING LIST - Item No. 131

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605430N, C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)			PROJECT NUMBER AND NAME 3199/Avionics Modernization			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost			24.291					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) C-130 Avionics Modernization Program (AMP): The mission of the C/KC-130T is to provide aerial refueling service in support of fleet USN and USMC air operations and provide assault air transport for personnel, equipment, and supplies. The forty-eight (48) C/KC-130T aircraft are operating with avionics systems that require immediate attention to the issues of equipment obsolescence, supportability, commercial standardization, global navigation and flight safety. The Secretary of Defense and Regulatory Agencies are imposing initiatives and mandates for precision navigation and improved flight safety requirements for aircraft operating as air transport and troop carriers in the U.S. and abroad. These issues have significant impact on cost, reliability and maintainability. The present state of these aircraft is that they will not be operable assets by the latter half of the next decade without a major upgrade to the avionics suite and the electrical systems. Current reliability data indicates an increase in maintenance actions will be required unless an upgrade to existing systems is accomplished. Unless an avionics modernization program is implemented, aircraft availability and the ability to respond to critical missions will be decreased. To ensure global airspace access, joint service solutions in CNS/ATM are required. These improvements are driven by major restructure of airspace architecture and Air Traffic Control (ATC) procedures worldwide. CNS/ATM enhancements are categorized into three areas: navigation, communication and surveillance. The CNS/ATM C-130 AMP modification will allow the C-130 to operate within the ATM environment and comply with Euro-control standards. Communication upgrades are required to allow continued operation in all theater airspace, including data link and digitized voice capacity. Surveillance functions will identify aircraft position for ATM purposes. Due to programmatic delays of the Avionics Modernization Program, and USMC decision to pursue an all KC-130J model fleet, the program is being restructured.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605430N, C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)	PROJECT NUMBER AND NAME 3199/Avionics Modernization		
B. Accomplishments/Planned Program				
Avionics Modernization Engineering Events	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		24.291		
RDT&E Articles Quantity				
Avionics Modernization - Due to programmatic delays of the Avionics Modernization Program, and USMC decision to pursue an all KC-130J model fleet, the program is being restructurec				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605430N, C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)	PROJECT NUMBER AND NAME 3199/Avionics Modernization	

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0604215N Standards Development	7.914		

D. ACQUISITION STRATEGY:

The USN/USMC Communication, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) C-130 Avionics Modernization Program (AMP) will issue a Request for Proposal for full and open competition to modify its 48 C/KC-130T aircraft. The strategy is to utilize a single contract to perform both system integration and production. Market research has revealed several contractors with developed systems and experience in integration and installation providing significant competition for the AMP to leverage off an existing commercial base. The requirements of the program can be met with Commercial Off the Shelf/Non-Developmental Items (COTS/NDI) subsystems integrated into an AMP system. The program will enter the acquisition framework post MS-B for integration and test kit installation on one aircraft. Integrated Testing will be utilized with a Full Rate Production Decision following successful test and MS-C decision.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0605450N JOINT AIR-TO-GROUND MISSILE (JAGM)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost		61.757	81.434					
2211 JOINT AIR-TO-GROUND MISSILE		61.757	81.434					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) JOINT AIR TO GROUND MISSILE (JAGM): JAGM is an Army-led close-air-support missile program that will utilize tri-mode seeker technology and be employed against land and maritime stationary and moving targets. JAGM will provide a fixed wing, rotary wing, and unmanned aircraft system launched missile system that provides advanced Line-of-sight and Beyond-line-of-sight capabilities, including precision point targeting and fire and forget seeker technologies; increased range; and increased lethality against soft and hardened moving and stationary targets. Its multi-mode seeker will provide robust capability in adverse weather, day or night, and in an obscured/countermeasure environment, against both stationary and moving targets. Initial Navy platform integration efforts include the F/A-18E/F, AH-1Z and MH-60R platforms. The JAGM system includes the missiles, trainers, containers, support equipment, and launcher modifications. FY 2008 funds are budgeted under R-1 # 76, Program Element 0604450N, Project Unit 2211.								

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0605450N JOINT AIR-TO-GROUND MISSILE (JAGM)

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:		62.324	79.880
Current BES		61.757	81.434
Total Adjustments		-0.567	1.554
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.398	
SBIR/STTR/FTT Assessments			
Program Adjustments			1.576
Rate/Misc Adjustments		-0.169	-0.022
Subtotal		-0.567	1.554

Schedule:

Schedule has been updated to reflect an OSD directed 27 month competitive technology development effort. A competitive downselect at the end of the technology development effort will allow for continuation of one contractor for a 4-year EMD period. Navy efforts will be focused on the F/A-18E/F, AH-1Z and MH-60R integrations. The milestone reviews and IOCs have been updated to reflect the revised Acquisition Strategy.

Technical:

Not Applicable

FY 2008 funds are budgeted under R-1 # 76, Program Element 0604450N, Project Unit 2211.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605450N JOINT AIR-TO-GROUND MISSILE			PROJECT NUMBER AND NAME 2211 JOINT AIR-TO-GROUND MISSILE (JAGM)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost		61.757	81.434					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) JOINT AIR TO GROUND MISSILE (JAGM): JAGM is an Army-led close-air-support missile program that will utilize tri-mode seeker technology and be employed against land and maritime stationary and moving targets. JAGM will provide a fixed wing, rotary wing, and unmanned aircraft system launched missile system that provides advanced Line-of-sight and Beyond-line-of-sight capabilities, including precision point targeting and fire and forget seeker technologies; increased range; and increased lethality against soft and hardened moving and stationary targets. Its multi-mode seeker will provide robust capability in adverse weather, day or night, and in an obscured/countermeasure environment, against both stationary and moving targets. Initial Navy platform integration efforts include the F/A-18E/F, AH-1Z and MH-60R platforms. The JAGM system includes the missiles, trainers, containers, support equipment, and launcher modifications.

FY 2008 funds are budgeted under R-1 # 76, Program Element 0604450N, Project Unit 2211.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605450N JOINT AIR-TO-GROUND MISSILE	2211 JOINT AIR-TO-GROUND MISSILE (JAG

B. Accomplishments/Planned Program

JAGM TECHNOLOGY DEVELOPMENT3	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		61.757	81.434	
RDT&E Articles Quantity				

Funding is to be used towards an OSD directed 27 month competitive technology development effort. Funding will be used to support the Navy's program management and integration efforts on 3 threshold platforms. This includes support of all acquisition, system engineering and test reviews. Navy integration efforts are focused on the following threshold platforms: F/A-18E/F, AH-1Z and MH-60R.

FY 2008 funds are budgeted under R-1 # 76, Program Element 0604450N, Project Unit 2211.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0605450N JOINT AIR-TO-GROUND MISSILE	2211 JOINT AIR-TO-GROUND MISSILE (

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
RDT&E, NAVY P. E. 0604450N	11.626		
RDT&E ARMY P. E. 0603460A	51.690		
RDT&E ARMY P. E. 0603460A		118.125	127.439

D. ACQUISITION STRATEGY:

The JAGM System is an ACAT 1D Joint Army/Navy program with the Army designated as lead service. The Government will utilize full and open competition to acquire the JAGM System. The JAGM program will consist of a 27 month Technology Development (TD) phase and a 48 month Engineering Manufacturing and Development (EMD) phase followed by limited rate and full rate production. The first phase will be a competitively awarded contract to two contractors and will include analysis, windtunnel, ground testing, and flight testing in support of initial Navy platform integration activities. A competitive downselect is

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605450N			PROJECT NUMBER AND NAME 2211 JOINT AIR-TO-GROUND MISSILE (JAGM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Technology Development	C/CPIF	Lockheed Martin / Orlando		7.289	12/08	10.901	12/09					
Technology Development	C/CPIF	Raytheon / Tucson		7.289	12/08	10.901	12/09					
EMD	C/CPIF	TBD										
Aircraft Integration	WX	NAWCAD, Pax River		1.072	11/08	1.517	11/09					
Aircraft Integration (AH-1Z)	TBD	Bell Helicopter, Hurst, Texas		0.725	12/08	1.275	12/09					
Aircraft Integration (F-18E/F)	TBD	Boeing, St. Louis MO		5.991	12/08	9.711	12/09					
Aircraft Integration (MH-60R)	TBD	Sikorsky, East Hartford CT		1.050	11/08	1.050	11/09					
Sytems Eng - WD	WX	NAWCWD, China Lake		16.810	11/08	16.911	11/09					
Subtotal Product Development			0.000	40.226		52.266						
Remarks: Technology Development target value of contract includes FY08 cost of \$2.68M; funded under PE: 06044540N, BA-4.												
Software Development	WX	NAWCWD, China Lake		0.491	11/08	7.239	11/09					
Software Development	TBD	LMSI, Owego NY		0.855	12/08	4.341	12/09					
Integrated Logistics Support	WX	NAWCWD, China Lake		0.325	11/08	0.403	11/09					
Subtotal Support			0.000	1.671		11.983						

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-5			PROGRAM ELEMENT 0605450N			PROJECT NUMBER AND NAME 2211 JOINT AIR-TO-GROUND MISSILE (JAGM)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Test & Evaluation	WX	NAWCAD, Pax River		2.125	11/08	3.625	11/09						
Test & Evaluation	WX	NAWCWD, China Lake		1.875	11/08	3.275	11/09						
Test & Evaluation	IPR	NASA AMES, Arlington Va		3.000	11/08	0.460	11/09						
Test & Evaluation	MIPR	AEDC/DOF, AFB, TN		7.062	11/08	3.500	11/09						
Subtotal T&E			0.000	14.062		10.860							
Remarks:													
Contr Eng Supt - ETS (NON-FFRDC)	TBD	TBD		2.350	12/08	2.400	12/09						
Government Eng Sup	WX	NAWCAD, Pax River		3.348	11/08	3.825	11/09						
Travel - Internal	TO	NAVAIR, Pax River MD		0.100	10/08	0.100	10/09						
Subtotal Management			0.000	5.798		6.325							
Remarks:													
Total Cost			0.000	61.757		81.434							
Remarks:													

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UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																DATE:
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME
RDT&E, N / BA-5								0605450N JOINT AIR-TO-GROUND MISSILE								2211 JOINT AIR-TO-GROUND MI
Fiscal Year	2008				2009				2010				2013			
	1	2	3	4	1	2	3	4	1	2	3	4	4	1	2	3
Acquisition Milestones				CA ▲												
Prototype Phase					Technology Development Phase (2 KTR)											
Development											PDR ▲					
FW Integration					F/A-18E/F											
RW Integration					AH-1Z & MH-60R											
Test & Evaluation Milestones																
Development Test					LT / EDT 1											
Operational Test																
Production Milestones																
Production Deliveries																

R-1 SHOPPING LIST - Item No. 132

UNCLASSIFIED

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CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 132

UNCLASSIFIED

Exhibit R-4a, Schedule Detail

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	861.136	1,123.877	1,162.417					
2696 P-8A MULTI-MISSION MARITIME AIRCRAFT	852.608	1,109.052	1,132.738					
3181 P-8A SPIRAL ONE DEVELOPMENT	7.564	14.825	29.679					
9999 CONGRESSIONAL ADD	.964							

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

The P-8A Multi-mission Maritime Aircraft (MMA) will replace the aging P-3 aircraft. The P-8A program was initiated in response to the Joint Requirements Oversight Council (JROC) validated Mission Needs Statement (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 P-8A 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, Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)), approved the program Acquisition Strategy on 8 February 2002. Approval to enter System Development and Demonstration (SDD) was attained at the Defense Acquisition Board (DAB) on 28 May 2004. Approval was granted to award the SDD contract at the DAB. The contract was awarded to Boeing on 14 June 2004. A successful Critical Design Review (CDR) was completed in June 2007. In August 2007 the Design Readiness Review (DRR) was conducted and resulted in approval to obligate funding for the fabrication of the Stage II flight test aircraft.

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. Six 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 (FY09/Qty-3) 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. The scope of SDD includes activities necessary to facilitate an efficient transition of the fleet to achieve the P-8A Initial Operational Capability (IOC) of Increment 1 in FY13. P-8A plans to enter Production and Deployment (PD) in the 3rd quarter of FY10 after completing the Milestone C DAB.

P-8A program is based on an evolutionary acquisition strategy consisting of sequential spirals that will retain effectiveness for winning major combat operations through 2020 while managing cost. The P-8A Spiral One Integration effort will allow the P-8A to keep pace with the threat. In order to pace the threat, the first spiral will incorporate the following capabilities into the P-8A: Advanced Extended Echo Ranging, Automatic Identification System, Acoustic Rapid Commercial-Off-The-Shelf Insertion, Integrated Broadcast Services, and updates to the Tactical Support Center (ground support facility) as well as additional Anti-Submarine (ASW) and Anti-Surface Warfare (ASuW) capabilities required to reduce the gap between the evolved legacy P-3C and P-8A systems. These capabilities and other emergent capability requirements, such as the High Altitude Anti-Submarine Warfare (HAASW) capability, will be investigated during the Technology Development phase of Spiral #1. The scope of this effort includes the integration, design, and test of the capability enhancements to the P-8A and associated Tactical Support Center (TSC) ground support facilities and initial trainers supporting IOT&E. Integration of the Spiral One capabilities will be accomplished incrementally, based on the scope of the integration effort. Fleet introduction is planned to be completed in FY15.

Congressional Add for Military Aircraft Loss of Control Training.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		R-1 ITEM NOMENCLATURE 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT

B. PROGRAM CHANGE SUMMARY

Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Previous President's Budget:	862.303	1,132.026	1,136.267
Current President's Budget:	861.136	1,123.877	1,162.417
Total Adjustments	-1.167	-8.149	26.150

Summary of Adjustments

Congressional Rescissions		-5.084	
Congressional Adjustments			
SBIR/STTR/FTT Assessments	-6.267		
Program Adjustments	5.100		26.221
Rate/Misc Adjustments		-3.065	-0.071
Subtotal	-1.167	-8.149	26.150

Schedule:

Project 2696: The delivery of the third flight aircraft, T3, has changed from 2Q FY10 to 3Q FY10 due to the Boeing Union strike recovery plan.

Project 3181: The schedule for Increment 2 has been adjusted to reflect a Milestone B in 3Q FY10 (coinciding with Increment 1, Milestone C). Additional risk reduction work activities extending technical development until Milestone B will be conducted. Systems Design and Integration (SDI) contract award has been moved to 3Q FY10 after the conduct of Milestone B review.

Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME 2696, P-8A MULTI-MISSION MARITIME AIRCRAFT				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
2696 P-8A MULTI-MISSION MARITIME AIRCRAFT		852.608	1,109.052	1,132.738					
RDT&E Articles Qty			3						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The P-8A Multi-mission Maritime Aircraft (MMA) will replace the aging P-3 aircraft. The P-8A program was initiated in response to the Joint Requirements Oversight Council (JROC) validated Mission Needs Statement (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 P-8A 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 Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) approved the program Acquisition Strategy on 8 February 2002. Approval to enter System Development and Demonstration (SDD) was attained at the Defense Acquisition Board (DAB) on 28 May 2004. Approval was granted to award the SDD contract at the DAB. The contract was awarded to Boeing on 14 June 2004. A successful Critical Design Review (CDR) was completed in June 2007. In August 2007 the Design Readiness Review (DRR) was conducted and resulted in approval to obligate funding for the fabrication of the Stage II flight test aircraft.

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. Six 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 (FY09/Qty-3) will support the completion of combined DT/OT and Initial Operational Test and Evaluation (IOT&E). The SDD contract includes the development and initial builds of training devices to support IOT&E. P-8A plans to enter Production and Deployment (PD) in the 3rd quarter of FY10 after completing the Milestone C DAB.

Continue System Development and Demonstration (SDD)	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	807.791	1,047.834	1,064.968	
RDT&E Articles Qty		3		

System Development and Demonstration (SDD) phase. Scope of effort includes: design, develop, build, and test P-8A aircraft, avionics, mission systems, Systems Integration Lab(s), wind tunnel test models, ground and flight test articles (SDD Stage I, FY06, Qty-3; SDD Stage II, FY09, Qty-3, other test articles, associated Tactical Support Center (TSC) updates, and development and initial builds of training devices to support IOT&E. Conduct the periodic cost and schedule performance reviews associated with Earned Value Management and prepare for and conduct technical, test and logistic reviews. Work effort will continue until the end of the SDD contract planned in FY13.

Continue Engineering and Technical Development and Test for SDD contracts	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	44.817	61.218	67.770	
RDT&E Articles Qty				

Test, GFE, Engineering and Technical Development for the SDD contract: Effort includes: analysis of contracted deliverables; 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, 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. Conduct and support Integrated Test and Evaluation (combined Development and Operational Test and Evaluation) and Live Fire Test and Evaluation. Work effort will continue until the end of the SDD contract planned in FY13.

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT	PROJECT NUMBER AND NAME 2696, P-8A MULTI-MISSION MARITIME AIRCRAFT	

C. OTHER PROGRAM FUNDING SUMMARY:

	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>
APN-1 P-8A Procurement (P-1 #16 & #17)		110.242	1,825.051
APN-6 P-8A Initial Spares (P-1 #60)			123.289
MILCON PE 0805376 - P-623 & P-630		48.220	5.917

D. ACQUISITION STRATEGY:

The Multi-Mission Maritime Aircraft (MMA) Milestone 0 was approved 22 March 2000 and the resulting Acquisition Decision Memorandum directed P-8A to begin the CE phase consisting of an Analysis of Alternatives (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 P-8A system. The P-8A 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. P-8A IOC objective is FY 2013.

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Exhibit R-3 Cost Analysis (page 1)									DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			May 2009							
RDT&E,N / BA-5			0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT			2696, P-8A MULTI-MISSION MARITIME AIRCRAFT							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date						
PRODUCT DEVELOPMENT													
Award Fee for Primary HW	C-CPAF	THE BOEING COMPANY, SEATTLE, WA	77.538	68.560	10/08	86.878	10/09						
Info. Assurance	WX	NAWCAD, PATUXENT RIVER MD	.931	.350	11/08								
Primary HW Dev - Boeing	C-CPAF	THE BOEING COMPANY, SEATTLE, WA	3,124.641	966.189	10/08	964.192	10/09						
Primary HW Dev - SPAWAR	WX/RX	SPAWARSYSCOM, SAN DIEGO CA	16.478	6.500	02/09	7.100	02/10						
Sys Eng (Gov)	WX	VARIOUS	38.646	6.235	11/08	6.798	11/09						
All other PY Product Development	VARIOUS	VARIOUS	70.538										
SUBTOTAL PRODUCT DEVELOPMENT			3,328.772	1,047.834		1,064.968							

Remarks: The total award fee issued to date was 2.1% of the total budget.

SUPPORT													
Int. Log Gov	WX	NAWCAD, PATUXENT RIVER MD	22.196	6.736	11/08	8.266	11/09						
SAE (NON-FFRDC)	C-PPF	VARIOUS	9.734	.616	01/09	.610	01/10						
Tech Dev Gov	WX	NAWCAD, PATUXENT RIVER MD	54.856	8.932	11/08	7.375	11/09						
All other PY Support Cost	VARIOUS	VARIOUS	4.868										
SUBTOTAL SUPPORT			91.654	16.284		16.251							

Remarks:

TEST & EVALUATION													
Dev T&E - Gov	WX	VARIOUS	15.421	12.948	11/08	17.563	11/09						
GFE & GFI	VARIOUS	VARIOUS	7.219	15.700	11/08	20.600	11/09						
LFT&E - Gov	WX	VARIOUS	13.328	5.449	11/08	2.398	11/09						
Oper Test & Eval - TBD	WX	VARIOUS											
All other PY Test & Evaluation	VARIOUS	VARIOUS	5.187										
SUBTOTAL TEST & EVALUATION			41.155	34.097		40.561							

Remarks:

MANAGEMENT													
Mgmt Suppt Serv (NON-FFRDC)	C-PPF	RBC, INCORPORATED, ALEXANDRIA, VA	14.480	4.507	12/08	4.949	12/09						
Program Mgmt Support	WX	NAWCAD, PATUXENT RIVER MD	21.865	5.780	11/08	5.459	11/09						
Travel - EOB	TO	NAWCAD, PATUXENT RIVER MD	2.072	.550	11/08	.550	11/09						
All other PY Management Cost	VARIOUS	VARIOUS	19.060										
SUBTOTAL MANAGEMENT			57.477	10.837		10.958							

Remarks:

Total Cost			3,519.058	1,109.052		1,132.738							

Remarks: Dollars may not add due to rounding.

EXHIBIT R4, Schedule Profile												DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5						PROGRAM ELEMENT NUMBER AND NAME 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT						PROJECT NUMBER AND NAME 2696, P-8A MULTI-MISSION MARITIME AIRCRAFT
Fiscal Year	FY 2008				FY 2009				FY 2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones						IPR ▲				MS C △		
Acquisition Phases							System Dev & Demo					
						Production and Deployment						
MMA System						TRR △						
Contract Awards					SDD Stage II aircraft ▲							
RDT&E, N												
Production						AP for LRIP #1 ▲				LRIP #1 & AP LRIP #2 △		
Test & Evaluation Milestones							Ground Testing					
Ground Testing												
Flight Test Program												
Initial Operational Test & Evaluation (IOT&E)												
Production											LRIP	
Deliveries												
SDD Test Aircraft								SDD Stage I aircraft 1		1	1	
LRIP Aircraft												

EXHIBIT R-2a, RDT&E Project Justification						DATE:		
						May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E,N / BA-5			0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT			3181, P-8A SPIRAL ONE DEVELOPMENT		
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010			
3181 P-8A SPIRAL ONE DEVELOPMENT			7.564	14.825	29.679			
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The P-8A Multi-mission Maritime Aircraft (MMA) program is based on an evolutionary acquisition strategy consisting of sequential spirals that will retain effectiveness for winning major combat operations through 2020 while managing cost. In order to pace the threat, the first spiral will incorporate the following capabilities into the P-8A: Advanced Extended Echo Ranging, Automatic Identification System, Acoustic Rapid Commercial-Off-The-Shelf Insertion, Integrated Broadcast Services, and updates to the Tactical Support Center, as well as additional Anti-Submarine (ASW) and Anti-Surface Warfare (ASuW) capabilities required to reduce the gap between the evolved legacy P-3C and P-8A systems. These capabilities and other emergent capability requirements such as the High Altitude Anti-Submarine Warfare (HAASW) capability, will be investigated during the Technology Development phase of Spiral #1. Spiral #1 will capitalize on existing planned P-8A DABs to serve as decision points for entering phases of planned work.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Perform technology demonstrations and analyses of proposed new capabilities	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	2.994	12.653	27.326	
RDT&E Articles Qty - Not Applicable				

Multiple technology demonstrations and analyses of the proposed new P-8A capabilities to ascertain the most affordable, military useful, most mature technological solution. Initiate design for integrating new capabilities into P-8A Tactical Support Center and associated trainers.

Conduct technical, cost, risk and logistics analysis of proposed technologies	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	4.570	2.172	2.353	
RDT&E Articles Qty				

Conduct technical, cost, risk and logistics analysis of proposed technologies. Evaluate system requirements through cost/performance trade-off analysis. Provide technical and management support for the development of acquisition documentation. Provide engineering and management of technical development effort.

C. OTHER PROGRAM FUNDING SUMMARY:

FY2008 FY2009 FY2010

Not Applicable

D. ACQUISITION STRATEGY:

P-8A program is based on an evolutionary acquisition strategy consisting of sequential spirals that will retain cost-wise effectiveness for winning major combat operations through 2020. The P-8A Spiral One Integration effort will allow the P-8A to keep pace with the threat. In order to pace the threat, the first spiral will incorporate the following capabilities into the P-8A: Advanced Extended Echo Ranging, Automatic Identification System, Acoustic Rapid Commercial-Off-The-Shelf Insertion, Integrated Broadcast Services, and updates to the Tactical Support Center as well as additional Anti-Submarine (ASW) and Anti-Surface Warfare (ASuW) capabilities required to reduce the gap between the evolved legacy P-3C and P-8 systems. These capabilities and other emergent capability requirements such as the High Altitude Anti-Submarine Warfare (HAASW) capability, will be investigated during the Technology Development phase of Spiral #1. Integration of the Spiral One capabilities will be accomplished incrementally, based on the scope of the integration effort. Fleet introduction is planned to be completed in FY15.

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Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E,N / BA-5		0605500N, MULTI-MISSION MARITIME AIRCRAFT			3181, P-8A SPIRAL ONE DEVELOPMENT							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
PRODUCT DEVELOPMENT												
Ancillary Hdw Development	VARIOUS	VARIOUS		.508	01/09	2.085	01/10					
Primary HW Dev - TBD	VARIOUS	VARIOUS	1.021	7.298	03/09	7.210	03/10					
Primary Hdw Dev - BOEING	TBD	THE BOEING COMPANY, SEATTLE, WA	.100	3.054	04/09	15.999	03/10					
Systems Eng	WX	NAWCAD, PATUXENT RIVER MD	1.873	1.793	11/08	2.032	11/09					
SUBTOTAL PRODUCT DEVELOPMENT			2.994	12.653		27.326						

Remarks:

SUPPORT												
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD	.207	.353	11/08	.578	11/09					
Studies & Analyses	VARIOUS	VARIOUS	3.350	.470	01/09	.400	01/10					
SUBTOTAL SUPPORT			3.557	.823		.978						

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	.050	.210	11/08	.320	11/09					
GFE/GFI/GFP	VARIOUS	NAWCAD, PATUXENT RIVER MD				.050	11/09					
Oper Test & Eval	WX	NAWCAD, PATUXENT RIVER MD										
Test Assets	VARIOUS	NAWCAD, PATUXENT RIVER MD				.100	11/09					
SUBTOTAL TEST & EVALUATION			.050	.210		.470						

Remarks:

MANAGEMENT												
Eng Tech Serv (Non-FFRDC)	VARIOUS	TBD		.300	01/09	.300	01/10					
Mgmt Suppt Serv (NON-FFRDC)	VARIOUS	VARIOUS	.778	.600	01/09	.300	01/10					
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	.150	.179	11/08	.220	11/09					
Travel	WX	NAWCAD, PATUXENT RIVER MD	.035	.060	11/08	.085	11/09					
SUBTOTAL MANAGEMENT			.963	1.139		.905						

Remarks:

Total Cost			7.564	14.825		29.679						

Remarks: Dollars may not add due to rounding.

EXHIBIT R4, Schedule Profile												DATE:							
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E,N / BA-5												0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT				3181, P-8A SPIRAL ONE DEVELOPMENT			
Fiscal Year	FY 2008				FY 2009				FY 2010										
	1	2	3	4	1	2	3	4	1	2	3	4							
Acquisition Milestones											MS B △								
Acquisition Phases		Concept Refinement				Tech Development													
																	SDI		
Design Reviews																			
Contract Awards																			
System Design and Integration			▲ Tech Dev			▲ Tech Dev 2					△ SDI								
Production																			
Test & Evaluation Milestones																			
Integration Testing (IT)																			
Production Milestones																			
Deliveries																			

UNCLASSIFIED

Exhibit R-4a, Schedule Detail							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-5	0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT				3181, P-8A SPIRAL ONE DEVELOPMENT			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Milestone B			3Q					
Concept Refinement	2Q-3Q							
Technology Development	3Q-4Q	1Q-4Q	1Q-3Q					
Contract Award (Tech Dev 2)		3Q						
Contract Award (SDI)			3Q					
System Design and Integration			3Q-4Q					
Developmental Testing (Integration Testing)								
Fleet Release								

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	0.964							
RDTE Articles Qty - Not Applicable								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5	PROGRAM ELEMENT NUMBER AND NAME 0605500N, P-8A MULTI-MISSION MARITIME AIRCRAFT	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS		
B. Accomplishments/Planned Program				
9C43A	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.964			
RDT&E Articles Quantity - Not Applicable				
MILITARY AIRCRAFT LOSS OF CONTROL TRAINING				
The Military Aircraft Loss of Control Training will initiate the research for integrating new capabilities into associated trainers.				

CLASSIFICATION:			UNCLASSIFIED																																																
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0204201N/CG(X)																																															
COST (In Millions)	FY 2008	FY 2009	FY 2010																																																
Total PE Cost	0.000	0.000	150.022																																																
3106 / Combat System Integration	0.000	0.000	50.891																																																
3107 / CG(X) Development	0.000	0.000	99.131																																																
A. MISSION DESCRIPTION: This Program Element (PE) provides funds for development of CG (X), the next generation cruiser. CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the CG-47 class as they reach the end of their 35 year service life. CG (X) development efforts will mature the ship design through Milestone B. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Funding:</td> <td style="text-align: center;">FY 2008</td> <td style="text-align: center;">FY 2009</td> <td style="text-align: center;">FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">150.022</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">150.022</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">155.632</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-5.610</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">150.022</td> </tr> </table> Funding in FY10 was transferred from PE 0604300N into PE 0204201N, a newly established PE for all CG (X) Research and Development .								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	0.000	0.000	0.000	FY10 President's Budget	0.000	0.000	150.022	Total Adjustments	0.000	0.000	150.022	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	0.000	0.000	SBIR/STTR/FTT Assessment	0.000	0.000	0.000	Program Adjustments	0.000	0.000	155.632	Rate/Misc Adjustments	0.000	0.000	-5.610	Total	0.000	0.000	150.022
Funding:	FY 2008	FY 2009	FY 2010																																																
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CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3106/Combat System Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	50.891				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for the integration of the CG (X) Combat System, C4I, Air, and Ship systems including materiel analysis, technology development, and integration of the Combat System with the CG (X) Mission System. Integration efforts will include communications, electronics, air, command and control, Combat System interface requirements, definition, system integration, and test and evaluation. In FY10, funding has been transferred to PE 0204201N from PE 0604300N, which encompasses all CG (X) Projects.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)				PROJECT NUMBER AND NAME 3106/Combat System Integration			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
System Engineering		0.000		0.000		43.257			
RDT&E Articles Quantity		0		0		0			
FY10: Support of Total Ship Systems Engineering (TSSE) with maturation of mission system architecture functional allocation and integration requirements to support materiel solution analysis, including Total Ship System capabilities.									
		FY 2008		FY 2009		FY 2010			
Design		0.000		0.000		2.545			
RDT&E Articles Quantity		0		0		0			
FY10: Conduct feasibility analysis to evaluate capabilities and cost based on requirements allocation.									
		FY 2008		FY 2009		FY 2010			
Risk Reduction		0.000		0.000		5.089			
RDT&E Articles Quantity		0		0		0			
FY10: Conduct risk reduction for Critical Technology Elements (CTEs) in Total Ship System integration, including technology maturity and integration risks.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
PE 0604501N Project 3186 / RDT&E,N	92.920	106.250	190.046						389.216
PE 0604300N Project 3106 / RDT&E, N	0.819	57.467	0.000						58.286
PE 0604300N Project 3107 / RDT&E, N	84.078	84.518	0.000						168.596
D. ACQUISITION STRATEGY:									
TBD - The Acquisition Strategy is currently in development in accordance with concept resulting from Analysis of Alternative, and is scheduled to be completed following Milestone A.									
E. MAJOR PERFORMERS:									
Contractors - ALION Science & Technology									
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NUWC Newport, NSWC Carderock, SSC San Diego, SSC Charleston									
Universities/FFRDCs - JHU/APL, MITRE									
SYSCOMS - PEO IWS, PEO C4I, NAVAIR									

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3106/Combat System Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Integration	TBD	Various	0.000	0.000		43.257	OCT-09	CONT	CONT	0.000
Subtotal Product Development			0.000	0.000		43.257		CONT	CONT	0.000
Remarks:										
Subtotal Support Costs			0.000	0.000		0.000		0.000	0.000	0.000
Remarks:										
Subtotal Test and Evaluation			0.000	0.000		0.000		0.000	0.000	0.000
Remarks:										
Government Engineering Services	VARIOUS	VARIOUS	0.000	0.000		5.089	OCT-09	CONT	CONT	0.000
Contractor Engineering Services	VARIOUS	VARIOUS	0.000	0.000		2.545	OCT-09	CONT	CONT	0.000
Subtotal Management Services			0.000	0.000		7.634		CONT	CONT	0.000
Remarks:										
Total Cost			0.000	0.000		50.891		CONT	CONT	0.000

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)						PROJECT NUMBER AND NAME 3106/Combat System Integration					
				FY08				FY09				FY10			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CG(X)															
				AoA Phase 2 Completion											
															
				AoA Phase 1 Release				Platform Review							
															
								Platform Review							
															
															
												Platform Decision			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3106/Combat System Integration		
Schedule Profile		FY 2008	FY 2009	FY 2010			
AoA Phase 2 Completion		1Q					
AoA Phase 1 Release		4Q					
Platform Review			3Q				
Platform Review				1Q			
Platform Decision				3Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3107/CG(X) Development		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	99.131				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: CG (X), the next generation cruiser, will focus on providing multi-mission capabilities as part of the 21st Century family of surface combatants. CG (X) is the follow-on to the CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for total ship system development. These development efforts include materiel analysis, technology development, systems engineering, computer program development, interface design, 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 Review (CDR) will occur through these efforts. In FY10, funding has been transferred to PE 0204201N, which encompasses all CG (X) Projects.							

CLASSIFICATION:	UNCLASSIFIED			
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)	PROJECT NUMBER AND NAME 3107/CG(X) Development		
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
	FY 2008	FY 2009	FY 2010	
Advanced Nuclear Propulsion Systems	0.000	0.000	24.000	
RDT&E Articles Quantity	0	0	0	
FY10: Conduct research and development of Advanced Nuclear Propulsion Systems for CG (X).				
	FY 2008	FY 2009	FY 2010	
System Engineering	0.000	0.000	50.131	
RDT&E Articles Quantity	0	0	0	
FY10: Development of requirements, capabilities, cost, and technical feasibility of the total ship system to develop a Materiel Solution. Refinement of program documentation to support CG(X) decision reviews (Gate and Milestone).				
	FY 2008	FY 2009	FY 2010	
Risk Reduction	0.000	0.000	25.000	
RDT&E Articles Quantity	0	0	0	
FY10: Conduct risk reduction for Critical Technology Elements (CTEs) including technology maturity and manufacturing feasibility in support of materiel solution analysis.				
C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
PE 0604501N Project 3186 / RDT&E,N	92.920	106.250	190.046	389.216
PE 0604300N Project 3106 / RDT&E, N	0.819	57.467	0.000	58.286
PE 0604300N Project 3107 / RDT&E, N	84.078	84.518	0.000	168.596
D. ACQUISITION STRATEGY:				
TBD - The Acquisition Strategy is currently in development in accordance with concept resulting from Analysis of Alternative, and is scheduled to be completed following Milestone A.				
E. MAJOR PERFORMERS:				
Contractors - Alion				
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NSWC Carderock				
Universities/FFRDCs - JHU/APL, Carnegie Mellon, MITRE				

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS								DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3107/CG(X) Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Systems Engineering & Integration	TBD	VARIOUS	0.000	0.000		54.131	DEC-09	CONT	CONT	0.000
Subtotal Product Development			0.000	0.000		54.131		0.000	CONT	0.000
Remarks:										
Subtotal Support Costs			0.000	0.000		0.000		0.000	0.000	0.000
Remarks:										
Subtotal Test and Evaluation			0.000	0.000		0.000		0.000	0.000	0.000
Remarks:										
Contractor Engineering Support	VARIOUS	VARIOUS	0.000	0.000		20.000	DEC-09	CONT	CONT	0.000
Government Engineering Support	VARIOUS	VARIOUS	0.000	0.000		25.000	DEC-09	CONT	CONT	0.000
Subtotal Management Services			0.000	0.000		45.000		CONT	CONT	0.000
Remarks:										
Total Cost			0.000	0.000		99.131		0.000	CONT	0.000

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5				PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)				PROJECT NUMBER AND NAME 3107/CG(X) Development							
				FY08				FY09				FY10			
				Q1Q2Q3Q4				Q1Q2Q3Q4				Q1Q2Q3Q4			
CG(X)				 AoA Phase 2 Completion				 AoA Phase 1 Release				 Platform Review			
												 Platform Review			
												 Platform Decision			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204201N/CG(X)			PROJECT NUMBER AND NAME 3107/CG(X) Development		
Schedule Profile		FY 2008	FY 2009	FY 2010			
AoA Phase 2 Completion		1Q					
AoA Phase 1 Release		4Q					
Platform Review			3Q				
Platform Review				1Q			
Platform Decision				3Q			

CLASSIFICATION:			UNCLASSIFIED																																																
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5				R-1 ITEM NOMENCLATURE 0204202N/DDG-1000																																															
COST (In Millions)	FY 2008	FY 2009	FY 2010																																																
Total PE Cost	0.000	0.000	539.053																																																
2464 / DD(X) Sys Design, Dev & Integration	0.000	0.000	426.982																																																
4009 / Advanced Gun System (AGS) on DD(X)	0.000	0.000	112.071																																																
A. MISSION DESCRIPTION: A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides funds for development of the DDG 1000 Class of U. S. Navy surface combatants. The mission of the DDG 1000 class is to provide affordable and credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DDG 1000 will provide advanced land attack capability in support of the ground campaign and contribute to Naval, Joint or Combined battlespace dominance in littoral operations. DDG 1000 will establish and maintain surface and sub-surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DDG 1000 will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction. Funding for FY 10 was realigned from PE 0604300N. B. PROGRAM CHANGE SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Funding:</td> <td style="text-align: center;">FY 2008</td> <td style="text-align: center;">FY 2009</td> <td style="text-align: center;">FY 2010</td> </tr> <tr> <td>FY09 President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>FY10 President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">539.053</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">539.053</td> </tr> <tr> <td>(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Congressional Rescissions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Program Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">547.119</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-8.066</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">539.053</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	0.000	0.000	0.000	FY10 President's Budget	0.000	0.000	539.053	Total Adjustments	0.000	0.000	539.053	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	0.000	0.000	SBIR/STTR/FTT Assessment	0.000	0.000	0.000	Program Adjustments	0.000	0.000	547.119	Rate/Misc Adjustments	0.000	0.000	-8.066	Total	0.000	0.000	539.053
Funding:	FY 2008	FY 2009	FY 2010																																																
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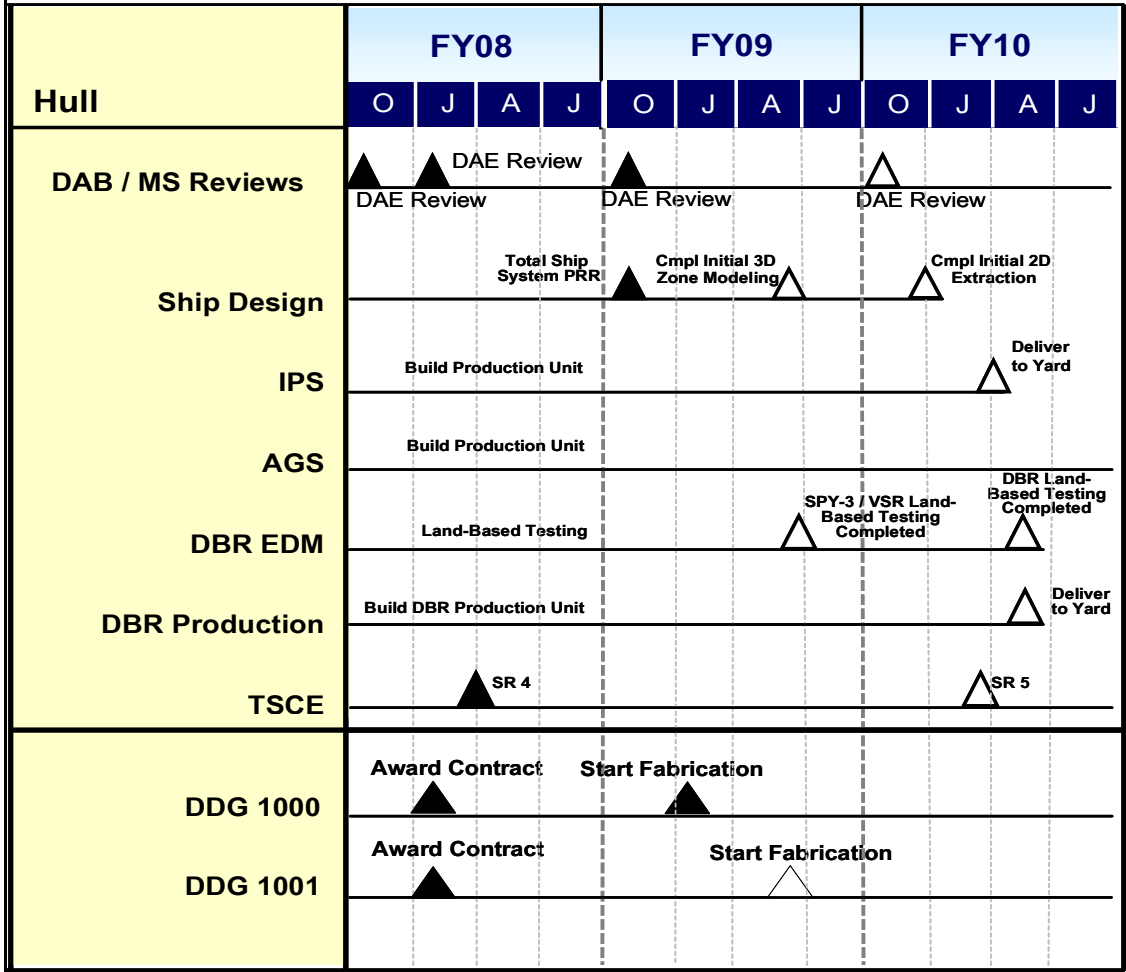
CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000			PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	426.982				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project encompasses DDG 1000 development efforts required to deliver the Flight I DDG 1000 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; hullform testing at Naval Surface Warfare Center/Carderock; communication and sensor aperture cosite and electromagnetic interference risk reductions testing for critical arrays; planning for Integrated Power Systems (IPS) and ship control system testing and integration; develop Tomahawk Weapon Control System software; Integration of Line of Sight (LOS)/Below Line of Site (BLOS) communication capability; and develop an alternative to Full Ship Shock Trials (FSSTs). Funding for previous years is included in PE 0604300N.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000	PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
System Engineering, Development and Testing	0.000	0.000	395.282
RDT&E Articles Quantity	0	0	0
FY10 - Development of the DDG 1000 Flight 1 software, Commercial Off the Shelf/Government Off the Shelf (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 using an incremental release process (Software (SW) Releases 5-6). Conduct the following events for the remaining software releases: Software Release 5-complete Test Readiness Review (TRR), System Acceptance Testing (SAT) and Software Certification Panel (SCP) in FY10. Software Release 6 - conduct SW Preliminary Design Review (S-PDR) and SW Critical Design Review (S-CDR) in FY10. Conduct all developmental software test planning, conduct, test data analysis and reporting in accordance with the DDG 1000 TEMP. Perform total ship system design analysis. Perform systems engineering, develop, and fully integrate into the DDG 1000 System an Electric Ship (ES) system for DDG 1000. Integrate Next Generation Command and Control Processor (NGC2P). For Next Generation Command and Control Processor (NGC2P) complete hardware and software through software release six, accomplish testing and certification. Develop, test and integrate the Common Display System (CDS) consoles and medium/large screen displays. Continue hullform testing at NSWC/Carderock. Planning for IPS and Ship Control System (SCS) testing and integration at Naval Surface Warfare Center/Philadelphia. Conduct communication and sense aperture cosite and electromagnetic interference risk reduction testing for critical arrays at the Wallops Island Test Facility. Develop Tomahawk Weapons Control System software. Conduct developmental testing and operation evaluation in accordance with TEMP. Conduct Live Fire Testing & Vulnerability Analysis in accordance with TEMP. Conduct signature range Non-Recurring Engineering (NRE) to upgrade ranges to support DDG 1000 test and evaluation.			
	FY 2008	FY 2009	FY 2010
Line of Site (LOS)/Below Line of Site (BLOS) Communication Capability	0.000	0.000	20.000
RDT&E Articles Quantity	0	0	0
FY10 - Provides funding for integration of High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) Line of Site (LOS)/Below Line of Site (BLOS) communication capability on DDG 1000 and 1001.			
	FY 2008	FY 2009	FY 2010
Full Ship Shock Trials (FSST)	0.000	0.000	11.700
RDT&E Articles Quantity	0	0	0
FY10 - Provides funding to develop a common, affordable Navy-wide alternative to Full Ship Shock Trials (FSST) for Surface Ships, Aircraft Carriers and Submarines in support of OPNAV N091 Memo dated 5 November 2007 (DON Test & Evaluation Objectives). FSSTs are required for all new ship classes and flights to confirm design and construction shock-hardness requirements and as part of OSD's Live Fire Test & Evaluation survivability assessment.			

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000				PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration			
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
BLI 211900 SCN	2,906.867	1,504.297	1,084.161						5,495.325
BLI 5300 /SCN	0.000	0.000	309.636						309.636
PE 0604300N/ RDT&E,N	622.812	596.109	0.000						1,218.921
D. ACQUISITION STRATEGY: The funding in this program element supports the DDG 1000/DDG 1001 dual lead ship acquisition strategy.									
E. MAJOR PERFORMERS: Major Contractors - Raytheon, Lockheed Martin, BAE, Northrop Grumman Ship Systems, BIW Government Field Activities - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme, NSWC Philadelphia, NAWC, SPAWAR Universities - John Hopkins University, Applied Physics Lab (APL/JHU)									

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000						PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				Total Cost (\$000)	Target Value of Contract
Ship Integration Development Phase IV	CPAF	DDG 1000 Dev & Test (Raytheon)	0.000	0.000		310.137	DEC-09				310.137	0.000
Subtotal Product Development			0.000	0.000		310.137					310.137	0.000
Remarks:												
Live Fire Test & Evaluation	CPAF	Raytheon	0.000	0.000		5.000	DEC-09				5.000	0.000
Test & Evaluation	Various	Various	0.000	0.000		49.855	DEC-09				49.855	0.000
Subtotal Test and Evaluation			0.000	0.000		54.855					54.855	0.000
Remarks:												
Government Engineering Support	WR	NSWC DD Dahlgren VA	0.000	0.000		13.300	DEC-09				13.300	0.000
Government Engineering Support	WR	NSWC Philadelphia PA	0.000	0.000		7.000	DEC-09				7.000	0.000
Government Engineering Support	WR	NSWC Port Hueneme CA	0.000	0.000		1.252	DEC-09				1.252	0.000
Government Engineering Support	WR	NAWC Paxtuxent River MD	0.000	0.000		8.408	DEC-09				8.408	0.000
Government Engineering Support	WR	NSWC CD Bethesda MD	0.000	0.000		15.100	DEC-09				15.100	0.000
Government Engineering Support	WR	SSCSD San Diego CA	0.000	0.000		8.240	DEC-09				8.240	0.000
Government Engineering Support	Various	Other Gov't Activities	0.000	0.000		7.690	DEC-09				7.690	0.000
Travel	Various	Various	0.000	0.000		1.000	DEC-09				1.000	0.000
Subtotal Management Services			0.000	0.000		61.990					61.990	0.000
Remarks:												
Total Cost			0.000	0.000		426.982					426.982	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000	PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration	



Key
PDR
CDR
DAB
DAE
PRR
SR
▲

Preliminary Design Review
Critical Design Review
Defense Acquisition Board
Defense Acquisition Executive
Production Readiness Review
Software Release
Completed Event

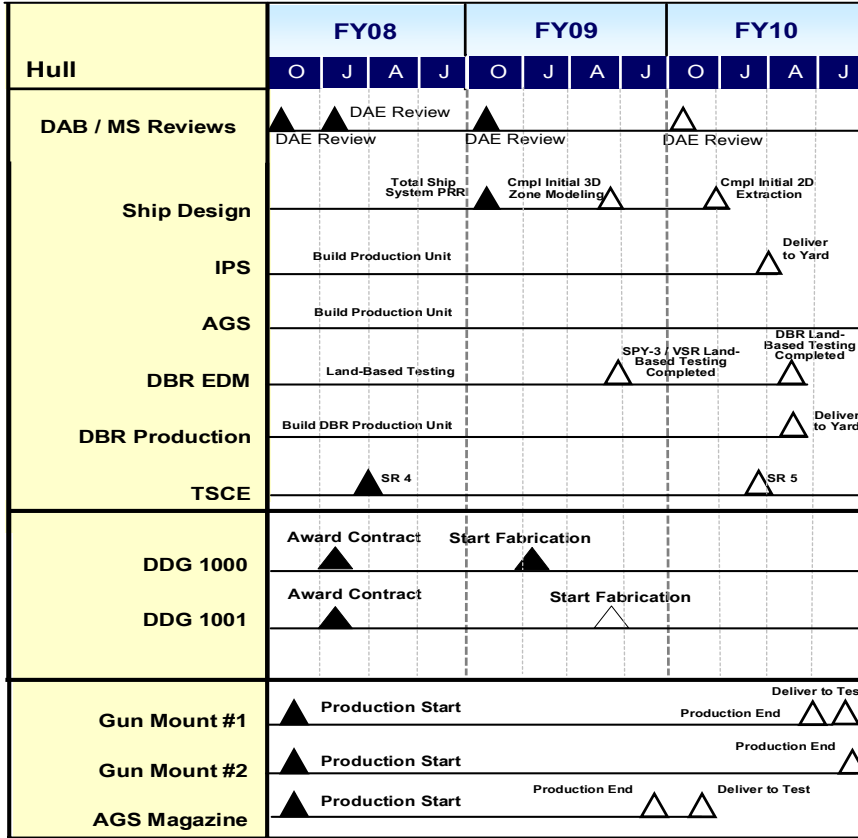
CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000			PROJECT NUMBER AND NAME 2464/DD(X) Sys Design, Dev & Integration			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Software Release SR5				2Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000			PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	0.000	112.071				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: These funds provide for the development of the Advanced Gun System (AGS) and the development, qualification and initial production of the Long Range Land Attack Projectile (LRLAP) associated with the development of DDG 1000. 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. System Design and Development began in FY06 with final land based qualification testing planned in FY 10. The Long Range Land Attack Projectile (LRLAP) will deliver a high explosive unitary payload with Global Positioning System (GPS) accuracy. Funding for previous years is included in PE 0604300N.							

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION								DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000				PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)			
B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
		FY 2008		FY 2009		FY 2010			
Procurement of Hardware Test Assests		0.000		0.000		1.100			
RDT&E Articles Quantity		0		0		0			
FY10 - Procurement of AGS Qualification test assets.									
		FY 2008		FY 2009		FY 2010			
System Engineering, Development and Testing		0.000		0.000		45.638			
RDT&E Articles Quantity		0		0		0			
FY10 - LRLAP System Design, Development and qualification testing.									
		FY 2008		FY 2009		FY 2010			
Procurement of Ordnance Test Assests		0.000		0.000		65.333			
RDT&E Articles Quantity		0		0		0			
FY10- Procurement of LRLAP rounds for qualification testing.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name	FY 2008	FY 2009	FY 2010						Total Cost
BLI 211900 / SCN	2,906.867	1,504.297	1,084.161						5,495.325
BLI 5300/SCN	0.000	0.000	309.636						309.636
PE 0604300N/ RDT&E,N	622.812	596.109	0.000						1,218.921
D. ACQUISITION STRATEGY: The funding in this program element supports the DDG 1000/DDG 1001 dual lead ship acquisition strategy.									
E. 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:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000						PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date				Total Cost (\$000)	Target Value of Contract
Primary Hardware Development	CPAF	BAE/Lockheed Martin	0.000	0.000		101.271	DEC-09				101.271	0.000
Subtotal Product Development			0.000	0.000		101.271					101.271	0.000
Remarks:												
Subtotal Support Costs			0.000	0.000		0.000					0.000	0.000
Remarks:												
Test & Evaluation	Various	Various	0.000	0.000		1.500	DEC-09				1.500	0.000
Subtotal Test and Evaluation			0.000	0.000		1.500					1.500	0.000
Remarks:												
Contractor Engineering Support	Various	Other Contractors	0.000	0.000		0.552	DEC-09				0.552	0.000
Government Engineering Support	WX	NSWC DD Dahlgren VA	0.000	0.000		3.208	DEC-09				3.208	0.000
Government Engineering Support	WX	NSWC PHD Pt Hueneme CA	0.000	0.000		3.590	DEC-09				3.590	0.000
Government Engineering Support	WX	Other Gov't Activities	0.000	0.000		1.950	DEC-09				1.950	0.000
Subtotal Management Services			0.000	0.000		9.300					9.300	0.000
Remarks:												
Total Cost			0.000	0.000		112.071					112.071	0.000

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000	PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)	



Key	
PDR	Preliminary Design Review
CDR	Critical Design Review
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
PRR	Production Readiness Review
SR	Software Release
▲	Completed Event

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0204202N/DDG-1000			PROJECT NUMBER AND NAME 4009/Advanced Gun System (AGS) on DD(X)		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Build Gun Mount #1 (GM #1)		1-4Q	1-4Q	1Q-3Q			
Deliver for Test (GM #1)				4Q			
Build Gun Mount #2 (GM # 2)		1-4Q	1-4Q	1-4Q			
Deliver for Test (Mag #1)				1Q			
NOTE: FY 08 and FY 09 Funding is in PE 0604300N. Dates were entered into this R-4a exhibit. (PE 0604300N did not require a R-4/R-4a exhibits.)							

Exhibit R-2, RDT&E Budget Item Justification				DATE: May 2009			
Appropriation/Budget Activity RDT&E, N / BA 5				R-1 Item Nomenclature: 0304785N Tactical Cryptologic Systems			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	38.262	18.228	19.016				
Shipboard Information Warfare (IW) Exploit / 2134	21.100	12.607	18.514				
Automatic Identification System (AIS) / 3165	15.615	4.025	0.502				
Congressional Adds/ 9999	1.547	1.596	0.000				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard Information Warfare (IW) line includes the Ships Signal Exploitation Equipment (SSEE) program and the Program of Record (POR) that executes a major component of the Maritime Cryptologic Systems for the 21st Century (MCS 21). These systems provide the battle group and Combatant Commanders with the surfaces Fleets only Information Operations (IO) non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time Indications and Warnings (I&W) by acquisition ("Find") and localization ("Fix") of Signals of Interest (SOI). This program's funding is required to incorporate Pre-Planned Product Improvements (P3I), new Commercial Off-the-Shelf (COTS) based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic IO capabilities and net-centric Service Oriented Architecture (SOA), which includes the development, integration and test of "Mockingbird/Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations Executive Board (CEB) IO Countermeasure Red Flash" (classified description) and Paragon (Frequency Extension/Targeting Enhancement). The SSEE program is a classified IW / IO and tactical cryptologic system that subsequently provides critical tactical intelligence, situational awareness/Battlespace Awareness (BA), I&W, and hostile threat assessment. As a spiral acquisition program, RDT&E funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as P3I upgrades into the system's hardware/software configuration. Automatic Identification System (AIS), Increment 1 and 2, 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), and 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. Funding will support the integration of Commercial Off-The-Shelf (COTS) AIS equipment with the existing Global Command and Control - Maritime/Common Operational Picture (GCCS-M/COP), navigation and bridge display capabilities, surface search / weapons systems and intelligence / Cryptologic capabilities. Congressional Adds: ANS/SSQ-137(V) SSEE supports the effort to develop the latest P3I enhancements upgrades to maintain the IW / IO systems operational capability against evolving modern and future digital communications signals. P3I technology upgrades include: development of Communications Intelligence (COMINT) mapping and task synchronization; development of Time Differential Multiplexing (TDM) and Networked High Frequency (HF)/ Direction Finding (DF) capability; and Radio Frequency Distribution Unit (RFDU) enhancements. These upgrades will improve SSEE Increment E and F capability to collect, process and analyze hostile threat communications emitters in order to provide precision IW / IO capabilities and subsequent tactical intelligence, situational awareness, I&W, and hostile threat assessment to deployed Carrier Strike Group (CSG)/Expeditionary Strike Group (ESG) forces. PARAGON System Updates is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE Inc E/F programs. This capability will provide simultaneous detection, collection, processing, IO and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today.							

Exhibit R-2, Budget Item Justification

Exhibit R-2, Budget Item Justification

Exhibit R-2a, RDT&E Project Justification							DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 5				Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Shipboard Information Warfare (IW) Exploit / 2134	21.100	12.607	18.514					
RDT&E Articles Qty	2							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The IW line includes the SSEE program and the POR that executes a major component of the Maritime Cryptologic Systems for the 21st Century (MCS 21). These systems provide the battle group and Combatant Commanders with the surfaces fleets only IO non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time IW by acquisition ("Find") and localization ("Fix") of SOI. This program's funding is required to incorporate P3I, new COTS based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic IO capabilities and net-centric SOA, which includes the development, integration and test of "Mockingbird/Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations Executive Board (CEB) IO Countermeasure Red Flash" (classified description) and Paragon (Frequency Extension/Targeting Enhancement). Paragon is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE Inc E/F programs. This capability will provide simultaneous detection, collection, processing, IO and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today.

The Ships Signal Exploitation Equipment (SSEE) program is a classified IW/IO and tactical cryptologic system that subsequently provides critical tactical intelligence, situational awareness/BA, I&W, and hostile threat assessment. As a spiral acquisition program, RDT&E funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as P3I upgrades into the system's hardware/software configuration.

FY10 funding will incorporate P3I, new COTS based technologies and software into the existing systems. Funding will also focus on developing and delivering IO capabilities and net-centric SOA, which includes the development, integration and test of "Mockingbird/Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations Executive Board (CEB) IO Countermeasure Red Flash" (classified description) and Paragon (Frequency Extension/Targeting Enhancement).

Exhibit R-2a, Project Justification

Exhibit R-2a, RDT&E Project Justification				DATE: May 2009
Appropriation/Budget Activity RDT&E, N / BA 5			Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134	
B. Accomplishments/Planned Program				
Ship Signal Exploitation Equipment (SSEE) Inc E	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	3.409	1.974	1.739	
RDT&E Articles Quantity				
FY08 - Continued to expand Signals of Interest (SOI) processing capability to allow collection of the newest high priority modern technology threat signals for processing and analysis for timely and accurate situational awareness for force protection and for support to time critical strike military operation. Developed and integrated upgrades to Hostile Force Integration Targeting Subsystems (HITS) to integrate both national and tactical Intelligence, Surveillance, and Reconnaissance (ISR) sensor data to provide geolocation of intercepted communication signals. Fully tested improved software. FY09 - Continue to expand SOI processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated Information Operation (IO) / non-kinetic, and processing and analysis capabilities. Development and integration of Cryptologic Unified Build (CUB) software to support battlegroup interoperability. Continue to develop and integrate upgrade to HITS to integrate both national and tactical ISR sensors for new and emerging SOI. Fully test improved software. Continue Follow-on Test and Evaluation (FOT&E). FY10 - Continue to expand SOI processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO / non-kinetic, and processing and analysis capabilities. Development and integration of CUB software to support battlegroup interoperability. Continue to develop and integrate upgrade to HITS to integrate both national and tactical ISR sensors for new and emerging SOI. Fully test improved software.				

Exhibit R-2a, Project Justification

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009	
Appropriation/Budget Activity RDT&E, N / BA 5		Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134	
B. Accomplishments/Planned Program			
Ship Signal Exploitation Equipment (SSEE) Inc F	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	17.691	10.633	16.775
RDT&E Articles Quantity	2		
FY08 - Continued SSEE Inc F development and system design and integration test and producing Engineering Development Models (EDMs). Continued development efforts for remoting of manned and unmanned platforms. Continued development in the areas of signal recognition, suitability, and Net-Centric Enterprise Solutions for Interoperability (NCESI). Conducted EDM interoperability testing, platform integration efforts, and operational assessment. FY09 - Continue SSEE Inc F development and system design EDMs. Integrate, test and deliver EDMs. Continue development efforts for remoting of manned and unmanned platforms. Continue development in the areas of signal recognition, suitability, and NCESI. Conduct EDM interoperability testing, platform integration efforts, and operational assessment. The majority of technical publication development will commence during this period as well. Complete engineering and management data. Continue development efforts for remoting and evolving NCESI/Service Oriented Architecture (SOA) and services. FY10 - Expand Signals of Interest (SOI) processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated Information Operation (IO) / non-kinetic capabilities for support to time critical military strike operation and subsequent processing and analysis capabilities for timely and accurate situational awareness for force protection. Funding will focus on developing and delivering IO capabilities and Net-Centric Service Oriented Architecture (SOA) including development integration and test of "Mockingbird/Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare Chief of Naval Operations Executive Board (ASW CEB) IO Countermeasure Red Flash" (program details classified), and Paragon (Frequency Extension/Targeting Enhancement) for integration into SSEE Inc F.			

Exhibit R-2a, Project Justification

Exhibit R-2a, RDT&E Project Justification				DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 5			Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134		
C. Other Program Funding Summary:					
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>		
OPN Line Item 2360, Shipboard IW Exploit	61.452	94.172	105.883		
D. Acquisition Strategy:					
Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to a Prime Contractor and SPAWAR Systems Center (SSC) - Charleston, SSC - San Diego and miscellaneous contractors, with management oversight by SPAWAR.					
E. Major Performers:					
N/A					

Exhibit R-2a, Project Justification

Exhibit R-3, RDT&E Project Cost Analysis								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA 5			Program Element 0304785N					Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134				
Cost Categories	Contract Method & Type	Performing Activity and Location	Total PY Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Development	Various	Various	68.764	4.631	11/08							
Ancillary Hardware Development												
Systems Engineering	Various	Various	19.621	1.141	11/08	3.692	11/09					
Training Development	WX	SSC SD	0.491	0.086	11/08	0.899	11/09					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			88.876	5.858		4.591						
Remarks:												
Development Support												
Software Development	Various	Various	35.114	4.375	11/08	7.632						
Training Development				0.079	11/08							
Integrated Logistics Support	Various	Various	1.353	0.339	11/08	0.514						
Configuration Management	WX	SSC CH	0.760	0.251	11/08	0.325						
Technical Data			0.264			0.278						
GFE												
Subtotal Support			37.491	5.044		8.749						
Remarks:												

Exhibit R-3, Project Cost Analysis

Exhibit R-3, RDT&E Project Cost Analysis (page 2)								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA 5			Program Element 0304785N					Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134				
Cost Categories	Contract Method & Type	Performing Activity and Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	Various	Various	6.544	0.100	11/08	0.731	11/09					
Operational Test & Evaluation	WX	OPTEVFOR	2.060	0.331	11/08	0.400	11/09					
Live Fire Test & Evaluation												
Test Assets	WX	SSC SD	1.747									
Tooling												
GFE												
Subtotal T&E			10.351	0.431		1.131						
Remarks:												
Contractor Engineering Support						0.933						
Government Engineering Support						2.040	10/09					
Program Management Support	Various	Various	14.596	1.015	11/08	0.600	10/09					
Travel	DTS	SPAWAR	0.841	0.259	11/08	0.470						
Subtotal Management			15.437	1.274		4.043						
Remarks:												
Total Cost			152.155	12.607		18.514						
Remarks: 1. PY funding reflects PE 0604721N. Funding moved to PE 0304785N starting in FY07.												

Exhibit R-3, Project Cost Analysis

Exhibit R-4, RDT&E Program Schedule Profile																DATE: May 2009																
Appropriation/Budget Activity RDT&E, N / BA 5								Program Element Name and Number 0304785N Tactical Cryptologic Systems								Project Name and Number Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Inc E)																
Fiscal Year	2008				2009				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				
Acquisition Milestones													△																			
													FOC																			
FRP Baseline SW Development																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones																																
FRP FY 08 SSEE Inc E																																
FRP FY 09 SSEE Inc E																																
Procurements																																
Remarks:																																
1/ Follow-on Test and Evaluation (FOT&E) moved from FY08 4QTR to FY09 2QTR due to LHD ship availability.																																

Exhibit R-4, Program Schedule Profile

Exhibit R-4a, RDT&E Program Schedule Detail					DATE: May 2009			
Appropriation/Budget Activity	Program Element Name and Number				Project Name and Number			
RDT&E, N / BA 5	0304785N Tactical Cryptologic Systems				Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Inc E)			
Schedule Profile	FY 2008	FY 2009	FY 2010					
SSEE Inc E								
Full Operational Capability (FOC)			4Q					
Follow-On Test & Evaluation (FOTE)		2Q						
Full Rate Production (FRP)	1-4Q	1-4Q						
Pre-Planned Improvements (P3I)	1-4Q	1-4Q						
Remarks:								

Exhibit R-4a, Program Schedule Detail

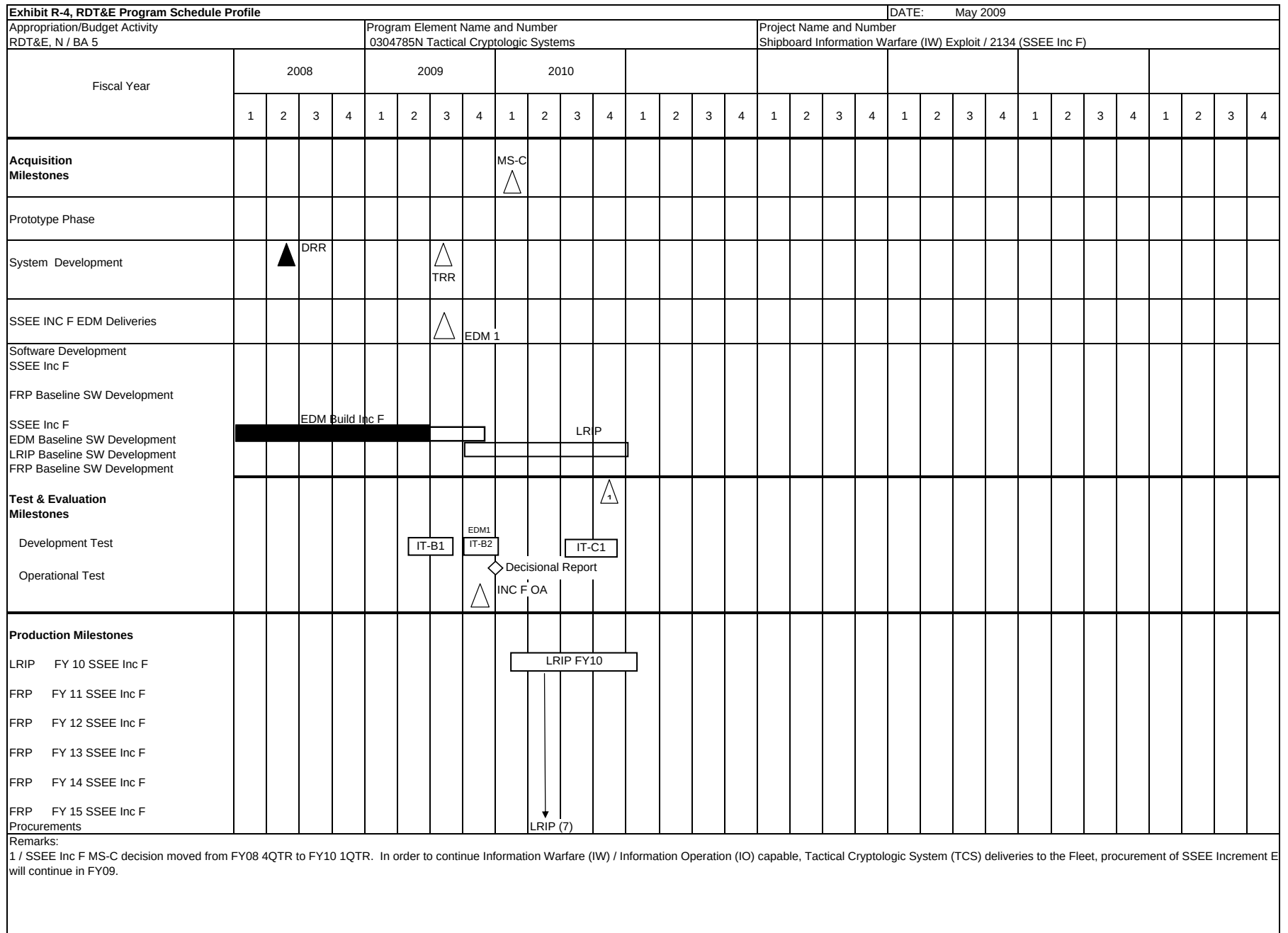


Exhibit R-4a, Program Schedule Detail

Exhibit R-2, RDT&E Budget Item Justification							DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 5				Project Name and Number Automatic Identification System (AIS) / 3165				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Automatic Identification System (AIS) / 3165	15.615	4.025	0.502					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Automatic Identification System (AIS), Increment 1 and 2, 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), and 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. Funding will support the integration of Commercial Off-The-Shelf (COTS) AIS equipment with the existing Global Command and Control - Maritime/Common Operational Picture (GCCS-M/COP), navigation and bridge display capabilities, surface search / weapons systems and intelligence / Cryptologic capabilities.

The warfighting enhancement in FY08 was to achieve an all-source Maritime Domain Awareness (MDA) capability. The Chief of Naval Operations (CNO) endorsed requirements for an unclassified (a) shipboard track management and (b) operational and tactical aggregation services capability for AIS data, organic shipboard sensors (including radar and Electronic Optical (EO)/ Infrared (IR)), and airborne surface search radar. This capability must be exportable to those countries that have the capability to participate in MDA, with minimum additional manning and technical expertise. Finally, cross domain solutions that provide multi-layer security while allowing access to information across classified domains is needed to complete the fusion of AIS data with other data sources. This effort enhances current capability in two diverse areas: (a) improves situational awareness, navigation and safety of ship by fusing AIS data with organic ship sensors (and airborne radars), and (b) provides a cross domain solution for integration of AIS data with other forms of unclassified data from a variety of platforms (including classified domains).

Funding in FY10 will support Developmental Testing (DT), Operational Assessment (OA), and Initial Operational Test and Evaluation (IOT&E) for Increment 2 configurations for ship, submarines and shore sites that incorporate new AIS interoperability requirements, such as AIS Consolidated Afloat Networks and Enterprise Services (CANES) configuration and AIS interoperability with the Maritime Security and Safety Information System (MSSIS). Funds will also continue the refinement of the Global AIS architecture, and its relation to the overall USN MDA effort and CONOP as well as the National MDA CONOP. This will provide a secure end-to-end AIS data sharing capability in-line with National MDA CONOPs.

Exhibit R-2, Budget Item Justification

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009	
Appropriation/Budget Activity RDT&E, N / BA 5		Project Name and Number Automatic Identification System (AIS) / 3165	
B. Accomplishments/Planned Program			
Automatic Identification System (AIS)	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	15.615	4.025	0.502
RDT&E Articles Quantity			
FY08 - Efforts included designing and developing the Engineering Change Proposal (ECP) to the unclassified Maritime Domain Awareness (MDA) Community of Interest (COI) Data Sharing (DS) pilot effort Automatic Identification System (AIS) Increment (Inc) 2 implementation. Further defined the global AIS architecture, and its relation to emerging United States Navy (USN) and National MDA Concept of Operations (CONOP). The warfighting enhancement funded the integration of Commercial Off-The-Shelf (COTS) AIS equipment into unmanned aerial systems (b) implementation of Government off-the-shelf (GOTS) software on USN ships (c) for aggregation of fused track management data, and (d) for acceleration and transition of cross-domain solutions. FY09 - Funds will design and develop a Net-Centric Enterprise Solution (NCES)-compliant AIS Inc 2, within a service oriented architecture (SOA). Additionally, funds will consolidate and streamline data sharing between the USN/Department of Defense (DoD) AIS capability and other agencies, such as the Department of Transportation emerging Maritime Security and Safety Information System (MSSIS). Funds will also continue the refinement of the Global AIS architecture, and its relation to the overall USN MDA effort and CONOP as well as the National MDA CONOP. This will provide a secure end-to-end AIS data sharing capability in-line with National MDA CONOPs and current DoD guidance and policies. FY10 - Funds will support developmental testing (DT) and operational assessment (OA) of AIS Inc 2 configurations for ship, submarines and shore sites that incorporate new AIS interoperability requirements, such as AIS Consolidated Afloat Networks and Enterprise Services (CANES) configuration and AIS interoperability with the MSSIS. Funds will also continue the refinement of the Global AIS architecture, and its relation to the overall USN MDA effort and CONOP as well as the National MDA CONOP.			

Exhibit R-2a, Project Justification

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
Appropriation/Budget Activity RDT&E, N / BA 5	Project Name and Number Automatic Identification System (AIS) / 3165		
C. Other Program Funding Summary:			
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
OPN Line Item 2360, Shipboard IW Exploit	61.452	94.172	105.883
D. Acquisition Strategy:			
Acquisition management and contracting strategies are to support the integration of Commercial Off-The-Shelf (COTS) Automatic Identification System (AIS) data into the existing and emerging United States Navy (USN) Command and Control and Network infrastructure capabilities, Navigation Sensor System Interface (NAVSSI) navigation and bridge capabilities surface search/weapons systems and intelligence/cryptologic capabilities. COTS will be procured from a contractor with government oversight from Space and Naval Warfare (SPAWAR) Systems Center (SSC) - Charleston, SSC - San Diego with management oversight by SPAWAR .			
E. Major Performers:			
N/A			

Exhibit R-2a, Project Justification

Exhibit R-3, RDT&E Prohect Cost Analysis								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA 5		Program Element 0304785N						Project Name and Number Automatic Identification System (AIS) / 3165				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Development	Various	Various	0.500									
Ancillary Hardware Development	CPFF	CSIC	0.730									
Systems Engineering	WX	SSC SD	1.000									
Training Development	WX	SSC SD	0.200									
Subtotal Product Development			2.430			0.000						
Remarks:												
Development Support												
Software Development	Various	Various	13.303	1.525	11/08							
Training Development	WX	SSC SD	0.500	0.300	11/08							
Integrated Logistics Support	Various	Various	0.700	0.300	11/08							
Configuration Management	Various	Various	0.500	0.300	11/08							
Technical Data	Various	Various		0.225	11/08							
Subtotal Support			15.003	2.650		0.000						
Remarks:												

Exhibit R-3, Project Cost Analysis

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA 5		Program Element 0304785N						Project Name and Number Automatic Identification System (AIS) / 3165				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental Test & Evaluation	WX	SSC SD	0.304			0.393	11/09					
Operational Test & Evaluation	Various	Various	0.130	0.400	11/08							
Subtotal T&E			0.434	0.400		0.393						
Remarks:												
Contractor Engineering Support	Various	Various	0.200	0.300	11/08							
Government Engineering Support	Various	Various	0.100	0.300	11/08	0.099	11/09					
Program Management Support	Various	Various	0.301	0.300	11/08							
Travel			0.140	0.075	11/08	0.010	11/09					
Subtotal Management			0.741	0.975		0.109						
Remarks:												
Total Cost			18.608	4.025		0.502						
Remarks:												

Exhibit R-4, RDT&E Program Schedule Profile													DATE: May 2009																									
Appropriation/Budget Activity RDT&E, N / BA 5													Program Element Name and Number 0304785N Tactical Cryptologic Systems													Project Name and Number Automatic Identification System (AIS) / 3165												
Fiscal Year	2008				2009				2010																													
	1	2	3	4	1	2	3	4	1	2	3	4																										
Acquisition Milestones			◆ ADM Phase 1A & 2B		◆ ACAT IVT Designation								◇ INCR 2 MS-C /LRIP																									
JCIDS Documentation	◆ INCR 1 IA Strategy		◆ INCR 1 CPD		◆ NCR 1 Acq. Strategy			◇ INCR 2 CPD	◇ TEMP																													
Test & Evaluation Milestones									◇ OTRR	◇ INCR 2 DT-A	◇ INCR 2 OA																											
Deliveries																																						
Remarks: 1/ The AIS program, initiated as a Rapid Deployment Capability (RDC) was designated an ACAT IVT Program of Record by PEO C4I ACAT Designation Letter dated 24 Dec 08. PEO C4I ADM of 31 Dec 08 stated that the the AIS program be executed in two increments. Increment 1, encompassing the effort initiated under the RDC, was granted Full Rate Production (FRP). Increment 2, which will continue to develop, test and field new AIS variants for ships, submarines and shore sites, was authorized to execute pre-MS-C activities. The new Increment 2 schedule reflects extended time needed for approval of an Increment 2 Capability Production Document (CPD) and Test & Evaluation Master Plan (TEMP) documentation prior to Initial Operational Test & Evaluation (IOT&E) and Milestone C (MS-C).																																						

Exhibit R-4, Program Schedule Profile

Exhibit R-4a, Program Schedule Detail

Exhibit R-2a, RDT&E Project Justification				DATE: May 2009
Appropriation/Budget Activity RDT&E, N / BA 5			Project Name and Number Various Congressional Adds	
B. Accomplishments/Planned Program				
ANS/SSQ-137(V) Ships Signal Exploitation Equipment	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	1.547	0.000	0.000	
RDT&E Articles Quantity				
FY08 - ANS/SSQ-137 (v) Ships Signal Exploitation Equipment (SSEE) - ANS/SSQ supported efforts to develop the latest Pre-Planned Product Improvements (P3I) enhancements upgrades to maintain the Information Warfare (IW) / Information Operation (IO) systems operational capability against evolving modern and future digital communications signals. P3I technology upgrades included; development of Communications Intelligence (COMINT) mapping and task synchronization, development Time Differential Multiplexing (TDM) and Networked High Frequency (HF)/ Direction Finding (DF) capability, and Radio Frequency Distribution Unit (RFDU) enhancements. These upgrades improved SSEE Increment E and F capability to collect, process and analyze hostile threat communications emitters in order to provide precision IW / IO / non-kinetic capabilities and subsequent tactical intelligence, Situational Awareness (SA), indications and warning, and hostile threat assessment to deployed Carrier Strike Group (CSG)/Expeditionary Strike Group (ESG) forces.				
Paragon System Updates	FY08	FY09	FY10	
Accomplishments/Effort/Subtotal Cost	0.000	1.596	0.000	
RDT&E Articles Quantity				
FY09 - PARAGON system updates is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE Inc E/F programs. This capability will provide simultaneous detection, collection, processing, IO and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today.				

Exhibit R-2a, Project Justification