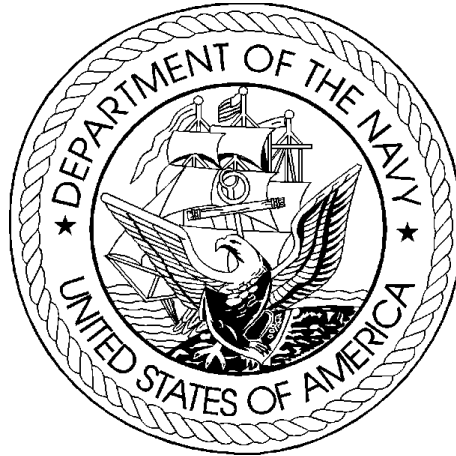


DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2010
BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES
MAY 2009

RESEARCH, DEVELOPMENT, TEST &
EVALUATION, NAVY
BUDGET ACTIVITY 7

Page Intentionally Blank

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.

Page Intentionally Blank

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 -----
Operational Systems Development	4,126,175	4,631,071	4,302,584	90,180	4,392,764
Total Research, Development, Test & Eval, Navy	4,126,175	4,631,071	4,302,584	90,180	4,392,764
Summary Recap of FYDP Programs -----					
Strategic Forces	136,061	163,337	160,611		160,611
General Purpose Forces	1,085,088	997,168	1,202,330		1,202,330
Intelligence and Communications	1,234,800	1,510,483	1,296,330	57,900	1,354,230
Research and Development	196,415	343,105	311,204		311,204
Central Supply and Maintenance	92,918	74,685	74,091		74,091
Classified Programs	1,380,893	1,542,293	1,258,018	32,280	1,290,298
Total Research, Development, Test & Eval, Navy	4,126,175	4,631,071	4,302,584	90,180	4,392,764

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:16:30

PAGE N-1

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.

UNCLASSIFIED

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 -
158	0604227N	HARP00N Modifications	07	42,495	68,029				U
159	0604402N	Unmanned Combat Air Vehicle (UCAV) Advanced Component and Prototype Development	07	153,920	275,076	311,204		311,204	U
160	0101221N	Strategic Sub & Weapons System Support	07	64,292	78,561	74,939		74,939	U
161	0101224N	SSBN Security Technology Program	07	32,210	34,039	34,479		34,479	U
162	0101226N	Submarine Acoustic Warfare Development	07	3,923	7,364	7,211		7,211	U
163	0101402N	Navy Strategic Communications	07	35,636	43,373	43,982		43,982	U
164	0203761N	Rapid Technology Transition (RTT)	07	38,796	34,371	39,125		39,125	U
165	0204136N	F/A-18 Squadrons	07	43,047	73,424	127,733		127,733	U
166	0204152N	E-2 Squadrons	07	18,969	53,949	63,058		63,058	U
167	0204163N	Fleet Telecommunications (Tactical)	07	23,137	26,528	37,431		37,431	U
168	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	14,633	18,155	13,238		13,238	U
169	0204311N	Integrated Surveillance System	07	30,743	28,677	24,835		24,835	U
170	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	1,789	2,319	2,324		2,324	U
171	0204571N	Consolidated Training Systems Development	07	14,824	27,582	49,293		49,293	U
172	0204574N	Cryptologic Direct Support	07	1,434	1,437	1,609		1,609	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:16:30

PAGE N-2

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.

UNCLASSIFIED

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 -
173	0204575N	Electronic Warfare (EW) Readiness Support	07	34,959	24,209	37,524		37,524	U
174	0205601N	HARM Improvement	07	70,053	33,835	30,045		30,045	U
175	0205604N	Tactical Data Links	07	5,109	4,226	25,003		25,003	U
176	0205620N	Surface ASW Combat System Integration	07	16,478	22,459	41,803		41,803	U
177	0205632N	MK-48 ADCAP	07	19,720	26,169	28,438		28,438	U
178	0205633N	Aviation Improvements	07	95,667	99,986	135,840		135,840	U
179	0205658N	Navy Science Assistance Program	07	5,843	3,615	3,716		3,716	U
180	0205675N	Operational Nuclear Power Systems	07	71,264	71,382	72,031		72,031	U
181	0206313M	Marine Corps Communications Systems	07	347,524	289,060	287,348		287,348	U
182	0206623M	Marine Corps Ground Combat/Supporting Arms Systems	07	80,487	119,054	120,379		120,379	U
183	0206624M	Marine Corps Combat Services Support	07	124,955	9,620	17,057		17,057	U
184	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07			30,167		30,167	U
185	0207161N	Tactical AIM Missiles	07	4,808	6,661	2,298		2,298	U
186	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	2,496	8,533	3,604		3,604	U
187	0208058N	Joint High Speed Vessel (JHSV)	07	18,353	11,917	8,431		8,431	U
192	0303109N	Satellite Communications (SPACE)	07	715,169	651,252	474,009		474,009	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:16:30

PAGE N-3

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.

UNCLASSIFIED

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 -
193	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07			45,513		45,513	U
194	0303140N	Information Systems Security Program	07	32,494	33,639	24,226		24,226	U
195	0303158M	Joint Command and Control Program (JC2)	07	1,242	1,987	2,453		2,453	U
196	0303158N	Joint Command and Control Program (JC2)	07	4,620	4,127	4,139		4,139	U
197	0305149N	COBRA JUDY	07	131,836	100,816	62,061		62,061	U
198	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	07	4,550	8,182	28,094		28,094	U
199	0305192N	Military Intelligence Program (MIP) Activities	07	8,949	4,578	4,600		4,600	U
200	0305204N	Tactical Unmanned Aerial Vehicles	07	66,819	51,677	8,971		8,971	U
201	0305205N	Endurance Unmanned Aerial Vehicles	07	111,283	432,487				U
202	0305206N	Airborne Reconnaissance Systems	07	70,175	66,339	46,208		46,208	U
203	0305207N	Manned Reconnaissance Systems	07	50,754	28,671	22,599	51,900	74,499	U
204	0305208N	Distributed Common Ground/Surface Systems	07	21,141	44,341	18,079		18,079	U
205	0305220N	RQ-4 UAV	07			465,839		465,839	U
206	0305231N	MQ-8 UAV	07			25,639		25,639	U
207	0305232M	RQ-11 UAV	07			553		553	U
208	0305233N	RQ-7 UAV	07			986		986	U

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:16:30

PAGE N-4

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.

UNCLASSIFIED

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
--	-----	----	---	-----	-----	-----	-----	-----	-
209	0305234M	Small (Level 0) Tactical UAS (STUASL0)	07			18,763		18,763	U
210	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07			23,594	6,000	29,594	U
211	0307207N	Aerial Common Sensor (ACS)	07	8,164	74,402				U
212	0307217N	EP-3E Replacement (EPX)	07			11,976		11,976	U
213	0308601N	Modeling and Simulation Support	07	7,604	7,985	8,028		8,028	U
214	0702207N	Depot Maintenance (Non-IF)	07	20,943	11,100	14,675		14,675	U
215	0702239N	Avionics Component Improvement Program	07	1,588	1,872	2,725		2,725	U
216	0708011N	Industrial Preparedness	07	56,862	61,713	56,691		56,691	U
217	0708730N	Maritime Technology (MARITECH)	07	13,525					U
9999	9999999999	Classified Programs		1,380,893	1,542,293	1,258,018	32,280	1,290,298	U
		Operational Systems Development		4,126,175	4,631,071	4,302,584	90,180	4,392,764	
		Total Research, Development, Test & Eval, Navy		4,126,175	4,631,071	4,302,584	90,180	4,392,764	

Exhibit R-1Q: FY 2010 Base and Overseas Contingency Operations (OCO) Request, as of May 5, 2009 at 14:16:30

PAGE N-5

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.

UNCLASSIFIED

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				
158	0101221N	Strategic Sub & Wpns Sys Supt	07	-24	U
159	0101224N	SSBN Security Tech Program	07	-1	U
160	0101226N	Submarine Acoustic War Dev	07	-6	U
161	0101402N	Navy Strategic Comms	07	-77	U
162	0203761N	Rapid Technology Transition (RTT)	07	-45	U
163	0204136N	F/A-18 Squadrons	07	-374	U
164	0204152N	E-2 Squadrons	07	-115	U
165	0204163N	Fleet Tactical Development	07	-1	U
166	0204229N	Tomahawk Mssn Planning Ctr	07	-23	U
167	0204413N	Amphibious Tactical Supt Units	07	-3	U
168	0204571N	Consolidated Trng Sys Dev	07	-77	U
170	0204575N	Elect Warfare Readiness Supt	07	-3	U
171	0205601N	Harm Improvement	07	-167	U
173	0205620N	Surface ASW Cmbt Sys Integr	07	-18	U
174	0205632N	MK-48 ADCAP	07	-46	U
176	0205633N	Aviation Improvements	07	-570	U
177	0205658N	Navy Science Assistance Progr	07	-6	U
178	0206313M	Marine Corps Comms Systems	07	-346	U
179	0206623M	MC Ground Cmbt Spt Arms Sys	07	-47	U
181	0207161N	Tactical Aim Missiles	07	-32	U
182	0207163N	AMRAAM	07	-24	U
185	0208058N	Joint High Speed Vessel (JHSV)	07	-7	U
186	0303109N	Satellite Communications (Space)	07	-25	U

UNCLASSIFIED

UNCLASSIFIED

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				S
No	Element	Item	Act	FY 2009	E
	Number			C	
187	0305149N	Cobra Judy	07	-2	U
192	0305204N	Tactical Unmanned Aer Vehicles	07	-89	U
197	0305205N	Endurance Unmanned Aer Veh	07	-686	U
200	0305206N	Airborne Reconnaissance Sys	07	-66	U
201	0305208N	Distributed Common Ground Sys	07	-119	U
202	0307207N	Aerial Common Sensor (JMIP)	07	-172	U
204	0604227N	Harpoon Modifications	07	-184	U
211	0604402N	Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev	07	-362	U
214	0702207N	Depot Maintenance (NON-IF)	07	-7	U
215	0702239N	Avionics Component Improvement Program	07	-1	U
216	0708011N	Industrial Preparedness	07	-20	U
	Total Research, Development, Test & Eval, Navy (BA 07)			-3745	

UNCLASSIFIED

Page Intentionally Blank

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0604227N, HARPOON MODIFICATIONS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	42.495	67.845						
1843 Harpoon Block III	42.495	67.845						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Harpoon Block III Weapons System was intended to upgrade and expand the capabilities of the Navy's only anti-ship, all weather missile to improve its precision in a congested, littoral environment. Modification of the RGM-84D and AGM-84D Harpoon 1C baseline missile will provide for Global Positioning System (GPS) accuracy, target selectivity in a littoral environment, and in-flight target position update solutions as well as positive terminal control. It would possess total organic capability (i.e. Autonomous Surface Group capability). Specific improvements would provide for significant target discrimination as well as minimized target-to-shore separation capability, Battle Hit Indications (BHI), connectivity with future network architecture, and Land Blanking capability. Harpoon Block III would provide for a concept of operations which will support existing Intelligence, Surveillance and Reconnaissance (ISR) Platform target detection and target/weapon position update (i.e. UAV, Helo, Fixed wing).

The Department of the Navy has directed the cancellation of the Harpoon Blk III program via Acquisition Decision Memorandum dated 14 April 2009. Assistant Secretary of the Navy for Research Development and Acquisition directed the use FY-09 funds to execute an orderly program cancellation and fund external program linkages cost share commitments (F/A-18 H8E Operational Flight Program (OFP), Next Generation Command and Control Processor (NGC2P) and Strike Common Weapon Data Link (SCWDL)) Additionally, PEO(U&W) was directed to coordinate with OPNAV N4 to resource those tasks required to ensure Harpoon Block IC sustainment of current fleet readiness. Air Harpoon Shipping Container (MK607) has been identified as a degrader to current fleet readiness due to a moisture intrusion problem which has resulted in the total loss of 30 missiles since 1998.

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0604227N, HARPOON MODIFICATIONS

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	42.547	68.214	33.317
Current BES	42.495	67.845	0.000
Total Adjustments	-0.052	-0.369	-33.317
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.184	
SBIR/STTR/FTT Assessments	-0.052		
Program Adjustments			-33.306
Rate/Misc Adjustments		-0.185	-0.011
Subtotal	-0.052	-0.369	-33.317

Schedule:

The Department of the Navy has directed the cancellation of the program via an Acquisition Decision Memorandum dated 14 April 2009.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0604227N, HARPOON MODIFICATIONS			PROJECT NUMBER AND NAME 1843, HARPOON BLOCK III			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
1843 Harpoon Block III	42.495	67.845						
RDT&E Articles Qty	12							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Harpoon Block III Weapons System was intended to upgrade and expand the capabilities of the Navy's only anti-ship, all weather missile to improve its precision in a congested, littoral environment. Modification of the RGM-84D and AGM-84D Harpoon 1C baseline missile will provide for Global Positioning System (GPS) accuracy, target selectivity in a littoral environment, and in-flight target position update solutions as well as positive terminal control. It would possess total organic capability (i.e. Autonomous Surface Group capability). Specific improvements would provide for significant target discrimination as well as minimized target-to-shore separation capability, Battle Hit Indications (BHI), connectivity with future network architecture, and Land Blanking capability. Harpoon Block III would provide for a concept of operations which will support existing Intelligence, Surveillance and Reconnaissance (ISR) Platform target detection and target/weapon position update (i.e. UAV, Helo, Fixed wing).

The Department of the Navy has directed the cancellation of the Harpoon Blk III program via Acquisition Decision Memorandum dated 14 April 2009.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0604227N, HARPOON MODIFICATIONS	PROJECT NUMBER AND NAME 1843, HARPOON BLOCK III		
B. Accomplishments/Planned Program				
Surface Harpoon Block III Design/Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	26.205	24.281		
RDT&E Articles Quantity	4			
Surface Harpoon - Funding is for Block III missile and ship kit design, prototype development and fabrication, Missile Guidance Control Unit design and integration, data link and GPS integration and missile Operational Flight Program (OFP) software design and development.				
Air Harpoon Block III Design/Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.188	30.957		
RDT&E Articles Quantity	3			
Air Harpoon - Funding is for Block III missile kit design and development, prototype development and fabrication, Missile Guidance Control Unit design and integration, data link and GPS integration, aircraft OFP software development and integration and missile OFP software design and development.				
Launch Control System Interface Design	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	13.102	12.607		
RDT&E Articles Quantity	5			
Harpoon Shipboard Command Launch Control Set (HSCLCS) interface design. Harpoon Embedded Trainer (HET), Harpoon Operational Tactical Training System (HOTTS), and Harpoon Guided Missile Simulator (HGMS) upgrade development.				
The Department of the Navy has directed the cancellation of the Harpoon Blk III program via Acquisition Decision Memorandum dated 14 April 2009. Assistant Secretary of the Navy for Research Development and Acquisition directed the use FY-09 funds to execute an orderly program cancellation and fund external program linkages cost share commitments (F/A-18 H8E OFP, NGC2P CDLMS 3.8 and SCWDL datalink). Additionally, PEO(U&W) was directed to coordinate with OPNAV N4 to resource those tasks required to ensure Harpoon Block IC sustainment of current fleet readiness.				

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

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-7	0604227N, HARPOON MODIFICATIONS	1843, HARPOON BLOCK III	
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 Department of the Navy has directed the cancellation of the Harpoon Blk III program via Acquisition Decision Memorandum dated 14 April 2009. Assistant Secretary of the Navy for Research Development and Acquisition directed the use FY-09 funds to execute an orderly program cancellation and fund external program linkages cost share commitments (F/A-18 H8E OFP, NGC2P CDLMS 3.8 and SCWDL datalink). Additionally, PEO(U&W) was directed to coordinate with OPNAV N4 to resource those tasks required to ensure Harpoon Block IC sustainment of current fleet readiness.			

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

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-7			0604227N, HARPOON MODIFICATIONS			1843, HARPOON BLOCK III							
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	WX	NAWCWD, China Lake CA	0.903	5.601	11/08								
Aircraft Integration	SS-CPIF	Boeing, St. Louis F/A-18	7.055	8.434	11/08								
Aircraft Integration	SS-CPIF	McDonnell Douglas Corp, St. Louis		7.974	11/08								
Ancillary HDW Development	SS-CPIF	BSC Systems Inc, Reston VA	0.668	0.400	11/08								
Ancillary HDW Development	WX	NAWCWD, China Lake CA	4.206	1.672	11/08								
Primary HDW Development	SS-CPFF	Raytheon	7.869	1.000	11/08								
Primary HDW Development	SS-CPFF	McDonnell Douglas Corp, St. Louis	2.517										
Primary HDW Development	SS-CPFF	McDonnell Douglas Corp, St. Louis	1.334										
Primary HDW Development	SS-CPIF	McDonnell Douglas Corp, St. Louis	9.217	9.402	11/08								
Ship Integration	WX	NSWC Port Hueneme, CA	1.280	1.084	11/08								
Ship Integration	WX	SPAWARSYSCEN, San Diego, CA	0.900	0.525	11/08								
Systems Engineering	WX	NAWCAD, Patuxent River, MD	0.330	0.250	11/08								
Subtotal Product Development			36.279	36.342									
Remarks: Totals might not add due to rounding. Computation of termination costs for Harpoon BLK III are currently being developed.													
DEVELOPMENT SUPPORT													
Software Development	WX	NSWC Indian Head, MD	0.439	0.367	11/08								
Software Development	SS-CPIF	McDonnell Douglas Corp, St. Louis	15.598	12.060	11/08								
Software Development	SS-CPFF	Delex Systems, Inc, Vienna, VA		1.000	11/08								
Integrated Logistic Support	WX	NAWCWD, China Lake, CA	2.041	1.667	11/08								
Development Support	WX	NSWC Dahlgren, Dahlgren VA	0.625	0.350	11/08								
Subtotal Support			18.703	15.444									
Remarks: Totals might not add due to rounding. Computation of termination costs for Harpoon BLK III are currently being developed.													

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0604227N, HARPOON MODIFICATIONS			1843, HARPOON BLOCK III							
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	SS-CPIF	McDonnel Douglas Corp, St. Louis MO	2.263	9.217	11/08								
Developmental Test & Evaluation	WX	NAWCWD, China Lake CA	2.190	1.668	11/08								
Developmental Test & Evaluation	WX	PEO IWS		0.292	11/08								
Developmental Test & Evaluation	WX	NSWC Dahlgren, Dahlgren VA											
Developmental Test & Evaluation	WX	NSWC Port Hueneme CA	0.800	0.705	11/08								
Developmental Test & Evaluation	SS-CPIF	McDonnel Douglas Corp, St. Louis MO	0.760	0.760	11/08								
Developmental Test & Evaluation	SS-CPIF	Raytheon	0.594	0.597	11/08								
Developmental Test & Evaluation	WX	NAWCWD, China Lake CA	0.125	0.150	11/08								
Operational Test & Evaluation	SS-CPIF	Delex Systems Inc, Vienna VA											
Operational Test & Evaluation	VARIOUS	VARIOUS	1.088	0.787	11/08								
Operational Test & Evaluation	WX	Oper T&E for CD 30, Norfolk VA	0.495	0.595	11/08								
Subtotal T&E			8.315	14.771									
Remarks: Totals may not add due to rounding. Computation of termination costs for Harpoon BLK III are currently being developed.													
MANAGEMENT													
Government Engineering Support	WX	NAWCAD, Patuxent River, MD	0.585	0.608	11/08								
Contractor Engineering Support	C/CPFF	TBD	0.505	0.530	12/08								
Travel	TO	NAVAIR, Patuxent River, MD	0.299	0.150	11/08								
Subtotal Management			1.389	1.288									
Remarks: Totals may not add due to rounding. Computation of termination costs for Harpoon BLK III are currently being developed.													
Total Cost			64.686	67.845									
Remarks: Totals may not add due to rounding.													

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7				PROGRAM ELEMENT NUMBER AND NAME 0604227N, HARPOON MODIFICATIONS				PROJECT NUMBER AND NAME 1843, HARPOON BLOCK III				May 2009
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
SURFACE & AIR - LAUNCHED Milestone DECISIONS	▲ MS B											
SYSTEM DEVELOPMENT AND DEMONSTRATION MILESTONES	Pre-SDD Risk Reduction											
		SDD Closeout Activities										
		▲ SRR			▲ PDR							
		▲ Award SDD Contract										
Production Milestone												

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 158

UNCLASSIFIED

Exhibit R-4a, Schedule Detail

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: MAY 2009																																															
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE																																															
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV																																															
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010																																																	
Total PE Cost	153.920	274.714	311.204																																																	
3178 UNMANNED COMBAT AIR SYSTEM CV-DEMO	153.920	267.483	311.204																																																	
3191 UCAS TECHNOLOGY MATURATION		7.231																																																		
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Unmanned Combat Air Vehicle (UCAS) designed for autonomous launch and recovery as well as operations in the Carrier Control Area (CCA), is comprised of a LO planform Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as primary flight control (PRI-FLY) displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations. The Navy UCAS program will be structured to match program resources to United States Navy (USN) objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. In previous budget requests, separate Project Units were identified for the Navy UCAS CV-Demo (PU 3178) and Technology Maturation (PU 3191) efforts. Candidate Technology Maturation efforts include transformation: communications, advanced integrated propulsion, CV suitable materials, LO sensors and apertures, sense and avoid functionality (all operating in a LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. The demonstration and the technology maturation efforts will develop data to support a follow-on acquisition milestone decision. The Navy has consolidated Project 3191 into Project 3178 beginning in FY10. Engineering and Manufacturing Development (EMD) funding is not covered, nor described in this exhibit. <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;"><u>FY 2008</u></th> <th style="text-align: right;"><u>FY 2009</u></th> <th style="text-align: right;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">158.212</td> <td style="text-align: right;">275.823</td> <td style="text-align: right;">315.805</td> </tr> <tr> <td>Current President's Budget:</td> <td style="text-align: right;">153.920</td> <td style="text-align: right;">274.714</td> <td style="text-align: right;">311.204</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-4.292</td> <td style="text-align: right; border-top: 1px solid black;">-1.109</td> <td style="text-align: right; border-top: 1px solid black;">-4.601</td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left;">Summary of Adjustments</th> </tr> </thead> <tbody> <tr> <td colspan="4">Congressional Rescissions</td> </tr> <tr> <td>Congressional Adjustments</td> <td style="text-align: right;">-3.000</td> <td style="text-align: right;">-0.362</td> <td></td> </tr> <tr> <td>SBIR/STTR/FTT Assessments</td> <td style="text-align: right;">-1.292</td> <td></td> <td></td> </tr> <tr> <td>Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">-4.597</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-0.747</td> <td style="text-align: right;">-0.004</td> </tr> <tr> <td style="text-align: right;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-4.292</td> <td style="text-align: right; border-top: 1px solid black;">-1.109</td> <td style="text-align: right; border-top: 1px solid black;">-4.601</td> </tr> </tbody> </table> Schedule: The schedule has been updated from PB09 to present greater clarity into scheduled efforts and events Technical: Not Applicable.									Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Previous President's Budget:	158.212	275.823	315.805	Current President's Budget:	153.920	274.714	311.204	Total Adjustments	-4.292	-1.109	-4.601	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments	-3.000	-0.362		SBIR/STTR/FTT Assessments	-1.292			Program Adjustments			-4.597	Rate/Misc Adjustments		-0.747	-0.004	Subtotal	-4.292	-1.109	-4.601
Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																																	
Previous President's Budget:	158.212	275.823	315.805																																																	
Current President's Budget:	153.920	274.714	311.204																																																	
Total Adjustments	-4.292	-1.109	-4.601																																																	
Summary of Adjustments																																																				
Congressional Rescissions																																																				
Congressional Adjustments	-3.000	-0.362																																																		
SBIR/STTR/FTT Assessments	-1.292																																																			
Program Adjustments			-4.597																																																	
Rate/Misc Adjustments		-0.747	-0.004																																																	
Subtotal	-4.292	-1.109	-4.601																																																	

UNCLASSIFIED

UNCLASSIFIED

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-7			0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV			3178, UNMANNED COMBAT AIR SYSTEM CV-DEMO (UCAS-D)																										
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010																											
3178 UNMANNED COMBAT AIR SYSTEM CV-DEMO			153.920	267.483	311.204																											
RDT&E Articles Qty																																
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy UCAS, designed for autonomous launch and recovery as well as operations in the Carrier Control Area (CCA), is comprised of a LO planform Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as primary flight control (PRI-FLY) displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations. The Navy UCAS program will be structured to match program resources to United States Navy (USN) objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. In previous budget requests, separate Project Units were identified for the Navy UCAS CV-Demo (PU 3178) and Technology Maturation (PU 3191) efforts. Candidate Technology Maturation efforts include transformational communications, advanced integrated propulsion, CV suitable materials, LO sensors and apertures, sense and avoid functionality (all operating in a LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. The demonstration and the technology maturation efforts will develop data to support a follow-on acquisition milestone decision. The Navy consolidated Project 3191 into Project 3178 beginning in FY10. Engineering and Manufacturing Development (EMD) funding is not covered, nor described in this exhibit. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Product Development</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 style="text-align: left;">Accomplishments / Effort / Sub-total Cost</td> <td style="text-align: center;">144.995</td> <td style="text-align: center;">252.735</td> <td style="text-align: center;">291.629</td> </tr> <tr> <td style="text-align: left;">RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </table> The primary effort in the Navy UCAS program is design, development, integration and validation of Air Vehicle Segment, Mission Control Segment and government led Aircraft Carrier Segment leading to a Carrier demonstration of an unmanned, LO planform UCAS system, and development of internal/external interface documents. In addition, design and development of hardware/software to support Automated Air Refueling (AAR) will be conducted. Shipboard evaluation of the Navy UCAS includes integration of the Navy UCAS with shipboard systems such as PRI-FLY displays, LSO displays and CATCC stations. Technology maturation aligns with the Navy UCAS demonstration to evolve this capability to achieve the requirements outlined in the Joint Strike Enabler for Unmanned Systems Initial Capabilities Document. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs support the evaluation of alternatives needed to support a future milestone decision and subsequent entry into Engineering, Manufacturing and Development (EMD). <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Management</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 style="text-align: left;">Accomplishments / Effort / Sub-total Cost</td> <td style="text-align: center;">6.751</td> <td style="text-align: center;">10.701</td> <td style="text-align: center;">10.526</td> </tr> <tr> <td style="text-align: left;">RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </table> Government management, engineering and contract support.									Product Development	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	144.995	252.735	291.629	RDT&E Articles Qty				Management	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	6.751	10.701	10.526	RDT&E Articles Qty			
Product Development	FY 2008	FY 2009	FY 2010																													
Accomplishments / Effort / Sub-total Cost	144.995	252.735	291.629																													
RDT&E Articles Qty																																
Management	FY 2008	FY 2009	FY 2010																													
Accomplishments / Effort / Sub-total Cost	6.751	10.701	10.526																													
RDT&E Articles Qty																																

UNCLASSIFIED

UNCLASSIFIED

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-7		0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV		3178, UNMANNED COMBAT AIR SYSTEM CV-DEMO (UCAS-D)	
Test and Evaluation Support		FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost		2.174	4.047	9.049	
RDT&E Articles Qty					
Perform test and evaluation of Navy UCAS. Efforts include detailed test and evaluation plan development, test site facility preparation, system integration, ground and flight test execution and reporting, and carrier at sea test planning. C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable D. ACQUISITION STRATEGY: In the 2005 QDR, the Navy was directed to restructure the J-UCAS program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater (CV) standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for carrier integration and maturation of critical technologies, while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. Currently, primary hardware development for the Navy UCAS effort is being performed under a FAR-based, cost plus incentive fee-type contract competitively awarded to a single contractor. Future technology development efforts will be conducted in accordance with DoDI 5000.02.					

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3 Cost Analysis								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV				PROJECT NUMBER AND NAME 3178, UNMANNED COMBAT AIR SYSTEM CV-DEMO (UCAS-D)						
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												
Air Ship Integration	C/CPFF	ROCKWELL/AFRL, ROME, NY	4.185	2.200	Dec 2008	1.200	Dec 2009					
Air Ship Integration	C/FFP	L-3 COMMUNICATIONS TITAN CORP, ANNAPOLIS JUNCTION, MD	3.408	2.936	Dec 2008	1.538	Dec 2009					
Air Ship Integration	WX	NAWCAD, PATUXENT RIVER, MD	8.225	4.873	Nov 2008	10.917	Nov 2009					
Air Ship Integration	TBD	TBD				2.142	Feb 2010					
Primary Hdw Development	C/CPIF	NORTHROP GRUMMAN CORP, SAN DIEGO, CA	149.189	230.697	Nov 2008	214.298	Nov 2009					
Advanced Dev Eng	TBD	Other				29.700	Dec 2009					
Systems Eng	WX	NAWCAD, PATUXENT RIVER, MD	5.428	6.005	Nov 2008	9.437	Nov 2009					
Product Development	Various	Various	63.520	5.487		2.540						
SUBTOTAL PRODUCT DEVELOPMENT			233.955	252.198		271.772						

SUPPORT												
Studies and Analysis	TBD	TBD				1.338	Feb 2010					
Concept Development	WX	NAWCAD, PATUXENT RIVER, MD				7.400	Nov 2009					
Concept Development	TBD	TBD				11.000	Mar 2010					
Support	Various	Various	.467	.537		.119						
SUBTOTAL SUPPORT			.467	.537		19.857						

TEST & EVALUATION												
Dev Test & Eval	MIPR	AFFTC, EDWARDS AFB, CA	.700	2.228	Jan 2009	3.214	Nov 2009					
Test & Eval	Various	Various	.128	.155		.352						
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER, MD	1.594	1.664	Nov 2008	5.483	Nov 2009					
SUBTOTAL TEST & EVALUATION			2.422	4.047		9.049						

MANAGEMENT												
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	4.464	3.041	Nov 2008	3.533	Nov 2009					
Program Mgmt Support	WX	NAWCAD, PATUXENT RIVER MD	3.282	1.833	Nov 2008	2.750	Nov 2009					
Program Mgmt Sup - Contract	C-CPIF	VARIOUS	5.287	5.458	Dec 2008	3.800	Dec 2009					
Management	Various	Various	.656	.369		.443						
SUBTOTAL MANAGEMENT			13.689	10.701		10.526						

Total Cost			250.533	267.483		311.204						

EXHIBIT R4, Schedule Profile												DATE: May 2009														
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7					PROGRAM ELEMENT NUMBER AND NAME 0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV					PROJECT NUMBER AND NAME 3178, UNMANNED COMBAT AIR SYSTEM CV-DEMO (UCAS-D)																
Fiscal Year	FY 2008				FY 2009				FY 2010																	
	1	2	3	4	1	2	3	4	1	2	3	4														
Development																										
AV-1 Devel & Integr																										
AV-2 Devel & Integr																										
MCS Shelter Devel																										
MCS S/W Devel, Int, & Supt																										
Test and Evaluation																										
Surrogate Testing																										
Airworthiness Testing																										
Land Based Catapult & Arresting Gear Testing																										
Ship Integration																										
Precision GPS																										
Air Traffic Control Console																										
Shipboard Display Development & Integration																										
Aviation Data Management and Control System (ADMACS) Block II																										
Ship Modifications																										
Autonomous Air-to-Air (AAR) Refueling																										
Preliminary Design																										
Detail Design																										
Technology Maturation																										

UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV				3178, UNMANNED COMBAT AIR SYSTEM CV-DEMO (UCAS-D)			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Development								
AV-1 Devel & Integr	1Q - 4 Q	1Q - 4Q						
AV-2 Devel & Integr		2Q - 4Q	1Q - 4Q					
MCS Shelter Devel	1Q - 4Q	1Q						
MCS S/W Devel, Int, & Supt	2Q - 4Q	1Q - 4Q	1Q - 4Q					
Test and Evaluation								
Surrogate Testing		1Q - 4Q	1Q, 3Q - 4Q					
Airworthiness Testing			1Q - 4Q					
Land Based Catapult & Arresting Gear Testing			4Q					
Ship Integration								
Precision GPS	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Air Traffic Control Console	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Integration	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Aviation Data Management and Control System (ADMACS) Block II	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Ship Modifications	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Autonomous Air-to-Air Refueling								
Preliminary Design		3Q - 4Q	1Q - 3Q					
Detail Design			2Q - 4Q					
Technology Maturation			1Q - 4Q					

UNCLASSIFIED

CLASSIFICATION:
UNCLASSIFIED

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-7		0604402N, UNMANNED COMBAT AIR VEHICLE (UCAV) ADV CP/PROTO DEV			3191, UCAS TECHNOLOGY MATURATION														
COST (\$ in Millions)		FY 2008	FY 2009																
3191 UCAS TECHNOLOGY MATURATION			7.231																
RDT&E Articles Qty																			
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Unmanned Combat Air System (UCAS) Advanced Development effort. Navy UCAS technology maturation efforts are contained within Project 3178 beginning in FY10. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Product Development</th> <th style="text-align: center;">FY 2008</th> <th style="text-align: center;">FY 2009</th> <th style="text-align: center;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td style="text-align: center;">7.231</td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> A primary effort in the Navy UCAS program is the identification and maturation of technologies required to support the demonstration of an unmanned, LO planform Navy UCAS on an aircraft carrier. Technology maturation aligns with the Navy UCAS demonstration to evolve this capability to achieve the requirements outlined in the Joint Strike Enabler for Unmanned Systems Initial Capabilities Document. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs support the evaluation of alternatives needed to support a future milestone decision and subsequent entry into Engineering, Manufacturing and Development (EMD). No FY10 activities will be conducted under Project 3191. C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable D. ACQUISITION STRATEGY: Navy UCAS technology maturation efforts are contained within Project 3178 in FY10.								Product Development	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost		7.231		RDT&E Articles Qty			
Product Development	FY 2008	FY 2009	FY 2010																
Accomplishments / Effort / Sub-total Cost		7.231																	
RDT&E Articles Qty																			

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				R-1 ITEM NOMENCLATURE PE 0101221N Strategic Sub & Weapons System Support			

COST (\$ in Millions)	FY2008	FY2009	FY2010				
Total PE Cost	64.292	78.537	74.939				
J2228 Technology Applications Program	40.903	45.344	45.637				
J3158 Enhanced Special Weapons	5.771	0.932	5.850				
S0004 TRIDENT Submarine Systems Improvement	0.271	0.347	0.386				
J3198 Underwater Launch Missile System	0.000	9.973	0.000				
J3196 Advanced Technologies for Arming, Fuzing, & Firing (AF&F) Systems	14.455	0.000	0.000				
9E10A Advanced Technology for Mk5 AF&F	0.000	9.973	0.000				
0951 Joint Warhead Fuze Sustainment	0.000	0.000	23.066				
9C47A /9999 Advanced LINAC Facility	2.892	3.191	0.000				
9E08A Adelos National Security Sensor System	0.000	1.995	0.000				
9E09A Enhanced Special Weapons/Nuclear Weapons Security	0.000	1.596	0.000				
9E11A Covert Robust Location Aware Wireless Network	0.000	1.596	0.000				
9E12A Maritime Security- Surface and Sub-Surface Surveillance	0.000	3.590	0.000				

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

The Technology Applications Program supports the TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) that provides the U.S. a weapon system with greater accuracy and payload capability as compared to the TRIDENT I (C4) system. TRIDENT II enhances U.S. strategic deterrence providing a survivable sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. This Program Element supports investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base. These efforts include Reentry System Applications and Guidance System Applications.

The Enhanced Special Weapons effort supports the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located on land at Naval Submarine Base, Kings Bay, or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies focusing on land and waterside requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

The TRIDENT Submarine System Improvement Program develops and integrates command and control improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

The Underwater Launch Missile System (ULMS) effort develops capabilities definitions and assessments, science & technology development strategies, and conceptual work to prepare for R&D and future prototyping.

The Advanced Technologies for Arming, Fuzing, and Firing (AF&F) program supports efforts to develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs. The focus is on technologies that have multi-service (Navy and Air Force) and Multi-Nation (US and UK) applicability. \$10.0M of FY 2008 funds supports a working group of engineers (USN, USAF, and UK) to identify, prioritize, develop, proof, and demonstrate future AF&F applications. \$10M of 2009 funding was appropriated as a Congressional add to support advance technologies for the Mk5 Arming, Fuzing, and Firing (AF&F). The Joint Warhead Fuze Sustainment Program will begin in FY2010 as a development and studies program which integrates modern technologies into the Arming, Fuzing, and Firing (AF&F) development and modernization to improve reliability, safety and security, and develop common fuze components adaptable to current and future warheads.

The Advanced LINAC Facility Program seeks to develop and complete the design for an advanced Linear Accelerator Facility to perform radiation simulation of transient dose rate events. This facility will perform with advanced capabilities to overcome limitations of existing facilities, allowing for greater efficiency in testing and reducing costs.

The Adelos National Security Sensor System effort develops an advanced fiber optic sensor systems for counterterrorism and antiterrorism operations to meet rigorous performance metrics necessary for nuclear facility, material, and weapons protection. The Adelos component will evaluate the use of advanced classification algorithms for reduction of false positive detections of objects in proximity to fiber optic sensing elements. Adelos program also seeks to expand the application of a unique fiber optic sensor system designed to provide covert surveillance and intelligence gathering of potential threats to our nation's nuclear activity.

The Enhanced Special Weapons/Nuclear Weapons Security effort supports the development of the Adelos fiber optic sensor system for the advanced detection, tracking, and classification of potential threat targets by employing advanced digital acoustic watermarking algorithms within a secure network for steganographic techniques to convey the classification and location information within the digital audio signal produced by the Adelos application software.

The Covert Robust Location Aware Wireless Network (CROWN) program develops a key foundation technology enabler to provide communication between multiple assets for a covert network capability that could be used on the submarine as a wireless network, and as a method to improve relative terminal accuracy that cannot be met today, especially in jammed or spoofed battlefields. The CROWN program provides the military precision relative location determination, tracking in a jammed environment, and high data rate communications with a low probability of being detected or intercepted by adversaries.

The Maritime Security- Surface and Sub-Surface Surveillance effort supports the development of the Quad-S Seaport Security System. The Quad-S Program develops a tactical surveillance and reconnaissance system in support of real-time monitoring of the complete spectrum of the maritime domain – underwater, surface, air, associated landside environments and individuals within those environments. This funding will also develop a needed year-round test bed, to evaluate and test emerging maritime technologies against the operational capabilities needed by the U.S. Navy.

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-7	PE 0101221N Strategic Sub & Wpns Sys Spt	

B. (U) Program Change Summary:

	FY2008	FY2009	FY2010
Previous President's Budget (FY 2009 President's Controls)	67.758	80.120	56.699
Current FY 2010 President's Budget	64.292	78.537	74.939
Total Adjustments	-3.466	-1.583	18.240

Summary of Adjustments

Congressional Recessions	0.000	0.000	0.000
Congressional Adjustments	0.000	-1.559	0.000
SBIR/STTR/FTT Assessment	-0.464	0.000	0.000
Program Adjustments	-3.000	0.000	19.328
Rate/Misc Adjustments	-0.002	-0.024	-1.088
Subtotal	-3.466	-1.583	18.240

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7						PROJECT NUMBER AND NAME Technology Applications J2228		

COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost J2228 Technology Applications	40.903	45.344	45.637					
RDT&E Articles Qty	0.000	0.000	0.000					

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

This project supports implementation of a coordinated Navy/Air Force Reentry System Applications Program (RSAP), and a coordinated Navy/Air Force Strategic Guidance Applications Program (GAP). Reentry vehicle and guidance technology had been rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. The December 2001 DOD Nuclear Posture Review determined that infrastructure is a critical part of the new triad and these efforts form part of the infrastructure that supports the nuclear force structure.

The RSAP program, through sustainment of the reentry vehicle technology base, will maintain confidence in the dependability and reliability of strategic SLBM and ICBM weapon systems over the long term when no new systems will be in development. Critical and unique attributes necessary for the design, development and in-service support of current and modernized SLBM reentry systems have been defined and will be maintained to insure a functioning readiness application technical capability in reentry is preserved. Working closely with the Air Force, Navy and Air Force requirements have been integrated into a comprehensive program. The program maintains close coordination with the DOD Science and Technology (S&T) community in order to: leverage S&T programs, ensure system driven technology base requirements are considered in contract awards, eliminate duplication of effort and provide an opportunity to demonstrate appropriate emerging technologies through a reentry flight test evaluation process.

The GAP program provides a minimum strategic guidance core technology development capability consistent with the Strategic Advisory Group (SAG) recommendations to COMSTRATCOM. The SAG recommended that SSP establish a program which preserves this critical design and development core. It is a basic bridge program which develops critical guidance technology applicable to any of the existing Air Force/Navy strategic missiles. The objective is to transition from current capability to a long term readiness status required to support deployed systems. Air Force and Navy guidance technology requirements are integrated and needs prioritized. Efforts are focused on alternatives to technologies identified as system "weak links." Currently system accuracy and functionality depends upon key technologies which provide radiation hardened velocity, attitude and stellar sensing capabilities. As the underlying technologies that currently provide these capabilities age and are no longer technically supportable, modern alternatives must be made available in order to allow for orderly replacement. There is no commercial market for these technologies and their viability depends on the strategic community.

R-1 SHOPPING LIST - Item No. 160- 3 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: Technology Applications J2228	

B. (U) Accomplishments/Planned Program

	FY2008	FY2009	FY2010
Reentry Systems Application Program (RSAP)	24.445	28.059	24.053
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2008 PLAN

(U) (\$24.445) Continue Reentry System Applications Program.

FY 2008 efforts include:

- (U) Maintain the current capability and support the planned service life extension of Navy reentry systems.
- (U) Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T)
- (U) Flight test alternative low-cost heat shield and replacement nose tip material.
- (U) Flight test operationally aged heat shields to support aging trends and replacement materials assessments.
- (U) Complete development and flight test advanced reentry instrumentation such as inertial sensor and avionics computer, encapsulated on the updated engineering instrumentation package.
- (U) Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT)
- (U) Continue Reentry Body material development and advanced flight test instrumentation activities.
- (U) Continue development of advanced GPS receiver.
- (U) Ground test advanced reentry material systems and advanced instrumentation components.
- (U) Develop test instrumentation to demonstrate D5LE missile reentry body interface compatibility.
- (U) Continue to develop the capability to produce Thermocouple (TC) Plugs at significantly reduced cost to the Government.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: Technology Applications J2228	
B. (U) Accomplishments/Planned Program		
(U) FY 2009 PLAN (U) (\$28.059) Continue Reentry System Applications Program. FY 2009 efforts include: (U) Maintain the current capability and support the planned service life extension of Navy reentry systems. (U) Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) (U) Flight test alternative low-cost heat shield and replacement nose tip material. (U) Flight test operationally aged heat shields to support aging trends and replacement materials assessments. (U) Complete development and flight test advanced reentry instrumentation such as inertial sensor avionics computer, encapsulated on the updated engineering instrumentation package. (U) Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. (U) Continue Reentry Body material development and advanced flight test instrumentation activities. (U) Continue development of advanced GPS receiver. (U) Ground test advanced reentry material systems and advanced instrumentation components. (U) Develop test instrumentation to demonstrate D5LE missile reentry body interface compatibility. (U) FY 2010 PLAN (U) (\$24.053) Continue Reentry System Applications Program. FY 2010 efforts include: (U) Maintain the current capability and support the planned service life extension of Navy reentry systems. (U) Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) (U) Flight test alternative low-cost heat shield and replacement nose tip material. (U) Flight test operationally aged heat shields to support aging trends and replacement materials assessments. (U) Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. (U) Continue Reentry Body material development and advanced flight test instrumentation activities. (U) Continue development of advanced GPS receiver. (U) Ground test advanced reentry material systems and advanced instrumentation components. (U) Develop test instrumentation to demonstrate D5LE missile reentry body interface compatibility.		

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																							DATE:		May 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
APPROPRIATION/BUDGET													PROGRAM ELEMENT NUMBER AND NAME:										Project Name and Name:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7													PE 0101221N Strategic Sub & Wpns Sys Spt										Technology Applications RSAP J2228																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Fiscal Year	CY-2008				2009				2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

R-1 SHOPPING LIST - Item No. 160 - 6 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7			PROGRAM ELEMENT NUMBER AND NAME: PE 0101221N Strategic Sub & Wpns Sys Spt		Project Number and Name Technology Applications J2228			
Fiscal Year	CY-2008	2009	2010					
Contract Award -ahead and Milestones	1Q	1Q	1Q					
Common Technology, Component, and Interface studies								
System Development & Demonstration	1-2Q							
Initial Production Baseline								
Production and Deployment								
Systems Engineering Reviews	2Q	1-2Q	1Q - 4Q					
System Integration Test - Mock-up	3-4Q							
Systems Integration Test - Engineering Development Units	2-4Q	1-2Q						
Systems Integration Test - Production Proofing Units								
System Test		4Q						

R-1 SHOPPING LIST - Item No. 160 - 7 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: Technology Applications J2228

B. (U) Accomplishments/Planned Program

	FY2008	FY2009	FY2010
Guidance Application Program (GAP)	16.458	17.285	21.584
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2008 PLAN

(U) (\$16.458) Continue Strategic Guidance Applications Programs (GAP).

FY 2008 efforts include:

(U) Production and Qualification (P&Q) of telecom-based components for use in strategic grade gyros (e.g. fiber light source, integrated optics chip, couplers).

(U) Production and Qualification (P&Q) of reduced cost, long life Pendulous Integrating Gyro Accelerometer (PIGA) sensor.

(U) Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios.

(U) Complete the development of alternate sources for critical components required to support D5LE emergent sensors.

(U) Conduct investigations to improve circumvention and recovery performance.

(U) Silicon Oscillating Accelerometer (SOA). Continue design, build, evaluate and demonstrate SOA as a potential strategic grade accelerometer.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: Technology Applications J2228

B. (U) Accomplishments/Planned Program

(U) FY 2009 PLAN

(U) (\$17.285) Continue Strategic Guidance Applications Programs (GAP).

FY 2009 efforts include:

- (U) Develop new architectures using telecom-based optical components for high-precision strategic gyro.
- (U) Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor.
- (U) Assess feasibility of advanced stellar sensor technologies for use a strategic application; specifically, active pixel and camera-on-a-chip architectures will be evaluated.
- (U) Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios.
- (U) Conduct investigations to improve circumvention and recovery performance.
- (U) Continue design, build, evaluate and demonstrate SOA as a strategic grade accelerometer.

(U) FY 2010 PLAN

(U) (\$21.584) Continue Strategic Guidance Applications Programs (GAP).

FY 2010 efforts include:

- (U) Develop new architectures using telecom-based optical components for high-precision strategic gyro.
- (U) Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor.
- (U) Assess feasibility of advanced stellar sensor technologies for use a strategic application; specifically, active pixel and camera-on-a-chip architectures will be evaluated.
- (U) Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios.
- (U) Conduct investigations to improve circumvention and recovery performance.
- (U) Continue design, build, evaluate and demonstrate SOA as a strategic grade accelerometer.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																DATE: May 2009																	
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME:									Project Number and Name															
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY/BA-1									PE 0101221N Strategic Sub & Wpns Sys Spl									Technology Applications GAP J222I															
Fiscal Year	CY-2008				2009				2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Contract Award	△				△				△																								
Production and Qualification of telecom-based strategic gyro components																																	
Production and Qualification of long-life PIGA sensor																																	
Virtual Systems Simulation trade studies for advanced system concepts																																	
Circumvention and Recovery investigations																																	
Continue SOA design, build, evaluation and demonstration																																	
Develop system architectures for high precision strategic gyro																																	
Evaluation of emerging alternate accelerometer technologies																																	
Evaluation of emerging alternate gyro technologies																																	
Assess feasibility of advanced strategic stellar sensor technologies																																	

R-1 SHOPPING LIST - Item No. 160 - 10 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7			PROGRAM ELEMENT NUMBER AND NAME: PE 0101221N Strategic Sub & Wpns Sys Spt			Project Number and Name Technology Applications J2228		
Fiscal Year	CY-2008	2009	2010					
Contract Award	1Q	1Q	1Q					
Production and Qualification of telecom-based strategic gyro components	1-4Q							
Production and Qualification of long-life PIGA sensor	1-4Q							
Virtual Systems Simulation trade studies for advanced system concepts	1-4Q	1-4Q	1-4Q					
Circumvention and Recovery investigations	1-4Q	1-4Q	1-4Q					
Continue SOA design, build, evaluation and demonstration	1-4Q	1-4Q	1-4Q					
Develop system architectures for high precision strategic gyro		1-4Q	1-4Q					
Evaluation of emerging alternate accelerometer technologies		1-4Q	1-4Q					
Evaluation of emerging alternate gyro technologies		1-4Q	1-4Q					
Assess feasibility of advanced strategic stellar sensor technologies		1-4Q	1-4Q					

R-1 SHOPPING LIST - Item No. 160 - 11 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: Technology Applications J2228

C. (U) Other Program Funding Summary: (Dollars in Millions)

	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>
WPN BA1/1250/PE 0101228N	1,044.192	1,085.057	1,060.504

D. (U) Acquisition Strategy:

Contracts will continue to be awarded to those sources who were engaged in the TRIDENT II (D5) development program and are currently engaged in the production and/or operational support of the deployed D5 Strategic Weapons Systems on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. (U) Major Performers:

- LMMS/CA - Reentry Body Systems Integration (RSAP)
- NSWC/VA - Heat shield Nose tip materials development (RSAP)
- ITT/CO - Vulnerability and hardness technologies (RSAP)
- CSDL/MA - Reentry Systems flight test instrumentation (RSAP)
- DOE/NM - Advanced fuzing technology (RSAP)
- CSDL/MA - Guidance Application program support (GAP)

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis											DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				PROGRAM ELEMENT PE 0101221N Strategic Sub & Wpns Sys Spt						Project Number and Name Technology Applications J2228				
Cost Categories	Contract Method & Type	Performing Activity &	Total PYs Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award	FY 10 Cost	FY 10 Award Date					
<u>Support & Management</u>														
Technology Applications	SS-CPFF	LMSS/CA	109.000	13.083	12-07	11.500	10-08	13.000	10-09					
Technology Applications	WR	NSWC/VA	63.100	5.366	10-07	5.377	10-08	0.000						
Technology Applications	MIPR	DOE/NM	25.200	0.618	10-07	1.000	10-08	1.000	10-09					
Technology Applications	SS-CPFF	CSDL/MA	17.700	0.000	N/A	0.000	10-08	0.000						
Technology Applications	SS-CPFF	ITT/CO	7.700	0.000	10-07	1.946	10-08	1.946	10-09					
Technology Applications	SS-CPFF	CSDL/MA	193.600	16.336	10-07	21.871	12-08	26.279	10-09					
Technology Applications	SS-CPFF	LMMSC/CA	55.800	0.000		0.000		0.000						
Technology Applications	WR	NAWC/CA	3.400	0.000		0.000		0.000						
Technology Applications	WR	NSWC/VA	2.553	0.000		0.000		0.000						
Technology Applications	SS-CPFF	CSDL/MA	21.600	5.366	02-08	0.000		0.000						
Technology Applications	SS-CPFF	HI/FL	22.100	0.000		0.000		0.000						
Technology Applications	SS-CPFF	NGMS/CA	2.500	0.000		0.000		0.000						
Technology Applications	SS-CPFF	AERO	3.000	0.000		0.000		0.000						
Technology Applications	SS-CPFF	BAE/MD	1.800	0.000		0.000		0.000						
Technology Applications	SS-CPFF	INTERSIL	3.500	0.000		0.000		0.000						
Technology Applications	VARIOUS	VARIOUS	13.000	0.134	VARIOUS	3.650	VARIOUS	3.412	VARIOUS					
Subtotal Product Development			545.553	40.903		45.344		45.637						
Remarks:														
Total Cost			545.553	40.903		45.344		45.637						
Remarks:														

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME Enhanced Special Weapons J3158	

COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost J3158 Enhanced Special Wpns	5.771	0.932	5.850					
RDT&E Articles Qty	0.000	0.000	0.000					

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

The Enhanced Special Weapons effort supports the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear assets. More specifically, the mission includes landside and pier operations as well as transits to and from the dive point, each of which present challenges to personnel as well as existing technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies focusing on land, waterside, and in transit requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: Enhanced Special Weapons J3158												
B. (U) Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 60%;"></th><th style="width: 10%;">FY2008</th><th style="width: 10%;">FY2009</th><th style="width: 10%;">FY2010</th></tr></thead><tbody><tr><td>Project Cost J3158 Enhanced Special Weapons</td><td style="text-align: center;">4.932</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</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></tbody></table> (U) FY 2008 PLAN (U) (\$4.932) Enhanced Special Weapons/SSBN Escort Mission. FY 2008 efforts include: (U) Continue prototype development and test program for the Palletized Protection System. Once the prototypes are completed, plans are to continue with follow-on tests and proofing as a lead in to future production . Participants in the program will continue to be TARDAC and MIT as the technical and scientific experts and SPA as management's support in addition to the winner of the FY 2007 prototype competition.				FY2008	FY2009	FY2010	Project Cost J3158 Enhanced Special Weapons	4.932	0.000	0.000	RDT&E Articles Quantity	0.000	0.000	0.000
	FY2008	FY2009	FY2010											
Project Cost J3158 Enhanced Special Weapons	4.932	0.000	0.000											
RDT&E Articles Quantity	0.000	0.000	0.000											

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: Enhanced Special Weapons J3158

B. (U) Accomplishments/Planned Program

	FY 2008	FY 2009	FY2010
Project Cost J3158 Enhanced Special Weapons	0.839	0.932	5.850
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2008 PLAN

(U) (\$0.839) Enhanced Special Weapons/Nuclear Weapons Security program.

FY 2008 efforts include:

(U) Underwater Close-in Defense: This effort is focused on developing an advanced underwater vehicle and diver detection and deterrence system for the protection of high value maritime assets while they are in port. The conceptual system involves a physical net-like barrier that combines use of fiber-optic sensing and alerting technology to provide an extremely high positive detection rate and extremely low false alarm rate. The concept design also includes increased alert time to improve positive identification of intruders and for activation of response systems.

(U) Technology Reviews: The program is investigating high frequency subsurface sensors, video motion detection, taut wire defeat barriers. A design effort is underway for the underwater denial system and assessing lethality of proposed systems.

(U) FY 2009 PLAN

(U) (\$0.932) Enhanced Special Weapons/Nuclear Weapons Security program.

FY 2009 efforts include:

(U) Underwater Close-in Defense: This effort is focused on developing an advanced underwater vehicle and diver detection and deterrence system for the protection of high value maritime assets while they are in port. The conceptual system involves a physical net-like barrier that combines use of fiber-optic sensing and alerting technology to provide an extremely high positive detection rate and extremely low false alarm rate. The concept design also includes increased alert time to improve positive identification of intruders and for activation of response systems.

(U) Technology Reviews: The program investigating subsurface sensors in multi-sensor configurations, continuing taut wire defeat barrier research and researching low frequency subsurface sensors. The underwater denial system design is ongoing and lethality testing will begin.

(U) FY 2010 PLAN

(U) (\$5.580) Enhanced Special Weapons/Nuclear Weapons Security program.

FY 2010 efforts include:

(U) Continue efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers.

(U) Develop advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems.

(U) Develop advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities.

(U) Technology Reviews: The systems will undergo further testing prior to production decisions.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: Enhanced Special Weapons J3158	
C. (U) Other Program Funding Summary: (Dollars in Millions)			
<u>Nuclear Weapons Security</u>	FY 2008	FY 2009	FY 2010
MILCON (CNI)	39.750	56.830	154.711
OPN BA7/PE various	53.111	52.703	42.524
O&MN BA1/1D2D/PE Various	72.128	78.043	75.425
<u>Transit/Escort</u>			
MILCON (CNI)	0.000	0.000	0.000
OPN BA1/1210/PE 0101228N	0.000	0.000	10.010
WPN BA4/4217/PE 0101228N	6.999	45.223	0.000
O&MN BA1/1D2D/PE 0208147N	73.400	90.139	138.062
D. (U) Acquisition Strategy: Procurements are being executed through a combination of private contractors (large and small business), government Centers of Excellence (COEs), other government agencies and the Naval Submarine Bases, Kitsap and Kings Bay. Contract awards are based upon "best value" determinations, and where practical will be performance based or include incentive provisions.			
E. (U) Major Performers: - BAE - Marinization of Integrated Army Active Protection System (IAAPS) and deliver two (2) operational prototype units. - NFESC/CA - Underwater Close-in defense - DOE/NM - Technology Reviews - APL/MD - Remotely Operated Weapons technologies; final denial technologies.			

R-1 SHOPPING LIST - Item No. 160 - 17 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis										DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					Project Number and Name Enhanced Special Weapons J3158									

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Support & Management														
Enhanced Special Weapons	CPFF	BAE	35.000	2.849	02-08	0.000	N/A	0.000	N/A					
Enhanced Special Weapons	WR	NFESC/CA	3.000	0.102	02-08	0.495	12-08	0.500	10-09					
Enhanced Special Weapons	MIPR	DOE/NM	2.000	0.000	N/A	0.000	N/A	0.000	N/A					
Enhanced Special Weapons	CPFF	APL/MD	1.100	0.000	N/A	0.000	N/A	0.000	N/A					
Enhanced Special Weapons	WR	PNSW/FL	0.000	0.000	N/A	0.100	11-08	0.000	N/A					
Enhanced Special Weapons	VARIOUS	VARIOUS	0.763	2.820	02-08	0.337	02-09	5.350	10-09					
Subtotal Product Development			41.863	5.771		0.932		5.850						
Remarks:														
Total Cost			41.863	5.771		0.932		5.850						
Remarks:														

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																DATE: May 2009															
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7								PROGRAM ELEMENT NUMBER AND NAME: PE 0101221N Strategic Sub & Wpns Sys Spt								Project Number and Name Enhanced Special Weapons J3158															
Fiscal Year	CY-2008				2009				2010																						
	1	2	3	4	1	2	3	4	1	2	3	4																			
Contract Go-ahead and Milestones		△ Contract Award																													
Common Technology, Component, and Interface studies (Tech Dev Phase)																															
System Development & Demonstration Phase																															
Systems Engineering Reviews		△ SRR	△ IBR	△ PDR		△ CDR					△ PRR																				
System Integration Test - Mock-up																															
Systems Integration Test - Engineering Development Units																															
Long Lead Items (for prototype Unit)																															
Systems Integration Test - Production Proofing Units Including LRIP																															
Production and Deployment Phase																															
System Test											△																				

R-1 SHOPPING LIST - Item No. 160 - 19 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4a, Schedule Detail						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7			PROGRAM ELEMENT NUMBER AND NAME: PE 0101221N Strategic Sub & Wpns Sys Spt			Project Number and Name Enhanced Special Weapons J3158	
Fiscal Year	CY-2008	2009	2010				
Contract Award -ahead and Milestones	2Q						
Common Technology, Component, and Interface studies	1Q						
System Development & Demonstration	2-4Q	1-4Q					
Initial Production Baseline		4-Q					
Production and Deployment			1-4Q				
Systems Engineering Reviews	2-4Q	1Q - 4Q					
System Integration Test - Mock-up	4Q	1-2Q					
Systems Integration Test - Engineering Development Units		2-3Q					
Systems Integration Test - Production Proofing Units		3-4Q					
System Test			1Q				

R-1 SHOPPING LIST - Item No. 160 -20 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7						PROJECT NUMBER AND NAME Advanced Technologies for Arming, Fuzing, and Firing (AF&F) Systems J3196		
COST (\$ in Millions)		FY2008	FY2009	FY2010				
Project Cost J3196 Advanced Technologies for Arming, Fuzing, and Firing (AF&F) Systems		14.455	0.000	0.000				
RDT&E Articles Qty		0.000	0.000	0.000				
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION								
The Advance Technologies for Arming, Fuzing, and Firing (AF&F) program supports the development, proofing, and demonstration of advanced technologies that will be leveraged and incorporated into future AF&Fs. The focus is on technologies that have multi-service (Navy and Air Force) and Multi-Nation (US and UK) applicability. \$10.0M of FY 2008 funds supports a working group of engineers (USN, USAF, and UK) to identify, prioritize, develop, proof, and demonstrate future AF&F applications. Examples of the technologies investigated are advance safety systems architectures, improved radar performance, multi-chip radar integration, radiation hardened electronics, radiation hardened non-volatile memory, advance power systems, identification of component qualification techniques, and preliminary testing of alternative components (primarily circuit elements.) \$4.5M of FY 2008 funding was used by the Department of Defense to fund the Congressional Commission on Strategic Posture of the United States.								

R-1 SHOPPING LIST - Item No. 160 - 21 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: Advanced Technologies for Arming, Fuzing, and Firing (AF&F) Systems J3196												
B. (U) Accomplishments/Planned Program <table border="1" style="margin-top: 10px; width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 60%;"></th><th style="width: 10%;">FY 2008</th><th style="width: 10%;">FY 2009</th><th style="width: 10%;">FY 2010</th></tr></thead><tbody><tr><td>Advanced Technologies for Arming, Fuzing, & Firing (AF&F) Systems</td><td style="text-align: center;">14.455</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</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></tbody></table> (U) FY 2008 PLAN (U) (\$10.0) Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs. FY 2008 efforts include: (U) Support of USN, USAF, and UK engineer working group. (U) Define Technical and Safety Requirements. (U) Assess and Develop an Above Ground Testing Plan. (U) Instrument, assemble, and perform three light initiated high explosive spray tests and complete summary reports. (U) (\$4.5M) Department of Defense funding to support the Congressional Commission on Strategic Posture of the United States.				FY 2008	FY 2009	FY 2010	Advanced Technologies for Arming, Fuzing, & Firing (AF&F) Systems	14.455	0.000	0.000	RDT&E Articles Quantity	0.000	0.000	0.000
	FY 2008	FY 2009	FY 2010											
Advanced Technologies for Arming, Fuzing, & Firing (AF&F) Systems	14.455	0.000	0.000											
RDT&E Articles Quantity	0.000	0.000	0.000											

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 160 - 23 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					PROJECT NUMBER AND NAME 9E10A Advanced Technology for Mk5 AF&F			
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 9E10A Advanced Technology for Mk5 AF&F	0.000	9.973	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION The FY2009 funding is to support the development and studies program, Advanced Technologies for Mk5 Arming, Fuzing, and Firing (AF&F). The Advance Technologies for AF&F program supports the development, proofing, and demonstration of advanced technologies that will be leveraged and incorporated into future AF&Fs. The focus will be on technologies that have multi-service (Navy and Air Force) and Multi-Nation (US and UK) applicability. Examples of the technologies to be investigated are advance safety systems architectures, improved radar performance, multi-chip radar integration, radiation hardened electronics, radiation hardened non-volatile memory, advance power systems, identification of component qualification techniques, and preliminary testing of alternative components (primarily circuit elements.)								

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: 9E10A Advanced Technology for Mk5 AF&F	

B. (U) Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010
Project Cost 9E10A Advanced Technology for Mk5 AF&F	0.000	9.973	0.000
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2009 PLAN

(U) (\$9.973) Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs.

FY 2009 efforts include:

- (U) Continue work in support of advanced technologies.
- (U) Support USN, USAF, and UK engineer working group.
- (U) Complete Light Initiated High Explosives proof of concept and generate test report.
- (U) Complete the down selection of new path length sensor technology.
- (U) Generate a Facilities Readiness Document.
- (U) Define Reentry Body/Reentry Vehicle Safety and Systems Architecture and Investigate Safety Architecture Trades.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				PROGRAM ELEMENT PE 0101221N Strategic Sub & Wpns Sys Spt				Project Number and Name 9E10A Advanced Technology for Mk5 AF&F					
Cost Categories	Contract Method & Type	Performing Activity &	Total PYs Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
<u>Support & Management</u>													
Advanced Technology Mk5 AF&F	MIPR	DOE/NM	0.000	0.000	N/A	9.973	04-09	0.000	N/A				
Subtotal Product Development			0.000	0.000		9.973		0.000					
Remarks:													
Total Cost			0.000	0.000		9.973		0.000					

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					PROJECT NUMBER AND NAME 0951 Joint Warhead Fuze Sustainment			
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 0951 Joint Warhead Fuze Sustainment	0.000	0.000	23.066					
RDT&E Articles Qty	0.000	0.000	0.000					
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION								
The Joint Warhead Fuze Sustainment Program is a development and studies program which integrates modern technologies into the Arming, Fuzing, and Firing (AF&F) development and modernization to improve reliability, safety and security, and develop common fuze components adaptable to current and future warheads. and with joint service and country applicability. The Joint Warhead Fuze Sustainment Program will focus on technologies that have multi-service (Navy and Air Force) and Multi-Nation (US and UK) applicability. Examples of the technologies to be investigated are advance safety systems architectures, improved radar performance, multi-chip radar integration, radiation hardened electronics, radiation hardened non-volatile memory, advance power systems, identification of component qualification techniques, and preliminary testing of alternative components (primarily circuit elements.)								

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: 0951 Joint Warhead Fuze Sustainment	
B. (U) Accomplishments/Planned Program			
	FY 2008	FY 2009	FY 2010
Project Cost 0951 Joint Warhead Fuze Sustainment	0.000	0.000	23.066
RDT&E Articles Quantity	0.000	0.000	0.000
(U) FY 2010 PLAN (U) (\$23.066) Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs. FY 2010 efforts include: (U) Develop, proof, and demonstrate identified advanced technologies for future AF&Fs. (U) Support USN, USAF, and UK engineer working group. (U) Perform component level testing of potential arming/fuzing devices and technologies. (U) Develop approach to address radiation hardening issues in electronic AF&F components. (U) Down select Mk5 Life Extension Program Designs.			

R-1 SHOPPING LIST - Item No. 160 - 28 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis										DATE:		May 2009	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT							Project Number and Name		Project Number and Name	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7			PE 0101221N Strategic Sub & Wpns Sys Spt							0951 Joint Warhead Fuze Sustainment			
Cost Categories	Contract Method & Type	Performing Activity &	Total PY's Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
<u>Support & Management</u>													
Joint Warhead Fuze Sustainment	TBD	TBD	0.000	0.000	N/A	0.000	N/A	23.066	TBD				
Subtotal Product Development			0.000	0.000		0.000		23.066					
Remarks:													
Total Cost			0.000	0.000		0.000		23.066					

R-1 SHOPPING LIST - Item No. 160 - 29 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 160 - 30 of 48

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4a, Schedule Detail						DATE:		May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					Project Number and Name 0951 Joint Warhead Fuze Sustainment				
Fiscal Year	CY-2008	2009	2010						
Contract Go-ahead and Milestones			2Q						
Define Technical Requirements			2-4Q						
Technology Development Strategies			2-4Q						
Design Demonstration			4Q						
Assembly Level Testing			4Q						
Capabilities Assessment			2-4Q						
General JCIDS Support			2-4Q						
General Acquisition Planning Support			2-4Q						

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					PROJECT NUMBER AND NAME J3198 Underwater Launch Missile System			
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost J3198 Underwater Launch Missile System	0.000	9.973	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION								
The Underwater Launch Missile System (ULMS) effort develops capabilities definitions and assessments, science & technology development strategies, and conceptual work to prepare for R&D and future prototyping.								

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: J3198 Underwater Launch Missile System	

B. (U) Accomplishments/Planned Program

	FY2008	FY2009	FY2010
Project Cost J3198 Underwater Launch Missile System	0.000	9.973	0.000
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2009 PLAN

(U) (\$9.973) The Underwater Launch Missile System (ULMS)

FY 2009 efforts include:

- (U) Develop Joint Capabilities Integrated Development System (JCIDS) required Capabilities-based Assessments to achieve an approved Initial Capabilities Document (ICD).
- (U) Develop technology assessments and roadmap leading to approved Technology Development Strategy (TDS).
- (U) Develop concepts for top-level integration studies, to analyze performance and cost drivers, and to begin analysis of alternatives.
- (U) Develop, update and exercise design and modeling tools including cost modeling methodology for total-ship integration.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					Project Number and Name		Project Number and Name			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7			PE 0101221N Strategic Sub & Wpns Sys Spt					J3198 Underwater Launched Missile Study		J3198 Underwater Launched Missile Study			
Cost Categories	Contract Method & Type	Performing Activity &	Total PYS Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
<u>Support & Management</u>													
Underwater Launched Missile	MIPR	WHS/DC	0.000	0.000	NA	2.200	01-09	0.000	NA				
Underwater Launched Missile	CPFF	NSEA/DC	0.000	0.000	NA	0.457	01-09	0.000	NA				
Underwater Launched Missile	CPFF	NSEA/DC	0.000	0.000	NA	0.100	01-09	0.000	NA				
Underwater Launched Missile	WR	NSWC/VA	0.000	0.000	NA	0.550	12-08	0.000	NA				
Underwater Launched Missile	CPFF	GDEB/CT	0.000	0.000	NA	4.000	03-09	0.000	NA				
Underwater Launched Missile	Various	Various/TBD	0.000	0.000	NA	2.666	TBD	0.000	NA				
Subtotal Product Development			0.000	0.000		9.973		0.000					
Remarks:													
Total Cost			0.000	0.000		9.973		0.000					
Remarks: Contracted effort will be for Program Management Support, JCIDS, Acquisition Decision Documentation Support, studies, and analysis to support early acquisition decisions and milestones. Support will be contracted from SSP prime contractors, support contractors, and national laboratories.													

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				PROJECT NUMBER AND NAME 9C47A Advanced Linear Accelerator (LINAC) Facility			
COST (\$ in Millions)	FY2008	FY2009	FY2010				
Project Cost 9C47A Advanced Linear Accelerator (LINAC) Facility	2.892	3.191	0.000				
RDT&E Articles Qty	0.000	0.000	0.000				
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION The Free Electron Laser Program is for advanced capability Linear Accelerator (LINAC) to include a three stage accelerator section and an electron storage ring that will reduce the main limitations (electrical noise and micro-beam structure) of current LINAC technology. The enhanced LINAC will allow future large chips to be tested while meeting strategic test requirements. This Congressional add belongs to SSP.							

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: 9C47A Advanced Linear Accelerator (LINAC) Facility	

B. (U) Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010
Project Cost 9C47A Advanced Linear Accelerator (LINAC) Facility	2.892	3.191	0.000
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2008 PLAN

(U) (\$2.892)The Free Electron Laser Program is for advanced capability Linear Accelerator (LINAC) to include a three stage accelerator section and an electron storage ring that will reduce the main limitations (electrical noise and micro-beam structure) of current LINAC technology. The enhanced LINAC will allow future large chips to be tested while meeting strategic test requirements. This Congressional Add belongs to SSP.

FY 2008 efforts include:

(U) Continue work on the Free Electron Laser Program and the advanced capability Linear Accelerator (LINAC).

(U) FY 2009 PLAN

(U) (\$3.191)The Free Electron Laser Program is for advanced capability Linear Accelerator (LINAC) to include a three stage accelerator section and an electron storage ring that will reduce the main limitations (electrical noise and micro-beam structure) of current LINAC technology. The enhanced LINAC will allow future large chips to be tested while meeting strategic test requirements. This Congressional Add belongs to SSP.

FY 2009 efforts include:

(U) Continue work on the Free Electron Laser Program and the advanced capability Linear Accelerator (LINAC).

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		9E08A Adelos National Security Sensor System	

COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 9E08A Adelos National Security Sensor System	0.000	1.995	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

The Adelos National Security Sensor System effort develops an advanced fiber optic sensor systems for counterterrorism and antiterrorism operations to meet rigorous performance metrics necessary for nuclear facility, material, and weapons protection. The Adelos component will evaluate the use of advanced classification algorithms for reduction of false positive detections of objects in proximity to fiber optic sensing elements. Adelos program also seeks to expand the application of a unique fiber optic sensor system designed to provide covert surveillance and intelligence gathering of potential threats to our nation's nuclear activity.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: 9E08A Adelos National Security Sensor System	
B. (U) Accomplishments/Planned Program			
	FY 2008	FY 2009	FY 2010
Project Cost 9E08A Adelos National Security Sensor System	0.000	1.995	0.000
RDT&E Articles Quantity	0.000	0.000	0.000
(U) FY 2009 PLAN (U) (\$1.995) The Adelos National Security Sensor System effort develops an advanced fiber optic sensor systems for counterterrorism and antiterrorism operations to meet rigorous performance metrics necessary for nuclear facility, material, and weapons protection. The Adelos component will evaluate the use of advanced classification algorithms for reduction of false positive detections of objects in proximity to fiber optic sensing elements. Adelos program also seeks to expand the application of a unique fiber optic sensor system designed to provide covert surveillance and intelligence gathering of potential threats to our nation's nuclear activity. FY 2009 efforts include: (U) Begin work to expand the application of the BLUE ROSE fiber optic sensor system to meet nuclear weapons and facilities metrics. (U) Develop and test algorithms designed to classify identified targets and reduce false positive readings.			

R-1 SHOPPING LIST - Item No. 160 - 39 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 160 - 40 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7						PROJECT NUMBER AND NAME 9E09A Enhanced Special Weapons Nuclear Weapons Security		
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 9E09A Enhanced Special Weapons Nuclear Weapons Security	0.000	1.596	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

The Enhanced Special Weapons/Nuclear Weapons Security effort supports the development of the Adelos fiber optic sensor system for the advanced detection, tracking, and classification of potential threat targets by employing advanced digital acoustic watermarking algorithms within a secure network for steganographic techniques to convey the classification and location information within the digital audio signal produced by the Adelos application software.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME:	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		9E09A Enhanced Special Weapons Nuclear Weapons Security	

B. (U) Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010
Project Cost 9E09A Enhanced Special Weapons Nuclear Weapons Security	0.000	1.596	0.000
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2009 PLAN

(U) (\$1.596) The Enhanced Special Weapons/Nuclear Weapons Security effort supports the development of the Adelos fiber optic sensor system for the advanced detection, tracking, and classification of potential threat targets by employing advanced digital acoustic watermarking algorithms within a secure network for steganographic techniques to convey the classification and location information within the digital audio signal produced by the Adelos application software.

FY 2009 efforts include:

- (U) Begin work in support of communication capabilities to convey classification and location information produced by the Adelos application.
- (U) Develop and test algorithms designed to transit data within a secure network using steganographic techniques.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					PROJECT NUMBER AND NAME 9E11A Covert Robust Location Aware Wireless Network			
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 9E11A Covert Robust Location Aware Wireless Network	0.000	1.596	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION The Covert Robust Location Aware Wireless Network (CROWN) program develops a key foundation technology enabler to provide communication between multiple assets for a covert network capability that could be used on the submarine as a wireless network, and as a method to improve relative terminal accuracy that cannot be met today, especially in jammed or spoofed battlefields. The CROWN program provides the military precision relative location determination, tracking in a jammed environment, and high data rate communications with a low probability of being detected or intercepted by adversaries.								

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	PROJECT NUMBER AND NAME: 9E11A Covert Robust Location Aware Wireless Network	

B. (U) Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010
Project Cost 9E11A Covert Robust Location Aware Wireless Network	0.000	1.596	0.000
RDT&E Articles Quantity	0.000	0.000	0.000

(U) FY 2009 PLAN

(U) (\$1.596) The Covert Robust Location Aware Wireless Network (CROWN) program develops a key foundation technology enabler to provide communication between multiple assets for a covert network capability that could be used on the submarine as a wireless network, and as a method to improve relative terminal accuracy that cannot be met today, especially in jammed or spoofed battlefields. The CROWN program provides the military precision relative location determination, tracking in a jammed environment, and high data rate communications with a low probability of being detected or intercepted by adversaries.

FY 2009 efforts include:

(U) Begin work on the development of a key foundation technology enabler in support of the Covert Robust Location Aware Wireless Network.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-3, Cost Analysis										DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				Project Number and Name				Project Number and Name			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				PE 0101221N Strategic Sub & Wpns Sys Spt				9E11A Covert Robust Location Aware Wireless Network							
Cost Categories	Contract Method & Type	Performing Activity &	Total PYs Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
<u>Support & Management</u>															
Covert Robust Location Aware Wireless network	SS-BOA	IEC/CA	0.000	0.000	N/A	1.596	04-09	0.000	N/A						
Subtotal Product Development			0.000	0.000		1.596		0.000							
Remarks:															
Total Cost			0.000	0.000		1.596		0.000							

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					PROJECT NUMBER AND NAME 9E12A Maritime Security-Surface and Sub-surface Surveillance			
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Project Cost 9E12A Maritime Security-Surface and Sub-surface Surveillance	0.000	3.590	0.000					
RDT&E Articles Qty	0.000	0.000	0.000					
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION								
The Maritime Security- Surface and Sub-Surface Surveillance effort supports the development of the Quad-S Seaport Security System. The Quad-S Program develops a tactical surveillance and reconnaissance system in support of real-time monitoring of the complete spectrum of the maritime domain – underwater, surface, air, associated landside environments and individuals within those environments. This funding will also develop a needed year-round test bed, to evaluate and test emerging maritime technologies against the operational capabilities needed by the U.S. Navy.								

R-1 SHOPPING LIST - Item No. 160 -46 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		PROJECT NUMBER AND NAME: 9E12A Maritime Security-Surface and Sub-surface Surveillance	
B. (U) Accomplishments/Planned Program			
	FY 2008	FY 2009	FY 2010
Project Cost 9E12A Maritime Security-Surface and Sub-surface Surveillance	0.000	3.590	0.000
RDT&E Articles Quantity	0.000	0.000	0.000
(U) FY 2009 PLAN (U) (\$3.590) The Maritime Security- Surface and Sub-Surface Surveillance effort supports the development of the Quad-S Seaport Security System. The Quad-S Program develops a tactical surveillance and reconnaissance system in support of real-time monitoring of the complete spectrum of the maritime domain – underwater, surface, air, associated landside environments and individuals within those environments. This funding will also develop a needed year-round test bed, to evaluate and test emerging maritime technologies against the operational capabilities needed by the U.S. Navy. FY 2009 efforts include: (U) Begin work in support of the Quad-S Seaport Security System. (U) Develop a year round test bed to develop and test potential nuclear weapons security technologies.			

R-1 SHOPPING LIST - Item No. 160 - 47 of 48

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 160 - 48 of 48

UNCLASSIFIED

CLASSIFICATION:		UNCLASSIFIED																																																																							
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION								DATE May 2009																																																																	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT																																																																					
COST (In Millions)				FY 2008	FY 2009	FY 2010																																																																			
Total PE Cost				3.923	7.358	7.211																																																																			
1265 / Sub Defense Warfare				3.923	7.358	7.211																																																																			
A. MISSION DESCRIPTION: This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all classes of US Submarines. Next Generation Countermeasure (NGCM) efforts entail simulating and determining the effectiveness of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other RDT&E initiatives. New and emerging hardware and software are rigorously evaluated in a representative acoustic environment through both digital and hardware-in-the-loop simulations, to determine their readiness for inserting this technology into the NGCM. 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 style="text-align: left;">FY09 President's Budget</td> <td style="text-align: center;">4.062</td> <td style="text-align: center;">7.384</td> <td style="text-align: center;">7.628</td> </tr> <tr> <td style="text-align: left;">FY10 President's Budget</td> <td style="text-align: center;">3.923</td> <td style="text-align: center;">7.358</td> <td style="text-align: center;">7.211</td> </tr> <tr> <td style="text-align: left;">Total Adjustments</td> <td style="text-align: center;">-0.139</td> <td style="text-align: center;">-0.026</td> <td style="text-align: center;">-0.417</td> </tr> <tr> <td style="text-align: left;">(U) Summary of Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left;">Congressional Rescissions</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 style="text-align: left;">Congressional Adjustments</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">-0.020</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td style="text-align: left;">SBIR/STTR/FTT Assessment</td> <td style="text-align: center;">-0.034</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td style="text-align: left;">Program Adjustments</td> <td style="text-align: center;">-0.105</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">-0.297</td> </tr> <tr> <td style="text-align: left;">Rate/Misc Adjustments</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">-0.006</td> <td style="text-align: center;">-0.120</td> </tr> <tr> <td style="text-align: left;">Total</td> <td style="text-align: center;">-0.139</td> <td style="text-align: center;">-0.026</td> <td style="text-align: center;">-0.417</td> </tr> </table> C. OTHER PROGRAM FUNDING SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Line Item No. and Name</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> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left;">OPN - 221000/221005 Submarine Acoustic Warfare Systems</td> <td style="text-align: center;">16.815</td> <td style="text-align: center;">20.795</td> <td style="text-align: center;">20.681</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> D. ACQUISITION STRATEGY:										Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	4.062	7.384	7.628	FY10 President's Budget	3.923	7.358	7.211	Total Adjustments	-0.139	-0.026	-0.417	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-0.020	0.000	SBIR/STTR/FTT Assessment	-0.034	0.000	0.000	Program Adjustments	-0.105	0.000	-0.297	Rate/Misc Adjustments	0.000	-0.006	-0.120	Total	-0.139	-0.026	-0.417	Line Item No. and Name	FY 2008	FY 2009	FY 2010							OPN - 221000/221005 Submarine Acoustic Warfare Systems	16.815	20.795	20.681						
Funding:	FY 2008	FY 2009	FY 2010																																																																						
FY09 President's Budget	4.062	7.384	7.628																																																																						
FY10 President's Budget	3.923	7.358	7.211																																																																						
Total Adjustments	-0.139	-0.026	-0.417																																																																						
(U) Summary of Adjustments																																																																									
Congressional Rescissions	0.000	0.000	0.000																																																																						
Congressional Adjustments	0.000	-0.020	0.000																																																																						
SBIR/STTR/FTT Assessment	-0.034	0.000	0.000																																																																						
Program Adjustments	-0.105	0.000	-0.297																																																																						
Rate/Misc Adjustments	0.000	-0.006	-0.120																																																																						
Total	-0.139	-0.026	-0.417																																																																						
Line Item No. and Name	FY 2008	FY 2009	FY 2010																																																																						
OPN - 221000/221005 Submarine Acoustic Warfare Systems	16.815	20.795	20.681																																																																						

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	R-1 ITEM NOMENCLATURE 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	
This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all classes of US Submarines. In FY08, Achieve Milestone B and begin award of competitive contract for integration of technology inserts into the Next Generation Countermeasure (NGCM). Contractor testing will be conducted in FY 10. E. MAJOR PERFORMERS: NUWC NPT/ TBD NGCM Competitive Contract Award.		

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT		PROJECT NUMBER AND NAME 1265/Sub Defense Warfare
COST (In Millions)	FY 2008	FY 2009	FY 2010	
Project Cost	3.923	7.358	7.211	
RDT&E Articles Qty	0	0	0	
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all classes of US Submarines. Next Generation Countermeasure (NGCM) efforts entail simulating and determining the effectiveness of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other RDT&E initiatives. New and emerging hardware and software are rigorously evaluated in a representative acoustic environment through both digital and hardware-in-the-loop simulations, to determine their readiness for inserting this technology into the NGCM.				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMEN	PROJECT NUMBER AND NAME 1265/Sub Defense Warfare	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Weapons Analysis Facility (WAF) Analysis	1.500	1.500	1.500
RDT&E Articles Quantity	0	0	0
FY 08-10 - Continue to conduct countermeasure proofing and effectiveness analysis for designated torpedo at Weapons Analysis Facility (WAF).			
	FY 2008	FY 2009	FY 2010
Next Generation Countermeasure (NGCM)	2.423	5.858	5.711
RDT&E Articles Quantity	0	0	0
FY08 - Continue transitioning of Future Naval Capability (FNC) technologies into existing fleet countermeasures including ACCOMS, and Fire Through Friendly Fire. Achieve Milestone B.			
FY 09-10 - Continue integration of technology inserts.			
FY10 - Conduct Contractor Testing.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT					PROJECT NUMBER AND NAME 1265/Sub Defensive Warfare					
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			
WAF ANALYSIS SYSTEM ENGINEERING	WR	NUWC Newport, RI	4.500	1.500		1.500	DEC-08	1.500	DEC-09			
NGCM SYSTEM ENGINEERING	WR	NUWC Newport, RI	6.092	1.513		0.347	DEC-08	0.350	DEC-09			
NGCM DEVELOPMENT	C/CPAF	Contractor - TBD	0.600	0.600		5.161	FEB-09	4.961	FEB-10			
NGCM SYSTEM ENGINEERING	WR	NUWC Keyport, WA	0.010	0.010		0.050	DEC-08	0.050	DEC-09			
Subtotal Product Development			11.202	3.623		7.058		6.861				
Remarks:												
PROGRAM MANAGEMENT SUPPORT	FFF	EG&G Gaithersburg, MD	0.645	0.250		0.000		0.000				
TRAVEL	WR	PMS415	0.150	0.050		0.050	NOV-08	0.050	NOV-09			
PROGRAM MANAGEMENT SUPPORT	C/CPAF	TECH Marine Burke ,VA	0.000	0.000		0.250	MAR-09	0.300	FEB-10			
Subtotal Management Services			0.795	0.300		0.300		0.350				
Remarks:												
Total Cost			11.997	3.923		7.358		7.211				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	
		PROJECT NUMBER AND NAME 1265/Sub Defensive Warfare	
	FY 08	FY 09	FY 10
	CM Effectiveness / WAF Threat Vulnerability		
TORPEDO DEFENSE WORKING GROUP (TDWG) / NEXT GENERATION COUNTERMEASURE (NGCM)	ACCOMS		
	Fire Through Friendly Fire	Integration of Technology Inserts	
		DRR	Contractor Testing
	MSB		
			Contract Award

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4a, SCHEDULE DETAIL			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0101226N/SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	
		PROJECT NUMBER AND NAME 1265/Sub Defensive Warfare	
Schedule Profile	FY 2009	FY 2010	
NGCM/ TDWG			
Integration of Technology Insertions	Q1-Q4	Q1-Q2	
Milestone B	Q3		
Contract Award		Q1	
Contractor Testing		Q3-Q4	

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0101402N, NAVY STRATEGIC COMMUNICATIONS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	35.636	43.296	43.982					
3002 NAVY STRATEGIC COMMUNICATIONS BLOCK I	35.636	43.296	43.982					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (3002) The E-6B Block I modification program corrects Airborne National Command Post program Follow-On Operational Test and Evaluation operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I designs, develops, integrates, and tests a Multi-level Security system, Open Systems Architecture; replaces the intercommunications and Mission Computer Set; modifies the cooling, electrical, and Ultra-High Frequency Command, Control and Communications system; and addresses Internet Protocol Bandwidth Expansion impacts to pre-Block I baseline aircraft. Block I adds operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provides a foundation for evolutionary upgrades. Other modifications (BLOCK 1A) include: an additional Auxiliary Power Unit to enhance power and cooling capabilities supporting the additional systems in the Multi-level Security system, Open Systems Architecture, a Very Low Frequency Transmitter obsolescence replacement, and a High Power Transmit Set subsystem refurbishment.								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0101402N, NAVY STRATEGIC COMMUNICATIONS																																												
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 35%;">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>Previous President's Budget:</td> <td style="text-align: right;">35.777</td> <td style="text-align: right;">47.495</td> <td style="text-align: right;">44.594</td> </tr> <tr> <td>Current President's Budget:</td> <td style="text-align: right;">35.636</td> <td style="text-align: right;">43.296</td> <td style="text-align: right;">43.982</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.141</td> <td style="text-align: right; border-top: 1px solid black;">-4.199</td> <td style="text-align: right; border-top: 1px solid black;">-0.612</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;">-4.081</td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td style="text-align: right;">-0.141</td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">-0.601</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-0.118</td> <td style="text-align: right;">-0.011</td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-0.141</td> <td style="text-align: right; border-top: 1px solid black;">-4.199</td> <td style="text-align: right; border-top: 1px solid black;">-0.612</td> </tr> </tbody> </table> Schedule: Block IA Request for Proposal, Contract Award, Systems Integration Lab (SIL) installation and Prototype Aircraft installation slipped to the right due to FY08 team staffing shortfalls and the requirement to update and staff the Acquisition Plan to accompany the Justification and Approval. Block I Aircraft Contractor / Developmental Testing (CT / DT) extended into the 2Q of FY10 to address aircraft hardware-software integration issues and reduce system defects prior to the start of Government Development Testing. Aircraft Developmental Testing is planned to start in May 2009. Milestone C, Low Rate Initial Production (LRIP) contract award, and the LRIP phase have been delayed into 4Q FY10 commensurately. Technical: Not Applicable			Funding:	FY08	FY09	FY10	Previous President's Budget:	35.777	47.495	44.594	Current President's Budget:	35.636	43.296	43.982	Total Adjustments	-0.141	-4.199	-0.612	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments		-4.081		SBIR/STTR/FTT Assessments	-0.141			Program Adjustments			-0.601	Rate/Misc Adjustments		-0.118	-0.011	Subtotal	-0.141	-4.199	-0.612
Funding:	FY08	FY09	FY10																																											
Previous President's Budget:	35.777	47.495	44.594																																											
Current President's Budget:	35.636	43.296	43.982																																											
Total Adjustments	-0.141	-4.199	-0.612																																											
Summary of Adjustments																																														
Congressional Rescissions																																														
Congressional Adjustments		-4.081																																												
SBIR/STTR/FTT Assessments	-0.141																																													
Program Adjustments			-0.601																																											
Rate/Misc Adjustments		-0.118	-0.011																																											
Subtotal	-0.141	-4.199	-0.612																																											

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS			PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	35.636	43.296	43.982					
RDT&E Articles Qty	1		2					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-6B Block I modification program corrects Airborne National Command Post program Follow-On Operational Test and Evaluation operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I designs, develops, integrates, and tests a Multi-level Security (MLS) system, Open Systems Architecture (OSA); replaces the intercommunications and Mission Computer Set; modifies the cooling, electrical, and Ultra-High Frequency Command, Control and Communications system; and addresses Internet Protocol Bandwidth Expansion impacts to pre-Block I baseline aircraft. Block I adds operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provides a foundation for evolutionary upgrades. Other modifications (BLOCK 1A) include: an additional Auxiliary Power Unit to enhance power and cooling capabilities supporting the additional systems in the Multi-level Security system, Open Systems Architecture, a Very Low Frequency Transmitter obsolescence replacement, and a High Power Transmit Set subsystem refurbishment.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS	PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I	
B. Accomplishments/Planned Program			
MANAGEMENT AND OVERSIGHT	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	3.676	8.242	5.715
RDT&E Articles Quantity			
Funding supports Government acquisition planning, acquisition strategy adjustment, requirements analysis, industry conferences, Department of Defense (DoD) 5000 Series document development and revision, program management, technical reviews, oversight, SIL and aircraft modification and test, contract management; design, test readiness, and Contract Data Requirements List (CDRL) reviews; functional and physical configuration audits; technical interchange and program management meetings; development and operational test planning, execution, and reporting in support of Government review and design approval of Block I and IA modifications. Development of design changes to accommodate Internet Protocol Bandwidth Expansion (IPBE) impacts and the Block IA increment began in FY08.			
ACQUISITION DEVELOPMENT & SUPPORT	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	1.653	3.464	1.135
RDT&E Articles Quantity			
Funding will be used to buy contract support services to perform engineering, management, trade studies, and analysis to develop acquisition documents; plan logistics and training; develop and monitor schedules and revisions to DoD 5000 series documents; attend industry conferences; perform engineering and architectural studies and analyses; modify and test the SIL and aircraft; conduct functional and physical configuration audits; and review CDRL for Block I and IA modifications. Development of design changes to accommodate IPBE impacts and the Block IA increment started in FY08.			
PROTOTYPE AIRCRAFT INDUCTION	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	30.307	30.068	34.879
RDT&E Articles Quantity	1		2
Funding supports tasks allotted to the prime contract including; program initiation, engineering research, design development, integration and test of Block I and IA systems; preparation and presentation of the Block I and IA designs and test readiness reviews; SIL and aircraft modification, functional and physical configuration audits; contractor developmental test planning, leading to Low Rate Initial Production approval and award. Development of design changes to accommodate IPBE impacts and the Block IA increment began in FY08.			

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0101402N, NAVY STRATEGIC COMMUNICATIONS	PROJECT NUMBER AND NAME 3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I												
B. Accomplishments/Planned Program (Cont.) <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"><tr><td style="width: 30%; padding: 5px;">DEVELOPMENTAL/OPERATIONAL TESTING</td><td style="width: 15%; padding: 5px; text-align: center;">FY 08</td><td style="width: 15%; padding: 5px; text-align: center;">FY 09</td><td style="width: 15%; padding: 5px; text-align: center;">FY 10</td></tr><tr><td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td><td style="padding: 5px;"></td><td style="padding: 5px; text-align: center;">1.522</td><td style="padding: 5px; text-align: center;">2.253</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></tr></table> Funding supports Developmental Testing and Operational Testing.			DEVELOPMENTAL/OPERATIONAL TESTING	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost		1.522	2.253	RDT&E Articles Quantity			
DEVELOPMENTAL/OPERATIONAL TESTING	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost		1.522	2.253											
RDT&E Articles Quantity														

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N, Navy Strategic Communications	PROJECT NUMBER AND NAME 3002, Navy Strategic Communications Block I									
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>056400 E-6 A/B SERIES (P1#-45)</td> <td>84.589</td> <td>88.632</td> <td>102.646</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Competitively awarded Cost Plus Award Fee (CPAF) development contract and Cost Plus Incentive Fee (CPIF) Low Rate Initial Production (LRIP) option with sole source follow-on Firm Fixed Price (FFP) Full Rate Production (FRP) contract. The current contract was modified on 13 April 2007 to a CPIF contract.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	056400 E-6 A/B SERIES (P1#-45)	84.589	88.632	102.646
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
056400 E-6 A/B SERIES (P1#-45)	84.589	88.632	102.646									

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0101402N, NAVY STRATEGIC COMMUNICATIONS			3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost							
Primary Hardware Development	C/CPIF	Rockwell Collins, Ced	113.400	18.349	01/09	9.534	01/10						
Award Fee	C/CPAF	Rockwell Collins, Ced	3.751										
Primary Hdw Development	C/CPIF	TBD		10.519	Various	25.345	Various						
Training Development WST	C/CPIF	TBD		1.200	06/09								
Subtotal Product Development			117.151	30.068		34.879							
Remarks: The Rockwell Collins Primary Hardware contract was converted from a Competively Awarded/Cost plus Award Fee to a Competively Awarded/Cost plus Incentive beginning in FY07													
Studies and Analyses	RX	VARIOUS	4.377	0.035	04/09								
Subtotal Support			4.377	0.035		0.000							

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0101402N, Navy Strategic Communications			3002, Navy Strategic Communication Block I							
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	NAVAIR HQ, Pax River, MD		1.522	12/08	0.105	12/09						
Operational Test & Evaluation	WX	NAVAIR HQ, Pax River, MD				2.148	12/09						
Subtotal T&E			0.000	1.522		2.253							
Remarks:													
Contractor Engineering Support	RX	Various	10.065	2.054	12/08	0.768	12/09						
Government Engineering Support	WX	Various	27.166	7.942	12/08	5.566	12/09						
Program Management Support	RX	Various	8.962	1.375	12/08	0.216	12/09						
Travel	TO	NAVAIR HQ, Pax River, MD	0.989	0.300	Various	0.300	Various						
Subtotal Management			47.182	11.671		6.850							
Remarks:													
Total Cost			168.710	43.296		43.982							
Remarks:													

UNCLASSIFIED

EXHIBIT R4, Schedule Profile												DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME			
RDT&E, N / BA-7				0101402N, Navy Strategic Communications								3002, Navy Strategic Communications Block I			
Fiscal Year	2008				2009				2010						
	1	2	3	4	1	2	3	4	1	2	3	4			
Acquisition Milestones															
Source Selection															
Contract Award / Modifications															
Design Readiness Review															
Milestone C															
System Development															
System Integration Lab (SIL) Install															
Prototype Aircraft (A/C) Installation															
Test & Evaluation Milestones															
Contractor/Developmental															
Operational Test (OPEVAL)															
Production Milestones															
LRIP Phase															
Full Rate Production Decision/Start															
First Deployment															
Full Rate Production															
IOC															

UNCLASSIFIED

Exhibit R-4a, Schedule Detail			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0101402N, Navy Strategic Communications		PROJECT NUMBER AND NAME 3002, Navy Strategic Communications Block I	
Schedule Profile	FY 2008	FY 2009	FY 2010	
Systems Integration Lab (Blk I)	1Q-3Q			
Source Selection (Blk IA)	3Q-4Q	1Q-4Q		
SIL Contractor/Developmental Testing (CT/DT) (Blk I)	3Q-4Q	1Q-4Q		
Prototype Aircraft Installation (Blk I)	2Q-4Q	1Q		
Contract Award (Blk IA)		4Q		
A/C Contractor/Developmental Testing (CT/DT) (Blk I)		2Q-4Q	1Q-2Q	
Milestone C (MS-C) (Blk I)			3Q	
Contract Award Low Rate Initial Production (LRIP) (Blk I)			3Q	
Operational Testing (OPEVAL) (Blk I)			2Q	
Systems Integration Lab (Blk IA)			4Q	
Prototype Aircraft Installation (Blk IA)			4Q	
LRIP Phase			3Q-4Q	
SIL Contractor/Developmental Testing (CT/DT) (Blk IA)			2Q-4Q	
A/C Contractor/Developmental Testing (CT/DT) (Blk IA)			3Q-4Q	
Full Rate Production (FRP) Decision/Start (Blk I)				
Full Rate Production (FRP) (Blk I)				
Operational Testing (OPEVAL) (Blk IA)				
First Deployment (Blk I)				
Full Rate Production (FRP) Decision/Start (Blk IA)				
Milestone C (MS-C) (Blk IA)				
Full Rate Production (FRP) Contract Award (Blk IA)				
Full Rate Production (FRP) (Blk IA)				
Initial Operational Capability (IOC) (Blk I)				
First Deployment (Blk IA)				
Initial Operational Capability (IOC) (Blk IA)				

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
Total PE	38.796	34.326	39.125
3126 RAPID TECHNOLOGY TRANSITION (RTT)	28.692	28.295	30.254
3174 RAPID DEVELOPMENT & DEPLOYMENT	9.333	6.031	8.871
9999 CONGRESSIONAL PLUS-UPS	0.771	0.000	0.000

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the Rapid Technology Transition (RTT) program and the Technology Insertion Program for Savings (TIPS) is to increase the rate that new, innovative, and potentially disruptive technologies are inserted into DON acquisition programs and the hands of the warfighter. The RTT program transitions technology from any source, including those not traditionally associated with defense technology. TIPS increases the rate that new cutting edge technologies are inserted into DON acquisition programs in order to significantly reduce operations and maintenance support costs. An effective and robust integration of commercial and military technologies can reduce costs and improve naval capabilities by keeping pace with the fast moving changes in technologies and operational needs. These programs are structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

Rapid transition opportunities occur when a sufficiently mature technology is identified that can meet a particular need on a timetable which matches that of an acquisition program, and is supported by a business case which justifies the associated cost and schedule risk. The combination of circumstances which create such opportunities can appear, and disappear, well inside the Program Objectives Memorandum (POM) cycle. These programs are designed to be pro-active in identifying opportunities and to work with resource sponsors,

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

fleet and force users, and Program Managers (PMs) in constructing viable technology transition deals one at a time.

To ensure the widest possible awareness of emergent commercial technology opportunities, these programs interact with the venture capital community and industry. These programs coordinate closely with Program Executive Offices (PEOs) and PMs to maintain awareness of insertion opportunities. Utilizing existing authorities, RTT applies execution year funds where necessary to "jump-start" transitions so they can be inserted and validated by Sea Trial experiments leading directly to deployment and/or demonstrations of high risk/high payoff technologies. This Program Element is the only Navy program that addresses current, urgent requirements that are required by the fleet within a 18-24 month period. As such, planning and execution are accomplished within the same fiscal year, which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

B. PROGRAM CHANGE SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
President's Budget 2009	39.778	34.469	45.592
Congressional Program Reductions	0.000	-0.098	0.000
Program Adjustments	0.000	0.000	-6.484
Rate/Misc Adjustments	-0.014	-0.045	0.017
SBIR/STTR Transfer	-0.296	0.000	0.000
Total Reprogrammings	-0.672	0.000	0.000
President's Budget 2010	38.796	34.326	39.125

PROGRAM CHANGE SUMMARY EXPLANATION:

Technical: Not applicable.

Schedule: Not applicable.

C. OTHER PROGRAM FUNDING SUMMARY:

Not applicable.

D. ACQUISITION STRATEGY:

Not applicable.

E. PERFORMANCE METRICS:

The RTT program will, at a minimum, initiate 5-8 new deals a year that provide for new, innovative, and potentially disruptive technology being inserted into DON acquisition programs. The RTT deals will have a greater than 80% success rate of insertion and fielding of technology into DON warfighting systems.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3126

PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
3126 RAPID TECHNOLOGY TRANSITION (RTT)	28.692	28.295	30.254

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the RTT project is to increase the rate that new, innovative, and potentially disruptive technologies are inserted into DON acquisition programs and the hands of the warfighter. A key aspect of the RTT project is its charter to transition technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs and improve naval capabilities by keeping pace with the fast moving changes in technologies and operational needs. The RTT project is structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

The mission of the Technology Insertion Program for Savings (TIPS) is to increase the rate that new cutting edge technologies are inserted into DON acquisition programs in order to significantly reduce operations and maintenance support costs. The program is structured to rapidly transition applicable commercial off-the-shelf solutions and late-stage development technologies from any source to meet an immediate need. TIPS provides execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROJECT NUMBER: 3126

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
RTT	28.692	28.295	30.254

FY 2008 Accomplishments:

- Continued the following RTT projects: Digital RF Memory (DRFM) Jammer; Subnet Relay (SNR) and High Frequency Internet Protocol (HF IP); Communications T/FDOA (Time / Frequency Difference of Arrival) Geo-location; Submarine Tactical Paging at Speed and Depth; Deployable Alternative Energy Module (DAEM); Airborne Communications Package Automated Digital Network System (ADNS) Airborne Network Node; Expedient Airfield Damage Repair (ADR); Sparsely Populated Volumetric Array Acoustic Intercept Sensor Enhancing Submarine Passive Broadband Detection and Localization (SPVA PBB); Joint Mission Planning System Expeditionary SPF (JMPS-E); CLUSTER BIGHT Optical Subsystem (CBOS); Cryogenic Filters; MPU with Commercial Stirling Cooler; and Littoral Combat Ship Mission Package Networked Tactical Training System (LCS NTTS).
- Continued the following TIPS projects: Sprayable Dielectric Shield Coatings effort; and Normal Fuel Oil Tanks and Littoral Combat Ship Virtual Maintenance Performance Aid in collaboration with RTT LCS - Network Transition Training System. Primary objectives of these projects are cost savings and reducing Operations and Support costs.
- Completed the following TIPS projects: Non-Skid Coatings, Modified Atmosphere Packaging System and Heat Induction Based Coating Removals TIPS projects.
- Completed the following RTT projects: Hawkeye 2000 Open Architecture Mission Computer; Airborne Networking Architecture; BA-5590 Battery with State of Charge Indicator; Virtual Simulation Training (ViSiT) Toolkit; Automatic Identification System (AIS) Integration; Expanded Maritime Intercept Operations (EMIO) Wireless Reachback Effort; Ground Laser Target Designator (GLTD-II) Battery Reduction Effort; and Software Defined Hand-Held Radio Test Set (SDHHTS).
- Initiated the following RTT projects: Riverine Patrol Boat Protection; Wireless Networks for Embarked Forces; Joint Standoff Weapon (JSOW-C) Target of Opportunity (TOO) Mode Employment; Ku/Ka-band SATCOM On-The-Move (OTM) Antenna Capability for CONDOR; Pocket Charger; Multistatic Active Capability Enhancements (MACE); Interim Surface Ship ASW Trainer For Surface Warfare Enterprise (SWE) Participation In Fleet Synthetic Training (FST) Events; Dismounted Infantry Simulation Interface (DISI); Non-Organic Over the Horizon Intelligence, Surveillance and Reconnaissance (ISR); Standoff Land Attack Missile - Expanded Response (SLAM-ER) Land Moving Target/Littoral Surveillance Radar System (LSRS) Validation; and Expand 4/5 Synthetic Aperture

R1 Line Item 164

Page 5 of 11

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3126

PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

Radar (SAR) Mapping; and Physical Screening Protection.

- Initiated the following TIPS projects: Wireless Blade Monitoring System (WBMS); Sonar Cable Connectors; Valve Regulated Batteries (VRLA); and Air Intercept Missile (AIM)-9 Cryo Engine.

FY 2009 Plans:

- Continue all FY 2008 efforts less those noted as completed above.
- Complete the following RTT projects: Digital RF Memory (DRFM) Jammer; Subnet Relay (SNR) and High Frequency Internet Protocol (HF IP); Communications T/FDOA (Time / Frequency Difference of Arrival) Geo-location; Submarine Tactical Paging at Speed and Depth; Deployable Alternative Energy Module (DAEM); Airborne Communications Package ADNS Airborne Network Node; Expedient Airfield Damage Repair (ADR); Sparsely Populated Volumetric Array Acoustic Intercept Sensor Enhancing Submarine Passive Broadband Detection and Localization (SPVA PBB); Joint Mission Planning System Expeditionary SPF (JMPS-E); CLUSTER BIGHT Optical Subsystem (CBOS); Cryogenic Filters; MPU with Commercial Stirling Cooler; and Littoral Combat Ship Mission Package Networked Tactical Training System (LCS NTTS).
- Complete the following TIPS projects: Sprayable Dielectric Shield Coatings effort; and Normal Fuel Oil Tanks and Littoral Combat Ship Virtual Maintenance Performance Aid in collaboration with RTT LCS - Network Transition Training System.
- Initiate 6-10 new technology transition deals in support of the RTT program.
- Initiate 5-8 new start projects in support of the TIPS program.

FY 2010 Plans:

- Continue all FY 2009 efforts less those noted as planned for completion.
- Complete the following RTT projects: Riverine Patrol Boat Protection; Wireless Networks for Embarked Forces; Joint Standoff Weapon (JSOW-C) Target of Opportunity (TOO) Mode Employment; Pocket Charger; Multistatic Active Capability Enhancements (MACE); Interim Surface Ship ASW Trainer For Surface Warfare Enterprise (SWE) Participation In Fleet Synthetic Training (FST) Events; Dismounted Infantry Simulation Interface (DISI); Non-Organic Over the Horizon ISR; SLAM-ER Land Moving Target/LSRS Validation; Expand 4/5 Synthetic Aperture Radar (SAR) Mapping; Physical Screening Protection; Advanced Capability Integrated Trailer-ECU-Generator (ITEG); Multi-Level Security (MLS) Sensor Grid; Expedient Main Supply Routes (MSR) Crater Backfill System; Improved Anti-jamming Performance SeaLancet RT-1944/U Multi-Band Network Radio (MBNR); Seal Delivery Vehicle (SDV) Diver Thermal Power System Supporting Naval Special Warfare Undersea Operations; Common Radio Room (CRR); and Afloat Non-Classified Network.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3126

PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

- Complete the following TIPS projects: Wireless Blade Monitoring System (WBMS); Sonar Cable Connectors; Valve Regulated Batteries (VRLA); AIM-9 Cryo Engine; Retail Operations Management (ROM - Enterprise Support (ES); Advanced Prognostics for Steam Catapults Water Brake Monitoring.
- Initiate 6-11 new RTT projects to improve naval warfighter capabilities.
- Initiate 5-8 new TIPS projects to reduce operations and maintenance support costs.

C. OTHER PROGRAM FUNDING SUMMARY - NAVY RELATED RDT&E:

Not applicable.

OTHER PROGRAM FUNDING SUMMARY - NON-NAVY RELATED RDT&E:

Not applicable.

D. ACQUISITION STRATEGY:

Utilize existing authorities on a case-specific basis to exploit rapid technology transition opportunities.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3174

PROJECT TITLE: RAPID DEVELOPMENT & DEPLOYMENT

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
3174 RAPID DEVELOPMENT & DEPLOYMENT	9.333	6.031	8.871

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Rapid Development and Deployment (RDD) provides an environment and process for rapid development and fielding of prototype solutions to meet urgent operational needs. The RDD process applies when existing DON processes cannot meet urgent operational needs. Overseas Contingency Operations (OCO) have generated rapidly evolving military needs that require responsive materiel solutions. RDD is a fast track process for application, by exception, to Navy and USMC capability needs and materiel solutions that meet the following criteria: (1) Need identified during active or incipient combat or contingency operation, or (2) Need derived from combat survivability of the warfighter or impacts the success of the mission. RDD initiates projects to deliver prototype solutions that are not readily available off-the-shelf and that can be developed, integrated with other components and systems (as necessary), tested, and fielded within 270 days of need approval. RDD provides startup funds to initiate projects that meet the above criteria while other funding is made available within the year of execution.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
RDD	9.333	6.031	8.871

Funding decrease from FY 2008 to FY 2009 is due to reduced level of investment/effort required for completing projects and subsequent initiations in FY 2009. The increase of funding from FY 2009 to FY 2010 is due to initiation of approximately 4 new RDD projects in FY 2010.

FY 2008 Accomplishments:

- Completed delivery of the Counter Suicide Bomber Detection capability for in-Theater evaluation and provided in-Theater sustainment support.
- Provided sustainment for the Tactical Biometric Collection and Matching System prototype, which supported

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3174

PROJECT TITLE: RAPID DEVELOPMENT & DEPLOYMENT

the Expanded Maritime Intercept Operations mission area.

- Initiated RDD effort titled: Portable Chemical, Biological, Radioactive/Nuclear Explosive (CBRNE) Detection Capability which supports Visit, Board, Search and Seizure (VBSS) effort.

FY 2009 Plans:

- Complete Portable CBRNE Detection Capability project.
- Initiate and complete multiple projects within RDD for urgent warfighter requirements that meet the RDD selection and execution criteria.
- Initiate approximately 3 new RDD projects.

FY 2010 Plans:

Continue new efforts initiated in FY 2009.

- Initiate and complete multiple projects within RDD for urgent warfighter requirements that meet the RDD selection and execution criteria.
- Initiate approximately 4 new RDD projects.

C. OTHER PROGRAM FUNDING SUMMARY - NAVY RELATED RDT&E:

OTHER PROGRAM FUNDING SUMMARY - NON-NAVY RELATED RDT&E:

D. ACQUISITION STRATEGY:

For RDD requirements that meet the selection criteria, the virtual Naval Innovation Laboratory (NaIL) is used to initiate projects. The NaIL is a virtual organization operating across Naval Laboratories and Warfare Centers, with interfaces and/or contractual agreements with other Military Services, Industry, Academia and the National Laboratory community. The NaIL will bring together, on demand, multi-disciplinary teams to develop and deliver rapid, innovative solutions. The NaIL will maintain an inventory of specialized RDT&E capabilities within the community, and will maintain visibility of available and emerging technologies from all sources that may serve as enablers to the success of RDD initiatives. The NaIL will review Urgent Combat Needs, identify and evaluate alternative solutions and provide recommendations. The NaIL will include a rapid

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT NUMBER: 3174

PROJECT TITLE: RAPID DEVELOPMENT & DEPLOYMENT

acquisition channel, consistent with all applicable procurement regulations, for access to industry products and services as needed. For approved projects, the NaIL will select appropriate technologies, and develop, integrate, test, and deliver fieldable prototypes with the essential logistics for use by the warfighter. End users will be involved throughout the process as part of the virtual team.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROJECT NUMBER: 9999

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

PROJECT TITLE: CONGRESSIONAL PLUS-UPS

CONGRESSIONAL PLUS-UPS:

	FY 2008	FY 2009
US NAVY MOBILE CONDITION ASSESSMENT SYSTEM PILOT	0.771	0.000

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	43.047	73.050	127.733					
1662 F/A-18 Improvements	36.706	63.479	111.860					
2065 F/A18 RADAR Upgrade	4.028	7.177	15.873					
9999 Congressional Adds	2.313	2.394						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The F/A-18 is required to perform multiple missions. Capabilities of the F/A-18 weapon system and ancillary equipment can be upgraded to accommodate and incorporate new or enhanced weapons as well as advances in technology to respond effectively to emerging threats. Continued F/A-18 E/F "Flight Plan" spiral capability development is critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of OPNAV N88 NAVPLAN 2030. Additionally, continued advanced development engineering for improvements in reliability and maintainability are required to ensure maximum benefit is achieved through reduced cost of ownership and to provide enhanced availability.

F/A-18 Improvements (1662): The F/A-18 is a multi-mission strike fighter aircraft that is used in strike, surveillance, reconnaissance and tanking roles through selected use of external equipment (fuel tanks, tactical and reconnaissance pods, and various ordnance launching racks). Additional capabilities are required for interoperability in a network-centric tactical environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and upgraded avionics including Dual Mode Weapons, an Infrared Search and Track (IRST), Integrated Defensive Electronic Counter Measures (IDECM) integrated with the Active Electronically Scanned Array (AESA) to provide Narrow Band High Gain Electronic Attack, Distributed Targeting capability through a Distributed Targeting Processor/Mass Storage Unit (DTP/MSU), and Sensor Integration through Multi-Sensor Integration (MSI) Phase I capability. Continued advanced development engineering and analysis of hardware/software is required to successfully optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment, to include: enhanced software capabilities, potential new hardware development, enhanced existing hardware, and enhanced network centric capabilities. Additionally, continued effort is needed to perform technical evaluations, modeling and simulations, investigative flight testing, and enhanced software modifications based on reported fleet deficiencies. This funding line continues F/A-18E/F "Flight Plan" spiral capability development, which includes Sensor Integration – Multi-Ship Emitter Geo-Location capability and Sensor Integration – MSI Phase II capability. This budget also continues funding for F/A-18A-F Test Wing Maintenance support.

F/A-18 Radio Detection and Ranging (RADAR) Upgrade (2065): The F/A-18 RADAR Upgrade, Active Electronically Scanned Array (AESA) development program, which began in FY 1999, is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series RADAR. The AESA system corrects operational test deficiencies noted in the AN/APG-73. It provides for multi-target tracking, Synthetic Aperture RADAR (SAR) imagery, SAR Target Location Error (TLE), and improved spotlight map resolution. In addition, it provides for greater lethality than previous F/A-18 RADARs by allowing for full tactical support of existing and planned air-to-air (A/A) and air-to-ground (A/G) weapons and it significantly increases A/A and A/G detection and tracking ranges. The AESA system provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy radar. This budget continues spiral capability development of AESA by increased efforts to address Phase II Operational Requirements Document requirements such as Electronic Protection (EP) against multiple Radio Frequency emitters (Distributed Targeting - AESA Multi-Jammer EP), Electronic Attack and improved Fixed/Ground Mobile Target detection and tracking via minimal hardware/ maximum software changes. The effort will provide upgrades for EP capability against multiple radio frequency emitters. Continue software development and integration is also required for expanded A/A and A/G capabilities while in a tactical A/A and A/G threat Electronic Attack environment.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																												
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE																																													
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7	0204136N F/A-18 SQUADRONS																																													
Congressional Adds: (9C48A) Airborne Tactical Server (ATS). ATS is a potential replacement solution for analog cockpit video recorders and has digital functionality to enhance platform net centric capability. ATS allows for digital imagery within the aircraft cockpit for real-time mission assessment and/or off-board image transfer for ground based assessments via Multiple Information Display System (MIDS) and Variable Message Format (VMF). These functions contribute to real time net centric solution that shortens kill chain, the time from target detection to engagement, and other enhanced capabilities. (9E13A) Distributed Targeting Processor - Continue integration of the Distributed Targeting Processor (DTP) to provide a baseline capability that can generate precision targeting coordinates for the F/A-18 E/F. B. PROGRAM CHANGE SUMMARY: <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;">Funding:</th> <th style="text-align: right; padding: 5px;"><u>FY 2008</u></th> <th style="text-align: right; padding: 5px;"><u>FY 2009</u></th> <th style="text-align: right; padding: 5px;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">FY2009 President's Budget:</td> <td style="text-align: right; padding: 5px;">49.580</td> <td style="text-align: right; padding: 5px;">71.232</td> <td style="text-align: right; padding: 5px;">93.109</td> </tr> <tr> <td style="padding: 5px;">Current President's Budget:</td> <td style="text-align: right; padding: 5px;">43.047</td> <td style="text-align: right; padding: 5px;">73.050</td> <td style="text-align: right; padding: 5px;">127.733</td> </tr> <tr> <td style="padding: 5px;">Total Adjustments</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">-6.533</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">1.818</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">34.624</td> </tr> <tr> <td colspan="4" style="padding: 10px 0 0 40px;">Summary of Adjustments</td> </tr> <tr> <td style="padding: 5px 0 0 40px;">Congressional Reductions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px 0 0 40px;">Congressional Adjustments</td> <td style="text-align: right; padding: 5px;">-7.565</td> <td style="text-align: right; padding: 5px;">2.017</td> <td></td> </tr> <tr> <td style="padding: 5px 0 0 40px;">SBIR/STTR/FTT Assessments</td> <td style="text-align: right; padding: 5px;">-0.082</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px 0 0 40px;">Program Adjustments</td> <td style="text-align: right; padding: 5px;">1.114</td> <td></td> <td style="text-align: right; padding: 5px;">34.652</td> </tr> <tr> <td style="padding: 5px 0 0 40px;">Rate/Misc Adjustments</td> <td></td> <td style="text-align: right; padding: 5px;">-0.199</td> <td style="text-align: right; padding: 5px;">-0.028</td> </tr> <tr> <td style="padding: 5px 0 0 40px;">Subtotal</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">-6.533</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">1.818</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">34.624</td> </tr> </tbody> </table> Schedule: E1662: Full Rate Production (FRP) was removed from the IDECM with AESA schedule because this effort will not produce or deliver hardware. This effort is software related. The schedule change to the Infrared Search and Track (IRST) program is due to a previous assumption that a "lab only" Operational Assessment (OA) would be acceptable. Naval Command Operational Test and Evaluation Force (COTF) stated that an IRST Engineering Development Model (EDM) must be in-flight before they would provide an OA to the Milestone Decision Authority for Milestone C (MS C). MS C slipped, which caused a waterfall affect on the rest of the schedule. Also, FY08 MS B has been pushed to FY09 due to new DoD 5000 series. Due to Acquisition Category designation, schedules for Network Centric Operations and Distributed Targeting Processor / Mass Storage Unit have been merged to more accurately reflect Distributed Targeting Capability Development. The delay in starting Network Centric Operations algorithm development is due to a delay in contracting actions. The schedule changes beginning in FY 2010 are due to new start efforts for Sensor Integration: Multi-Ship Emitter Geo-Location and Air to Air, Air to Ground and Maritime Multi-Sensor Integration Phase II. E2065: The previous Material Support Date (MSD) was erroneously stated to begin in 3rd quarter FY08. The current MSD is 4th quarter FY08. The addition of software deliveries were not reflected in previous budgets as there was uncertainty on the frequency of future HOL tape releases. The current R-4/R-4a reflected the latest software release schedule. Technical: E1662: Technical changes beginning in FY 2010 are due to new start efforts for Sensor Integration (Multi-Ship Emitter Geo-Location and Sensor Integration - Air to Air, Air to Ground) and Maritime Multi-Sensor Integration Phase II. E2065: Technical changes beginning in FY 2010 are due to additional funding for F/A-18 Distributed Targeting (AESA Multi-Jammer Electronic Protection)			Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	FY2009 President's Budget:	49.580	71.232	93.109	Current President's Budget:	43.047	73.050	127.733	Total Adjustments	-6.533	1.818	34.624	Summary of Adjustments				Congressional Reductions				Congressional Adjustments	-7.565	2.017		SBIR/STTR/FTT Assessments	-0.082			Program Adjustments	1.114		34.652	Rate/Misc Adjustments		-0.199	-0.028	Subtotal	-6.533	1.818	34.624
Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																											
FY2009 President's Budget:	49.580	71.232	93.109																																											
Current President's Budget:	43.047	73.050	127.733																																											
Total Adjustments	-6.533	1.818	34.624																																											
Summary of Adjustments																																														
Congressional Reductions																																														
Congressional Adjustments	-7.565	2.017																																												
SBIR/STTR/FTT Assessments	-0.082																																													
Program Adjustments	1.114		34.652																																											
Rate/Misc Adjustments		-0.199	-0.028																																											
Subtotal	-6.533	1.818	34.624																																											

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	36.706	63.479	111.860					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: F/A-18 Improvements (1662): The F/A-18 is a multi-mission strike fighter aircraft that is used in strike, surveillance, reconnaissance and tanking roles through selected use of external equipment (fuel tanks, tactical and reconnaissance pods, and various ordnance launching racks). Additional capabilities are required for interoperability in a network-centric tactical environment. In order to respond effectively to emerging threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including Dual Mode Weapons, an Infrared Search and Track (IRST), Integrated Defensive Electronic Counter Measures (IDECM) integrated with the Active Electronically Scanned Array (AESA) to provide Narrow Band High Gain Electronic Attack, Distributed Targeting capability through a Distributed Targeting Processor/Mass Storage Unit (DTP/MSU), and Sensor Integration through Multi-Sensor Integration (MSI) Phase I capability. Continued advanced development engineering and analysis of hardware/software is required to successfully optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment, to include: enhanced software capabilities, potential new hardware development, enhanced existing hardware, and enhanced network centric capabilities. Additionally, continued effort is needed to perform technical evaluations, modeling and simulations, investigative flight testing, and enhanced software modifications based on reported fleet deficiencies. This funding line continues F/A-18E/F "Flight Plan" spiral capability development, which includes Sensor Integration – Multi-Ship Emitter Geo-Location capability and Sensor Integration – MSI Phase II capability. This budget also continues funding for F/A-18A-F Test Wing Maintenance support.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Weapons Systems/MIDS/ANAV/SIAP</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>5.600</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Weapons Systems/MIDS/ANAV/SIAP	FY 08	FY 09	FY10		Accomplishments/Effort/Subtotal Cost	5.600				RDT&E Articles Quantity				
Weapons Systems/MIDS/ANAV/SIAP	FY 08	FY 09	FY10																
Accomplishments/Effort/Subtotal Cost	5.600																		
RDT&E Articles Quantity																			
Conducted engineering analysis and develop improvements to existing systems and subsystems for deficiencies identified during development and fleet use of the aircraft. Provided technical support for the integration of new weapons and associated systems. Began Network Centric Warfare capability development.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Air to Ground Maritime Attack - Dual Mode Wpns</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>0.460</td> <td>0.460</td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Air to Ground Maritime Attack - Dual Mode Wpns	FY 08	FY 09	FY10		Accomplishments/Effort/Subtotal Cost	0.460	0.460			RDT&E Articles Quantity				
Air to Ground Maritime Attack - Dual Mode Wpns	FY 08	FY 09	FY10																
Accomplishments/Effort/Subtotal Cost	0.460	0.460																	
RDT&E Articles Quantity																			
Continued integration, validation, and verification of various weapon configurations on F/A-18E/F aircraft, to include Dual Mode Weapons and fleet-identified high priority weapons loads.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Sensor Integration - IDECM with AESA</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY10</td> <td style="width: 25%;"></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>2.369</td> <td>6.293</td> <td>6.398</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Sensor Integration - IDECM with AESA	FY 08	FY 09	FY10		Accomplishments/Effort/Subtotal Cost	2.369	6.293	6.398		RDT&E Articles Quantity				
Sensor Integration - IDECM with AESA	FY 08	FY 09	FY10																
Accomplishments/Effort/Subtotal Cost	2.369	6.293	6.398																
RDT&E Articles Quantity																			
Continues software development for Integrated Defensive Electronic Counter Measures (IDECM) integration with Active Electronically Scanned Array (AESA) to provide Narrow Band High Gain Electronic Attack (HGEA) and High Gain Electronic Support Measures (HGSM) capability.																			

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements		
B. Accomplishments/Planned Program (Cont.)				
Distributed Targeting - IRST Phase I	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	5.900	16.373	21.780	
RDT&E Articles Quantity				
Systems design and development of an Infrared Search & Track sensor for the F/A-18 E/F.				
Distributed Targeting - NCO / DTP / MSU / MPI	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	12.683	20.511	35.650	
RDT&E Articles Quantity				
Continue Network Centric Operations (NCO) warfare capability development. Continue integration of the Distributed Targeting Processor (DTP), Mass Storage Unit (MSU) and Mission Planning Interface (MPI) to provide a baseline capability that can generate precision targeting coordinates for the F/A-18 E/F.				
Sensor Integration - SSG / SEI / MSI Phase I	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost		8.107	14.900	
RDT&E Articles Quantity				
Continue software algorithm to correlate multiple ground and surface tracks from on-ship to off-ship sensor sources (Single Ship Geo-Location - SSG) to enhance target identification and location (Specific Emitter Identification (SEI)), and to begin integration with the Common Tactical Picture and Blue Force Track information (Multi-Sensor Integration Phase I).				
Test Wing Maintenance Conversion	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost	9.694	11.735	11.602	
RDT&E Articles Quantity				
Perform aircraft maintenance on Test Wing aircraft.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements		
B. Accomplishments/Planned Program (Cont.)				
Sensor Integration - Multi-Ship Emitter Geo-Location	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost			12.510	
RDT&E Articles Quantity				
Emitter Geo-Location spiral development and integration of Multi-Ship Emitter Geo-Location capability. Provides additional autonomous fix phase support for distributed targeting use, situational awareness and targeting information at maximum weapons deployment range increases survivability, and improves overall effectiveness of weapons inventory.				
Sensor Integration - A/A, A/G & Maritime MSI Phase II	FY 08	FY 09	FY10	
Accomplishments/Effort/Subtotal Cost			9.020	
RDT&E Articles Quantity				
Phase II spiral development of the Air to Air (A/A), Air to Ground (A/G) and Maritime Multi-Sensor Integration capability to integrate with the Common Tactical Picture and Blue Force Track information (Multi-Sensor Integration Phase I). This effort provides for reduced air to air, air to ground, and maritime Target Location Error (TLE) ellipsoid error and moving target track accuracy. It improves target Identification (ID) and Remote On Engage (ROE) support by merging additional sensor sources to multiple on-board and off-board sensors. It also provides capability to locate, target and engage re-locatable, time sensitive targets.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																																					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS		PROJECT NUMBER AND NAME 1662 F/A-18 Improvements																																				
C. OTHER PROGRAM FUNDING SUMMARY: Related Procurement <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>F/A-18E/F APN-1 (P-1 Line Item #4)</td> <td>2716.223</td> <td>1,814.322</td> <td>1,009.537</td> </tr> <tr> <td>F/A-18E/F Adv Procurement (P-1 Line Item #5)</td> <td>46.501</td> <td>42.490</td> <td>51.431</td> </tr> <tr> <td>EA-18G APN-1 (P-1 Line Item #2)</td> <td>1474.596</td> <td>1,547.224</td> <td>1,611.837</td> </tr> <tr> <td>EA-18G Adv Procurement (P-1 Line Item #3)</td> <td>50.771</td> <td>46.693</td> <td>20.559</td> </tr> <tr> <td>APN-5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>F-18 Series Modification (P-1 Line Item #30)</td> <td>485.036</td> <td>480.718</td> <td>580.129</td> </tr> </tbody> </table> Related RDT&E <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>(U) P.E. 0604269N EA-18G (R-1 Line Item #93)</td> <td>269.379</td> <td>128.689</td> <td>55.446</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The F/A-18 Improvements program consists of extensive spiral development efforts mapped out in the capability-based approach F/A-18 E/F "Flight Plan." These efforts are critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of NAVPLAN 2030. The major programs within the F/A-18 Improvements project are based six Weapon System Capabilities: Distributed Targeting Air to Ground (A/G) and Maritime, Distributed Targeting Air to Air (A/A), Net Centric Operations/Battle Space Management, Sensor Integration, A/G & Maritime Attack, and A/A Attack. The major efforts included in this project are: Dual Mode Weapons integration; an Infrared Search and Track (IRST); Integrated Defensive Electronic Counter Measures (IDECM) integrated with the Active Electronically Scanned Array (AESA) to provide Narrow Band High Gain Electronic Attack; Distributed Targeting capability through a Distributed Targeting Processor/Mass Storage Unit (DTP/MSU); Sensor Integration through Multi-Ship Emitter Geo-Location capability and Multi-Sensor Integration (MSI) Phase I & Phase II capability; continued advanced development and F/A-18E/F Flight Plan engineering and analysis; continued enhanced software capabilities development; and engineering support to perform technical evaluations, modeling and simulations, investigative flight testing. - Infrared Search & Track (IRST). The IRST Phase 1 program is a Navy program that entered the Systems Design and Development phase at Milestone B in FY09. A Phase 1 system will be developed by the Navy that will meet requirements for a counter electronic attack capability. - Distributed Targeting - Distributed Targeting development is provided on a sole source cost plus fixed fee contract on an Research & Development (R&D) Basic Ordering Agreement to Boeing. - Sensor Integration - Sensor Integration development is provided on a sole source cost plus fixed fee contract on an Research & Development (R&D) Basic Ordering Agreement to Raytheon.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	F/A-18E/F APN-1 (P-1 Line Item #4)	2716.223	1,814.322	1,009.537	F/A-18E/F Adv Procurement (P-1 Line Item #5)	46.501	42.490	51.431	EA-18G APN-1 (P-1 Line Item #2)	1474.596	1,547.224	1,611.837	EA-18G Adv Procurement (P-1 Line Item #3)	50.771	46.693	20.559	APN-5				F-18 Series Modification (P-1 Line Item #30)	485.036	480.718	580.129	<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	(U) P.E. 0604269N EA-18G (R-1 Line Item #93)	269.379	128.689	55.446
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																					
F/A-18E/F APN-1 (P-1 Line Item #4)	2716.223	1,814.322	1,009.537																																					
F/A-18E/F Adv Procurement (P-1 Line Item #5)	46.501	42.490	51.431																																					
EA-18G APN-1 (P-1 Line Item #2)	1474.596	1,547.224	1,611.837																																					
EA-18G Adv Procurement (P-1 Line Item #3)	50.771	46.693	20.559																																					
APN-5																																								
F-18 Series Modification (P-1 Line Item #30)	485.036	480.718	580.129																																					
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																					
(U) P.E. 0604269N EA-18G (R-1 Line Item #93)	269.379	128.689	55.446																																					

UNCLASSIFIED

[illegible]

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE:						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			1662 F/A-18 Improvements								
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							
Prior Years Cost	Various	Various	2,901.493											
Software Development (Misc)	Various	Various	1.868											
Software Development IRST	WX	NAWCWD-CHINA LAKE, CA												
SW Dev IDECM - HGEA/HGESM	WX	NAWCWD-CHINA LAKE, CA	1.023	2.640	01/09	9.300	01/10							
Development Support IRST	WX	NAWCWD-CHINA LAKE, CA	0.843	2.028	11/08	2.634	11/09							
Development Support IRST	WX	NAWCAD-PAX RIVER, MD	1.218	1.634	11/08	2.158	11/09							
Development Support IRST	WX	NAWCAD-LAKEHURST, NJ	0.035	0.048	11/08	0.099	11/09							
Development Support IRST	WX	FRC-SOUTHEAST	0.233	0.432	11/08	0.446	11/09							
Development Support IRST	WX	FRC-SOUTHWEST		0.040	11/08	0.042	11/09							
SW Dev (TDL) - NCO/DTP	TBD	Boeing, St Louis, MO	2.105	7.278	01/09	12.534	01/10							
Dev Support - Sen Int (SSG / SEI)	WX	NAWCWD-CHINA LAKE, CA		1.436	01/09	1.500	01/10							
Dev Support - Sen Int (SSG / SEI)	TBD	Raytheon, Goleta CA		0.550	01/09	1.250	01/10							
Dev Support - Sen Int (SSG / SEI)	TBD	Boeing, St Louis, MO		2.250	01/09	2.750	01/10							
Dev Support - Sen Int (MSI Phase II)	TBD	NAWCWD-CHINA LAKE, CA				1.533	01/10							
Dev Support - Sen Int (MSI Phase II)	TBD	Boeing, St Louis, MO				4.998	01/10							
Dev Support - Sen Int (Multi Ship Geo)	WX	NAWCWD-CHINA LAKE, CA				6.745	01/10							
Dev Support - Sen Int (Multi Ship Geo)	TBD	Raytheon, Goleta CA				2.714	01/10							
Dev Support - Sen Int (Multi Ship Geo)	TBD	Boeing, St Louis, MO				2.715	01/10							

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			1662 F/A-18 Improvements						
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					
Prior Years Costs	Various	Various	76.085									
DT&E - ANAV	WX	NAWCAD-PAX RIVER, MD	1.800									
DT&E - ANAV	WX	NAWCWD-CHINA LAKE, CA	1.557									
OT&E - ANAV	WX	OPTEVFOR, NORFOLK, VA	0.200									
DT&E - IRST	WX	NAWCAD-PAX RIVER, MD	0.484	0.626	11/08	1.793	11/09					
DT&E - IRST	WX	NAWCWD-CHINA LAKE, CA	0.609			0.150	11/09					
OT&E - IRST	WX	OPTEVFOR / VX-9	0.003	0.005	02/09	0.005	02/10					
DT&E Dist Targeting - NCO/DTP	WX	NAWCWD-CHINA LAKE, CA	0.883	2.004	01/09	3.049	01/10					
DT&E Dist Targeting - NCO/DTP	WX	NAWCWD-CHINA LAKE, CA	0.030	0.055	01/09	0.065	01/10					
OT&E Dist Targeting - NCO/DTP	WX	OPTEVFOR, NORFOLK, VA	0.300	0.050	01/09	0.100	01/10					
DT&E Sen Integ - SSG/SEI/MSI Ph I	WX	NAWCWD-CHINA LAKE, CA										
OT&E Sen Integ - SSG/SEI/MSI Ph I	WX	OPTEVFOR, NORFOLK, VA				1.000	01/10					
DT&E Sen Integ-MSI Ph II	WX	NAWCAD-PAX RIVER, MD				1.830	01/10					
Subtotal T&E			81.951	2.740		7.992						
Remarks:												
Prior Years Costs	Various	Various	23.156									
Program Mgmt Support - NCO/DTP	WX	TBD	1.046	0.770	01/09	0.232	01/10					
Government Eng Support-NCO/DTP	WX	NAWCAD-PAX RIVER, MD	1.456	1.429	01/09	1.400	01/10					
Program Mgmt Support (Misc)	Various	NAWCAD-PAX RIVER, MD	0.733									
Prog Mgmt Support (PMMAC-MSS)	CPFF	NAWCAD-PAX RIVER, MD	1.954	2.500	01/09	2.400	11/09					
Travel	Various	NAWCAD-PAX RIVER, MD	0.900	0.850	Various	0.800	Various					
Flight Plan Engineering	Various	NAWCAD-PAX RIVER, MD	0.600	1.100	01/09	1.100	01/10					
Flight Plan Engineering	Various	NAWCWD-CHINA LAKE, CA	1.400	2.500	01/09	2.200	01/10					
Govt Eng Support-MSI Ph II	WX	NAWCAD-PAX RIVER, MD				0.260	01/10					
Test Wing Maint Conversion	WX	Various	8.800	9.700	01/09	11.762	01/10					
Subtotal Management			40.045	18.849		20.154						
Remarks:												
Total Cost			3,494.225	63.479		111.860						

UNCLASSIFIED

EXHIBIT R4, Schedule Profile													DATE:
APPROPRIATION/BUDGET ACTIVITY													May 2009
RDT&E, N / BA-7													
PROGRAM ELEMENT NUMBER AND NAME													
0204136N F/A-18 SQUADRONS													
PROJECT NUMBER AND NAME													
1662 F/A-18 Improvements													
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
IDECM with AESA (HGEA/HGESM Acquisition Milestones)													
Software Development													
Software Integration													
Software Development													
Software Integration													
Operational Evaluation													

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-7

PROGRAM ELEMENT NUMBER AND NAME

0204136N F/A-18 SQUADRONS

PROJECT NUMBER AND NAME

1662 F/A-18 Improvements

Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
IRST Acquisition Milestones							MS B △					
Design & Development												
IRST System Development				▲ SRR			PDR △ IBR △ SRR		CDR △	DRR △		TRR △
IRST EDM Delivery												
Software Development/Delivery												
Test & Evaluation Milestones												
Development Test												
Operational Test												
Production Milestones												
Production Deliveries												

R-1 SHOPPING LIST - Item No. 165

R-1 Item No 165

Page 13 of 31

Exhibit R-2

UNCLASSIFIED

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R4, Schedule Profile													DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME			
RDT&E, N / BA-7					0204136N F/A-18 SQUADRONS									1662 F/A-18 Improvements			
Fiscal Year	2008				2009				2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
NCO/DTP/MSU/MPI Acquisition Milestones													MS-C				
Hardware Development					MSU HW Development												
					MPI HW Development												
									Qual Testing								
											Reliability Testing						
Software Development		DAG		SDR													
		▲		▲													
					DTP Software												
									MC Software								
									MP Software								
System Integration													TRR				
													▲				
Test & Evaluation																	
Production Milestones													LRIP-1				
													▲				
									ECP								

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R4, Schedule Profile											DATE:		May 2009				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME							
RDT&E, N / BA-7					0204136N F/A-18 SQUADRONS					1662 F/A-18 Improvements							
Fiscal Year	2008				2009				2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
Sensor Integration Multi-Sensor Integ Phase I Single-Ship Emitter Geo-Loc Specific Emitter Identification																	
Acquisition Milestones Requirements Definition					Rqmts Definition												
Software Design Interfaces																	
ALR-67(V)3 Op Flt Program (OFP) Mod									OFP Mod								
Mission Computer (MC) OFP Mod									MC OFP Mod								
H8 Software Release																	
Test & Evaluation Milestones Development Test											TRR △						
											DT						

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY												May 2009
RDT&E, N / BA-7												
PROGRAM ELEMENT NUMBER AND NAME												
0204136N F/A-18 SQUADRONS												
PROJECT NUMBER AND NAME												
1662 F/A-18 Improvements												
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Sensor Integration Multi-Ship Geo-Loc												
Acquisition Milestones Requirements Definition									Rqmts Definition			
Software Design Interfaces										Design Int		
ALR-67(V)3 Op Flt Program (OFP) Mod										OFP Mod		
Mission Computer (MC) OFP Mod										MC OFP Mod		
H8 Software Release												
Test & Evaluation Milestones												
Development Test												
Operational Test												
ALR-67(V)3 ECP MC ECP												

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R4, Schedule Profile													DATE:
													May 2009
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME							PROJECT NUMBER AND NAME	
RDT&E, N / BA-7					0204136N F/A-18 SQUADRONS							1662 F/A-18 Improvements	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
SENSOR INTEGRATION A/A, A/G & Maritime Multi-Sensor Integ Ph II Acquisition Milestones													
System Integration Integration Testing													
Test & Evaluation Test Readiness Review Operational Test													
Production Milestones													

UNCLASSIFIED

[illegible]

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	4.028	7.177	15.873					
RDT&E Articles Qty								
DTP Integration Spiral 1 A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: F/A-18 Radio Detection and Ranging (RADAR) Upgrade: The F/A-18 RADAR Upgrade, Active Electronically Scanned Array (AESA) development program, which began in FY 1999, is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series RADAR. The AESA system corrects operational test deficiencies noted in the AN/APG-73. It provides for multi-target tracking, Synthetic Aperture RADAR (SAR) imagery, SAR Target Location Error (TLE), and improved spotlight map resolution. In addition, it provides for greater lethality than previous F/A-18 RADARs by allowing for full tactical support of existing and planned air-to-air (A/A) and air-to-ground (A/G) weapons and it significantly increases A/A and A/G detection and tracking ranges. The AESA system provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy radar. This budget continues spiral capability development of AESA by increased efforts to address Phase II Operational Requirements Document requirements such as Electronic Protection (EP) against multiple Radio Frequency emitters (Distributed Targeting - AESA Multi-Jammer EP), Electronic Attack and improved Fixed/Ground Mobile Target detection and tracking via minimal hardware/ maximum software changes. The effort will provide upgrades for EP capability against multiple radio frequency emitters. Higher Order Language (HOL) Software development and integration is also required for expanded A/A and A/G capabilities while in a tactical A/A and A/G threat Electronic Attack environment.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Distributed Targeting - AESA EP Eng & Mfg Dev</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;">2.410</td> <td style="padding: 2px; text-align: center;">1.170</td> <td style="padding: 2px; text-align: center;">1.500</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>					Distributed Targeting - AESA EP Eng & Mfg Dev	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	2.410	1.170	1.500		RDT&E Articles Quantity				
Distributed Targeting - AESA EP Eng & Mfg Dev	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	2.410	1.170	1.500																
RDT&E Articles Quantity																			
Continue Engineering Manufacturing Development efforts. Continue hardware developmental and refinement to the inherent Electronic Protection (EP) efforts that will increase the number of channels within the Receiver to enable Multi-Channel future software Multi-Jammer Electronic Protection (EP) activities.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Dist Targeting - AESA EP SW Dev, DT, OT, & Integr</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;">1.618</td> <td style="padding: 2px; text-align: center;">6.007</td> <td style="padding: 2px; text-align: center;">14.373</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>					Dist Targeting - AESA EP SW Dev, DT, OT, & Integr	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	1.618	6.007	14.373		RDT&E Articles Quantity				
Dist Targeting - AESA EP SW Dev, DT, OT, & Integr	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	1.618	6.007	14.373																
RDT&E Articles Quantity																			
Continue software development, Development Testing, systems integration efforts, and AESA Operational Test and Evaluation inclusive of some Follow-on Test and Evaluation for minimal hardware/software change efforts. Continue Multi-Jammer Electronic Protection (EP) efforts which expands and improves upon current software capability for Electronic Protection against multiple Radio Frequency emitters, Electronic Attack, and improved Fixed/Ground Mobile Target detection and tracking.																			

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-7	0204136N F/A-18 SQUADRONS	2065 F/A-18 RADAR Upgrade	

C. OTHER PROGRAM FUNDING SUMMARY:

Related Procurement

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
F/A-18E/F APN-1 (P-1 Line Item #4)	2762.724	1,856.812	1,060.968
EA-18G APN-1 (P-1 Line Item #2)	1525.367	1,593.917	1,632.396
APN-5			
F-18 Series Mod (P-1 Line Item #30) (OSIP 002-07)	96.913	105.829	120.827

D. ACQUISITION STRATEGY:

The AESA program continues developmental efforts following a successful Full Rate Production milestone decision, after completing a two-phase Acquisition approach during the FY1999 through FY2007 timeframe. This strategy continues utilization of reform initiatives such as: early partnering with industry; leveraging industry investment; optimizing use of Commercial Off-The Shelf (COTS) software and Non-Developmental Item; Cost as an Independent Variable; and Electronic Data Deliverables. Basic Ordering Agreement (BOA) orders for Request for Proposal (RFP) developments are in-place for Boeing, the airframe prime manufacturer/integrator, and Raytheon, the RADAR manufacturer, for focused risk reduction and sustainment of prior developmental activities.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			2065 F/A-18 RADAR 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					
Primary Hardware Development	SS/CPFF	Boeing, St. Louis, MO	455.749									
GFE	SS/CPFF	Boeing, St. Louis, MO	3.517									
Primary Hardware Development	TBD	NSMA	2.410	1.917	11/08	1.500	11/09					
Subtotal Product Development			461.676	1.917		1.500						
Remarks:												
Software Development	WX	NAWCWD, China Lake, CA	22.515									
Integrated Logistics Support	WX	Various	1.511									
Software Development	WX	NAWCWD, China Lake, CA		2.100	11/08	10.400	11/09					
Subtotal Support			24.026	2.100		10.400						
Remarks:												

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 2065 F/A-18 RADAR 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				
Developmental Test & Evaluation	WX	Various	78.958								
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, VA	13.384								
Developmental Test & Evaluation	TDL	NAWCWD, China Lake, CA	0.062	1.885	11/08	3.873	11/09				
Developmental Test & Evaluation	TBD	NSMA	0.950								
Developmental Test & Evaluation	TBD	Eglin AFB, FL		1.175	11/08						
Developmental Test & Evaluation	WX	NAWCAD, Pax River, MD	0.382								
Subtotal T&E			93.736	3.060		3.873					
Remarks:											
Program Management Support	Various	NAVAIR Pax River, MD	2.269								
Travel	TO	NAVAIR Pax River, MD	0.868	0.100	11/08	0.100	11/09				
Subtotal Management			3.137	0.100		0.100					
Remarks:											
Total Cost			582.575	7.177		15.873					
Remarks:											

UNCLASSIFIED

EXHIBIT R4, Schedule Profile														DATE: May 2009										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7					PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS										PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade									

Calendar Year	2008				2009				2010															
Fiscal Year	2008				2009				2010															
Quarter	1	2	3	4	1	2	3	4	1	2	3	4												

Acquisition Milestones	Timeline for Acquisition Milestones: A horizontal bar represents the timeline from 2008 Q1 to 2010 Q4. A star labeled 'FIRST' is at 2008 Q1. A star labeled 'DEPLOYMENT WINDOW' is at 2008 Q4. A triangle labeled 'MSD' is at 2009 Q1. A triangle labeled 'Depot Standup' is at 2010 Q2.																							

Production Milestones & Radar Deliveries	Timeline for Production Milestones: A horizontal bar represents the timeline from 2008 Q1 to 2010 Q4. A bar labeled 'FRP - 42' spans 2008 Q1 to 2009 Q1. A bar labeled 'FRP - 46' spans 2009 Q1 to 2009 Q4. A bar labeled 'FRP - 42' spans 2010 Q1 to 2010 Q4. A bar labeled 'LRIP IV Deliveries' spans 2008 Q1 to 2009 Q1. A bar labeled '(APN-1) Forward Fit' spans 2008 Q1 to 2009 Q1. A bar labeled '(APN-5) Retrofit Radars' spans 2009 Q1 to 2010 Q4. A bar labeled '18' spans 2009 Q1 to 2010 Q4.																							

Software Delivery	Timeline for Software Delivery: A horizontal bar represents the timeline from 2008 Q1 to 2010 Q4. A bar labeled 'H4E FLEET REL' spans 2008 Q1 to 2008 Q4. A bar labeled 'H5E FLEET REL' spans 2009 Q1 to 2009 Q4. A bar labeled 'H6 FLEET REL' spans 2010 Q1 to 2010 Q4.																							

Integrated Test & Evaluation	Timeline for Integrated Test & Evaluation: A horizontal bar represents the timeline from 2008 Q1 to 2010 Q4. A bar labeled 'H4E IT&E FOT&E1' spans 2008 Q1 to 2009 Q1. A bar labeled 'H5 IT&E' spans 2008 Q1 to 2009 Q4. A bar labeled 'H6 IT&E FOT&E 2' spans 2009 Q1 to 2010 Q4. A bar labeled 'H8 IT&E' spans 2009 Q1 to 2010 Q4.																							

AT Development	Timeline for AT Development: A horizontal bar represents the timeline from 2008 Q1 to 2010 Q4. A bar labeled 'IT&E Phase 1' spans 2008 Q1 to 2009 Q1. A bar labeled 'IT&E PHASE 2' spans 2009 Q1 to 2010 Q4.																							

F/A-18E/F Deliveries	LOT 30(42)				LOT 31(46)				LOT 32(42)															
Fiscal Year	2008				2009				2010															

UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade			
Schedule Profile	FY 2008	FY 2009	FY 2010					
H4E Integrated Test & Eval (IT&E)	1Q-4Q							
Follow on Operational Test & Eval (OT&E) 1 Phase 1								
Low Rate Initial Production (LRIP) IV Deliveries	1Q-4Q							
Anti-Tamper (AT) IT&E Phase 1	1Q-4Q							
AT IT&E Phase 2	1Q-4Q	1Q-4Q	1Q-4Q					
H5 IT&E	1Q-4Q	1Q-2Q						
H6 IT&E FOT&E2	4Q	1Q-4Q	1Q-3Q					
H8 IT&E		1Q-4Q	1Q-4Q					
H4E Fleet Release	2Q							
First Deployment	3Q-4Q							
H5 Fleet Release		3Q						
Material Support Date (MSD)	4Q							
Full Rate Production (FRP) Deliveries (Lot 30)	1Q-4Q							
FRP Deliveries (Lot 31)		1Q-4Q						
FRP Deliveries (Lot 32)			1Q-4Q					
Depot Standup			4Q					
Retrofit Radar Delivers			1Q-4Q					
H6 FLEET RELEASE			3Q					

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 9999 Congressional Adds			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	2.313	2.394						
RDT&E Articles Qty								
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-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 9999 Congressional Adds		
B. Accomplishments/Planned Program				
9C48A Airborne Tactical Server	FY 08	FY 09	FY10	FY11
Accomplishments/Effort/Subtotal Cost	2.313			
RDT&E Articles Quantity				
ATS is a potential replacement solution for analog cockpit video recorders and has digital functionality to enhance platform net centric capability. ATS allows for digital imagery within the aircraft cockpit for real-time mission assessment and/or off-board image transfer for ground based assessments via Multiple Information Display System (MIDS) and Variable Message Format (VMF). These functions contribute to real time net centric solution that shortens kill chain, the time from target detection to engagement, and other enhanced capabilities.				
9E13A Distributed Targeting Processor	FY 08	FY 09	FY10	FY11
Accomplishments/Effort/Subtotal Cost		2.394		
RDT&E Articles Quantity				
Continued integration of the Distributed Targeting Processor (DTP) to provide a baseline capability that can generate precision targeting coordinates for the F/A-18 E/F.				

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	18.969	53.834	63.058					
0463 E-2C IMPROVEMENTS	18.969	53.834	63.058					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control (BMC2) capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification or replacement of selected Weapon Replaceable Assemblies (WRAs) of currently installed subsystems, as well as provided for experimentation with narrowband and wideband internet protocol (IP) concepts, to include technologies such as High Frequency (HF) Secure IP Router Network (HF SIPRNET), VRC-99 digital IP radio as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System (ADNS), Tactical Information Services (TIS), cooperative and non-cooperative identification, and open architecture hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification (CID) and Theater Air and Missile Defense (TAMD) Capability.

A Core Open Architecture capability will modernize existing Mission Computer (MC) and Operational Flight Program (OFP) architecture, preserve interfaces to future E-2 weapon systems modification, simplify maintenance and upgrades, memory and operating systems (hardware/software independence), add an improved networking backbone to quickly field future interoperable warfighting applications and utilize open and commercially adopted standards and protocols to the maximum extent possible.

An In Flight Refueling (IFR) capability will allow the E-2 to receive fuel from various organic and strategic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range & endurance). IFR will better enable the E-2 to fully support current Carrier Strike Group (CSG)/Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous domestic E-2 concept demonstration effort successfully established the feasibility of tanking behind the F/A-18E/F and KC-130 aircraft.

The Automatic Identification System (AIS) is a broadcast transponder system operating in the VHF maritime band that provides data exchange from Ship to Ship, Ship to Shore and Shore to Ship. Broadcast parameters include Registry Number, Port of Origin, Latitude, Longitude, Course, Speed and other vessel characteristics. The current prototype E-2C AIS installation is integrated into the E-2C weapon system without a means to transfer information off board to other platforms/systems.

FY2010 starts the Radar Improvement Program. This provides funding to develop, and field improvements to APS-145 WRAs to keep them viable until aircraft retirement.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	22.483	54.096	54.712
Current President's Budget:	18.969	53.834	63.058
Total Adjustments	-3.514	-0.262	8.346

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments	-3.100	-0.115	
SBIR/STTR/FTT Assessments	-0.414		
Program Adjustments			8.380
Rate/Misc Adjustments		-0.147	-0.034
Subtotal	-3.514	-0.262	8.346

Schedule:

Schedule:

Project Unit 0463 - Changes to ABC2 are due to cessation of Trident Warrior exercises after FY09 and date change of FY09 exercise; and new Empire Challenge (EC) exercises. FY08 JEFX exercise is changed to an EC exercise. Also, increasing frequency of Limited Objective Experiments to annual events. MSI Phase 2 HE2K Development and Deployment cancelled. Schedule changes to Core OA are due to contract administration delays. HF IP requirements definition and analysis and design and code are moved up one quarter due to availability of hardware. Added schedule for Radar Improvement Program.

Technical:

Project Unit 0463 - Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	18.969	53.834	63.058					
RDT&E Articles Qty	*10							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control (BMC2) capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification or replacement of selected Weapon Replaceable Assemblies (WRAs) of currently installed subsystems, as well as provided for experimentation with narrowband and wideband internet protocol (IP) concepts, to include technologies such as High Frequency (HF) Secure IP Router Network (HF SIPRNET), VRC-99 digital IP radio as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System (ADNS), Tactical Information Services (TIS), cooperative and non-cooperative identification, and open architected hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification (CID) and Theater Air and Missile Defense (TAMD) Capability. A Core Open Architecture capability will modernize existing Mission Computer (MC) and Operational Flight Program (OFP) architecture, preserve interfaces to future E-2 weapon systems modification, simplify maintenance and upgrades, memory and operating systems (hardware/software independence), add an improved networking backbone to quickly field future interoperable warfighting applications and utilize open and commercially adopted standards and protocols to the maximum extent possible.

An In Flight Refueling (IFR) capability will allow the E-2 to receive fuel from various organic and strategic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range & endurance). IFR will better enable the E-2 to fully support current Carrier Strike Group (CSG)/Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous domestic E-2 concept demonstration effort successfully established the feasibility of tanking behind the F/A-18E/F and KC-130 aircraft.

The Automatic Identification System (AIS) is a broadcast transponder system operating in the VHF maritime band that provides data exchange from Ship to Ship, Ship to Shore and Shore to Ship. Broadcast parameters include Registry Number, Port of Origin, Latitude, Longitude, Course, Speed and other vessel characteristics. The current prototype E-2C AIS installation is integrated into the E-2C weapon system without a means to transfer information off board to other platforms/systems.

FY2010 starts the Radar Improvement Program. This provides funding to develop, and field improvements to APS-145 WRAs to keep them viable until aircraft retirement.

* Quantity reflects number of Core Open Architecture (5) and High Frequency Internet Protocol (5) test article sets procured. For each, 3 sets used for laboratory development efforts at both the Contractor and Government sites, 1 set installed in the test aircraft, and 1 set is a spare for both laboratory and aircraft use.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Airborne Battlefield Command and Control (ABC 2)</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>5.023</td> <td>6.879</td> <td>5.205</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Airborne Battlefield Command and Control (ABC 2)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	5.023	6.879	5.205		RDT&E Articles Quantity				
Airborne Battlefield Command and Control (ABC 2)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	5.023	6.879	5.205																
RDT&E Articles Quantity																			
Funds development and demonstration of E-2 airborne Joint Sensor Netting (including Network Centric Collaborative Targeting (NCCT)), IP networking concepts (including Advanced Digital Networking Systems, Tactical Information Services, and IP enabled communications systems), machine-to-machine interface, open architected computing environment, network applications, tactical decision aids, combat identification technologies, on and off-board data fusion capabilities, and advanced mission computer and communications technologies airborne demonstrations.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">In Flight Refueling (IFR)</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></td> <td>8.734</td> <td>15.451</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					In Flight Refueling (IFR)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		8.734	15.451		RDT&E Articles Quantity				
In Flight Refueling (IFR)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		8.734	15.451																
RDT&E Articles Quantity																			
Funds the system development and testing to support the incorporation of In Flight Refueling (IFR) technology into the E-2 aircraft. Emphasis during system development is on design drawing updates, fuel system design, human systems integration and design, including interior/lighting modifications and seat replacement. Flight testing is required to evaluate field of view, aerodynamic performance, loads, and handling qualities.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Universal Automatic Identification System (UAIS)</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></td> <td>4.210</td> <td>4.095</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Universal Automatic Identification System (UAIS)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		4.210	4.095		RDT&E Articles Quantity				
Universal Automatic Identification System (UAIS)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		4.210	4.095																
RDT&E Articles Quantity																			
Funding integrates Universal Automatic Identification System (UAIS) into the E-2 mission computer and provides for a means to transfer Automatic Identification System (AIS) data from the aircraft inflight to the warships. The integration includes non-recurring engineering, logistics and test and evaluation to integrate UAIS control features and output into the E-2 weapons system and to standardize and document the UAIS hardware already installed on E-2 aircraft. It integrates other enhancing identification technologies complimentary to UAIS into the E-2.																			

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS																	
B. Accomplishments/Planned Program (Cont.)																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">E-2 Core Open Architecture (OA)</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>10.165</td> <td>26.274</td> <td>24.415</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td>*5</td> <td></td> <td></td> <td></td> </tr> </table>					E-2 Core Open Architecture (OA)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	10.165	26.274	24.415		RDT&E Articles Quantity	*5			
E-2 Core Open Architecture (OA)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	10.165	26.274	24.415																
RDT&E Articles Quantity	*5																		
Funding supports the development, integration and test of an open architected distributed computing environment and Internet Protocol networking infrastructure. * Quantity reflects number of Core OA test article sets procured. 3 sets for laboratory development efforts at both the Contractor and Government sites. 1 set installed in the test aircraft, and 1 set is a spare for both laboratory and aircraft use.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">E-2 High Frequency (HF) Internet Protocol (IP)</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>3.781</td> <td>7.737</td> <td>4.724</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td>*5</td> <td></td> <td></td> <td></td> </tr> </table>					E-2 High Frequency (HF) Internet Protocol (IP)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	3.781	7.737	4.724		RDT&E Articles Quantity	*5			
E-2 High Frequency (HF) Internet Protocol (IP)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	3.781	7.737	4.724																
RDT&E Articles Quantity	*5																		
Funds the development, integration and test of High Frequency (HF) radio and Mission Computer hardware and software modifications and additions to provide an E-2 HF digital data communications path, allowing for E-2 connectivity with other HF Internet Protocol (IP) users. * Quantity reflects number of HF IP test article sets procured. 3 sets for laboratory development efforts at both the Contractor and Government sites. 1 set installed in the test aircraft, and 1 set is a spare for both laboratory and aircraft use.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Radar Improvements Program</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></td> <td>9.168</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Radar Improvements Program	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost			9.168		RDT&E Articles Quantity				
Radar Improvements Program	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost			9.168																
RDT&E Articles Quantity																			
New start program in FY10 to develop, integrate, test, and field new components within the E-2C radar that are of high failure rate and expected to be unsupportable in the near term. Such improvements will keep the APS-145 radar viable until 2021, the projected E-2C retirement date. This funding also supports necessary modifications within the APS-145 Radar Test Bench System (RTBS).																			

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS	
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)	52.22	384.559	606.169
APN-5/E-2 (LI# 39)	10.244	27.408	40.053
APN-6/E-2C/D (LI# 57)	0.970	34.735	53.047
D. ACQUISITION STRATEGY:			
Not Applicable.			

UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N / BA-7			0204152N, E-2 SQUADRONS			0463, E-2C IMPROVEMENTS						
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 Development	VARIOUS	VARIOUS	2.184	0.774	VARIOUS	0.297	VARIOUS					
Primary Hdw Development - ABC2	VARIOUS	VARIOUS	2.325									
Primary Hdw Development - MSI	VARIOUS	VARIOUS	1.497									
Primary Hdw Development	SS-CPFF	NGC		1.815	12/08	0.540	12/09					
Primary Hdw Development	VARIOUS	VARIOUS	0.339	9.956	VARIOUS	15.729	VARIOUS					
Primary Hdw Development	SS-FFP	Lockheed Martin, Owego, NY	3.641									
Aircraft Integration	SS-CPFF	NGC	0.500	0.100	01/09	0.997	01/10					
Aircraft Integration	VARIOUS	VARIOUS				2.100	VARIOUS					
Systems Eng	TBD	TBD				0.901	05/10					
Ancillary Hdw Development	TBD	TBD				0.260	01/10					

UNCLASSIFIED

Exhibit R-3 Cost Analysis								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N / BA-7			0204152N, E-2 SQUADRONS			0463, E-2C IMPROVEMENTS						
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 ABC2	VARIOUS	VARIOUS	0.976	0.807	12/08	0.701	12/09					
Eng & Tech Serv	VARIOUS	VARIOUS	2.046	2.424	12/08	2.584	12/09					
Government Eng Spt - SIAP	VARIOUS	VARIOUS	0.516									
Government Engineering Support	VARIOUS	VARIOUS	7.630	0.805	11/08	1.621	11/09					
Government Engineering Support	WX	NAWCAD, PAX RIVER MD	1.119	7.721	11/08	5.044	11/09					
Integrated Logistics Support	VARIOUS	VARIOUS	0.220	0.858	12/08	1.452	12/09					
Software Development	C-CPFF	Wyle Labs, Huntsville, AL	1.892	1.827	12/08	0.729	12/09					
Software Development	VARIOUS	VARIOUS	1.721	2.532	VARIOUS	1.333	VARIOUS					
Software Development	VARIOUS	VARIOUS		15.174	VARIOUS	21.925	VARIOUS					

UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE:						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-7			0204152N, E-2 SQUADRONS				0463, E-2C IMPROVEMENTS						
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 T&E ETS	VARIOUS	VARIOUS	0.556	0.268	12/08	0.199	12/09						
Dev Test & Eval - MSI	VARIOUS	VARIOUS	0.730										
Dev Test & Eval - ABC2	VARIOUS	VARIOUS	7.610	2.185	11/08	0.781	11/09						
Dev Test & Eval	WX	NAWCAD, PAX RIVER MD		2.379	11/08	1.439	11/09						
Test Assets	VARIOUS	VARIOUS				0.621	VARIOUS						
Subtotal T&E			8.896	4.832		3.040							
Remarks: Totals may not add due to rounding.													
Government Eng Sup	VARIOUS	VARIOUS	.042										
Government Eng Sup	WX	NAWCAD, PAX RIVER MD	1.319	2.425	11/08	1.783	11/09						
Program Management Support ABC2	VARIOUS	VARIOUS	4.584	.294	11/08	.296	11/09						
Program Mgmt Spt CSS	C-CPFF	Wyle Labs, Huntsville, AL	1.654	.158	12/08	.182	12/09						
Program Mgmt Spt ETS	VARIOUS	VARIOUS	.939	1.182	12/08	1.379	12/09						
Travel	VARIOUS	VARIOUS	.388	.150	10/08	.165	10/09						
Subtotal Management			8.926	4.209		3.805							
Remarks: Totals may not add due to rounding.													
Total Cost			44.428	53.834		63.058							
Remarks: Totals may not add due to rounding.													

UNCLASSIFIED

EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						May 2009
RDT&E,N / BA-7						0204152N, E-2 SQUADRONS						0463, E-2C IMPROVEMENTS
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones												
Airborne Battlefield C2			EC 08	▲	LOE			TW	▲	LOE	JEFX 10	LOE
												Development
Core Open Arch												
High Frequency Internet Proto												
In Flight Refueling												
Universal Automatic Info System												
Radar Improvement Program												
Production Deliveries												

UNCLASSIFIED

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0204152N, E-2 SQUADRONS				0463, E-2C IMPROVEMENTS			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Airborne Battlefield C2 - Development	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Airborne Battlefield C2 - Empire Challenge (EC)	4Q							
Airborne Battlefield C2 - Trident Warrior (TW)		3Q						
Airborne Battlefield C2 - Joint Expeditionary Force Exercise (JEFX)			3Q					
Airborne Battlefield C2 - Limited Objective Experiment (LOE)	4Q	4Q	4Q					
Core Open Arch - Requirements Definition & Analysis	2Q-4Q	1Q						
Core Open Arch - Design & Code		2Q-4Q	1Q-4Q					
Core Open Arch - Test Asset Delivery (Est.)			2Q					
High Frequency Internet Proto - Requirements Definition & Analysis	1Q-3Q							
High Frequency Internet Proto - Design & Code	3Q-4Q	1Q-2Q						
High Frequency Internet Proto - Test Asset Delivery (Est.)		1Q						
High Frequency Internet Proto - System Integration & Test		3Q-4Q	1Q-2Q					
High Frequency Internet Proto - Deploy			3Q					
In Flight Refueling - Preliminary Design Review (PDR)		4Q						
In Flight Refueling - Developmental Test (DT)/Integrated Operational Test & Evaluation (IOT&E)		4Q	1Q-4Q					
In Flight Refueling - Critical Design Review (CDR)			2Q					
In Flight Refueling - Prototype System Installation			4Q					
Universal Automatic Info System - System Development		1Q-4Q						
Universal Automatic Info System - Test Readiness Review			1Q					
Universal Automatic Info System - Developmental Testing			1Q-4Q					
Radar Improvement Program - Development			1Q-4Q					
Radar Improvement Design Review (Est.)			4Q					

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7							May 2009	
R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	23.137	26.527	37.431					
0725 Communications Automation	9.603	11.467	15.514					
1083 Shore to Ship Communications	12.563	15.060	21.917					
9999 AN-USQ-155 Card Upgrade	0.971							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. It includes Tactical Messaging, Automated Digital Network System (ADNS), Tactical Switching Ashore, High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR). In Fiscal Year (FY) 10, begin Common Radio Room (CRR) communications for requirements analysis, system design and the Mobile Networking High Band (MNH) Increments 1 and 2. ADNS is the method by which tactical Navy units (surface, subsurface, and air assets) transfer Internet Protocol (IP) data to Navy and Department of Defense (DoD) communities on the Global Information Grid (GIG). ADNS serves as a gateway to enable joint and coalition interoperability for these tactical assets and ensures GIG connectivity. ADNS allows Unclassified, Secret, Top Secret traffic, and various joint, allied, and coalition services to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) paths and pier connectivity. ADNS provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting Naval, Coalition and Joint enclaves worldwide. ADNS utilizes Commercial Off the Shelf/ Government Off the Shelf (COTS/GOTS) equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) I provides initial limited, Ship to Shore IP connectivity, separation of enclaves, reuse of unused enclave bandwidth, and Ship to Shore Tactical IP connectivity. ADNS INC II provides additional capabilities of load balancing, RF restoral, Initial Quality of Service (QoS) to include application prioritization, initial traffic management, and enhancements designed to maximize use of available bandwidth for surface, shore, and airborne platforms. ADNS INC III converges all Navy tactical voice, video, and data requirements into a converged IP data stream. In addition, the INC III architecture incorporates an IPv4/IPv6 dual stack and a cipher text security architecture to align to the GIG in order to mesh Navy tactical surface, subsurface, and airborne platforms into a single IP environment with Gateway functions to Joint and Coalition Networks. ADNS INC III serves as the Navy tactical interface (Gateway) for IP Networking with Joint Tactical Radio System (JTRS), High Assurance Internet Protocol Encryptor (HAiPE), Advanced Extremely High Frequency (AEHF). Future ADNS capabilities will utilize the emerging transformational technologies to integrate additional DoD Command, Control, Communications, Computers, & Intelligence (C4I) Programs, to improve inter-strike group networking and extend the network to the tactical edge. Tactical Messaging: Tactical Messaging developed joint/combined individual and organizational message handling for United States Navy (USN) ships and submarines, Tactical Mobile (TacMobile) units, United States Marine Corp (USMC) vans, and selected Military Sealift Command (MSC) and United States Coast Guard (USCG) platforms. Tactical Messaging develops fleet interfaces to the Defense Messaging System (DMS) and legacy ashore messaging systems. DMS Proxy Afloat will develop the interface with Integrated Shipboard Networks System (ISNS) to allow removal of DMS Components from all ships.								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT
The Tactical Switching Ashore (TSw) program rebuilds 1970s based shore high frequency based infrastructure to current and future scalable technical standards in order to provide a commercially standardized, technically compliant, and robust network. TSw is the shore component for Consolidated Afloat Networks and Enterprise Services (CANES). TSw will migrate the shore sites and their terrestrial interconnections into a coherent, scalable, network-centric capability. While leveraging off recent shore upgrades for the major shore communication regions, TSw will incorporate a system integrator approach to develop, design, and implement a plan to remove bandwidth limitations, create failover communication paths, provide secure and available communications, provide dynamic bandwidth management, and reduce costly dependencies on legacy systems. This plan is designed to increase efficiencies, and reduce manpower and the overall footprint of the Navy's shore sites. In addition, TSw will provide an enterprise-wide network operations capability providing full network Situational Awareness (SA)/network visualization, network Management and Control (M/C) and automation capabilities. TSw will bring new technologies and capabilities that converge legacy, circuit-based, communications to a standard, integrated, and interoperable IP network. This enabling system, of which United States Navy enterprise network (FORCEnet) is a part, supports the four pillars of Sea Power 21 by providing the infrastructure required to support collaborative decision-making, faster decision cycles, and shared superior situational awareness required for Overseas Contingency Operations and mitigate network vulnerabilities. FY10 will continue the development for the implementation of ALL-IP interoperability allowing for the removal of the remaining legacy and Navy network architectures. TSw will develop the end to end QoS providing global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scaleable, sustainable, and dynamic failover global network architecture. TSw will develop the integration plan to maximize the DISN Core for transport, research, develop and test, and route diversification, and distributed joint services to allow access anywhere via distributed services. The High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR) program replaces legacy Battle force Email (BFEM) 66 and enables delivery of IP based collaboration services over legacy High Frequency (HF) assets. The intent is to provide an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. Supports Tactical Edge Networking and provides data path backbone for both airborne and afloat forces. Supports increased data exchange with Allied Coalition forces. Mobile Networking High Band (MNH) Increment 1 (WiFi/SeaLancet) is a component of the Naval Tactical Network collaborative effort to provide an overarching solution to fleet communications and networking requirements. This effort provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. It is an 802.11-based networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio provides a common wireless networking capability aboard LCS with applicability to other hull types, as well as other networked applications. MNH Increment 2 system is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic. It will achieve substantial spectral efficiency (frequency reuse) via narrow-beam antennas and a Time Demand Multiple Access (TDMA) based waveform. Also provides ad hoc (dynamic) communication nets using a discovery process. Provides theater-wide connectivity to units outside denied Satellite Communication (SATCOM) areas. Features next generation, fast switching, directional antenna technology to support multiple node connections. Uses IP based connectivity to achieve GIG (Global Information Grid) interoperability. The Shore to Ship Communications System develops communication system elements which provide positive command and control of deployed Ship Submersible Ballistic Nuclear Submarines (SSBNs), Ship Submersible Guided Nuclear Submarines (SSGNs), and Ship Submersible Nuclear Submarines (SSNs). The Shore to Ship Communications System which provides continuous assessment of the command and control links between the National Command Authority (NCA) and missile platforms is conducted to ensure compliance with Nuclear Technical Performance Criteria (NTPC). The Shore to Ship Communications System addresses joint system design issues for Emergency Action Message (EAM) distribution to all nuclear platforms and provides evaluation of joint interoperability of EAM delivery systems. Tools are developed to provide strategic command and control planning, within the submarine shore infrastructure, to support deployed SSBNs. The Low Band Universal Communications System (LBUCS) will ensure operational capability through the VLF architecture to ensure system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput and Anti-Jam capability, ensuring more operational products are delivered to a submarine without risking mast exposure. The flexibility further includes simplified shore architecture to maintain capability while utilizing fewer shore nodes (Broadcast Keying Sites). LBUCS also provides a replacement of the VLF receive system to ensure continued compliance with NTPC		

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT
Submarine communications allied interoperability issues are being investigated. Coalition architectures are developed and tested to address continued interoperability, as new technology is applied. Interoperability between coalition Submarine Operating Authorities (SUBOPAUTH) and submarines under US operational control are evaluated to determine the most effective approaches for interoperability in an environment dealing with changing North Atlantic Treaty Organization (NATO) standards for submarine communication. These standards migrate from serial to Internet Protocol (IP) based systems. A Project Arrangement has been signed by both US and UK to develop a Network Enabled Operation Capability. The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS) is an acquisition program to replace the NC3 Hybrid Solution (HS) with a new NC3 architecture, the Defense Information Systems Network (DISN) Dedicated IP Network (DIN) (NC3 LTS) system. The primary function and mission of NC3 LTS is to provide accurate and reliable delivery of time-critical messages for the nuclear forces. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages (EAMs), Nuclear Command and Control (NC2) messages including Nuclear Planning and Execution System (NPES) messages for force management, force direction, execution, and situation monitoring. Congressional add to develop a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections. FY10 funds will be used for increased development for Advanced Digital Networks System (ADNS), commence development for Common Radio Room (CRR), commence development for Mobile Networking High Band (MNH) increment number 1 and number 2, increased development for LBUCS and increase development for NC3 LTS.		

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT	
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY08	FY09	FY10
FY09 President's Budget:	23.582	26.696	24.832
FY10 President's Budget Submit:	23.137	26.527	37.431
Total Adjustments:	-0.445	-0.169	12.599
Summary of Adjustments :			
Program Adjustments:			12.737
Rate/Misc Adjustments:	-0.445	-0.169	-0.138
Subtotal:	-0.445	-0.169	12.599
Schedule:			
ADNS: Increment (INC) III System Development has slipped to incorporate INC III development modifications to the rack design, which pushed Developmental Testing (DT), Operational Testing (OT), Full Rate Production Decision Review (FRPDR), Initial Operational Capability (IOC), and Full operational Capability (FOC) to the right for INC III. Milestone C slipped from 2nd Quarter, Fiscal Year (FY) 2008, to 4th quarter, FY 2008. INC III Submarine efforts were added to reflect current requirements. Operational Testing (OT) planned for 2 Qtr FY10. Full Rate Production Decision Review (FRPDR) currently planned for 4th Qtr FY10.			
LBUCS: Milestone B completed 1st Qtr FY09.			
NC3-LTS: Milestone B is currently planned for 4th Qtr FY10.			
Technical:			

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0204163N FLEET COMMUNICATIONS		PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	9.603	11.467	15.514				
RDT&E Articles Qty			5				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. Tactical Messaging provides processing, storage, distribution and forwarding of General Service organizational messages on ships and submarines.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting Naval, Coalition and Joint enclaves worldwide. ADNS utilizes Commercial Off the Shelf/ Government Off the Shelf (COTS/GOTS) equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment I provides initial limited, Ship to Shore IP connectivity, separation of enclaves, reuse of unused enclave bandwidth, and Ship to tactical Shore IP connectivity. ADNS Increment II provides additional capabilities of Load Balancing, Radio Frequency (RF) restoral, Initial Quality of Service (QoS) to include application prioritization, Initial Traffic Management, and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS Increment III converges all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. Increment III interoperates with higher bandwidth satellites, supporting up to 25 Mega Bytes per Second (Mbps) of throughput on Unit Level ships and up to 50 Mbps on Force Level ships. Increment III architecture also incorporates an IPv4/IPv6 dual stack and a cipher text security architecture to align to joint and coalition networks, in addition to greater security utilizing the High Assurance Internet Protocol Encryptor (HAiPE) devices. ADNS INC III serves as the Navy Tactical Interface (Gateway) for IP Networking with Joint Tactical Radio System (JTRS), and Advanced Extremely High Frequency (AEHF). Future ADNS capabilities will utilize emerging transformational technologies to integrate with additional DoD C4I Programs, to improve inter-strike group networking and extend the network to the tactical edge.

Tactical Switching Ashore will support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, network capability.

The High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR) program replaces legacy Battle force Email (BFEM) 66 and enables delivery of IP based collaboration services over legacy High Frequency (HF) assets. The intent is to provide an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. Supports Tactical Edge Networking and provides data path backbone for both airborne and afloat forces. Supports increased data exchange with coalition forces.

The Mobile Networking High Band (MNH) Inc 1 (WiFi/SeaLancet) is a component of the Naval Tactical Network collaborative effort to provide an overarching solution to fleet communications and networking requirements. This effort provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. It is an 802.11-based networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio provides a common wireless networking capability aboard LCS with applicability to other hull types, as well as other networked applications.

The Mobile Networking High Band (MNH) Inc 2 system is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic. It will achieve substantial spectral efficiency (frequency reuse) via narrow-beam antennas and a Time Demand Multiple Access (TDMA) based waveform. Also provides ad hoc (dynamic) communication networks using a discovery process. Provides theater-wide connectivity to units outside denied Satellite Communication (SATCOM) areas. Features next generation, fast switching, directional antenna technology to support multiple node connections. Uses IP based connectivity to achieve GIG interoperability.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION	

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10
Automated Digital Network System (ADNS)			
Accomplishments/Effort/Subtotal Cost	5.093	5.686	8.227
RDT&E Articles Quantity			5

FY08 Accomplishments: Completed the system development and demonstration phase of ADNS Increment (INC) III with required interfaces. Developed acquisition documents, specifications, and capability requirements for INC III and future increments, as necessary to deliver technology, networks, and throughput capabilities defined in the ADNS Capability Development Document (CDD) for all Navy Tactical Units (Surface, Submarine, Airborne, Shore, and TACMOBILE).

FY09: Develop system modification of INC III for High Assurance Internet Protocol Encryptor (HAiPE) integration and submarine platforms. Develop acquisition documents, specifications, and capability requirements for INC III Subs. Develop and update system and subsystem interface designs for integration with new Satellite Communications (SATCOM) and Radio Frequency (RF) paths, as they emerge. Begin research and evaluation of emergent technology maturity for inclusion into future capabilities developed for ADNS systems.

FY10: Conduct INC III Developmental Testing (DT), conduct Operational Testing (OT) of INC III and Joint Interoperability Test Command (JITC) Certification of INC III. Continue the development of dynamic Quality of Service (QoS)/Ethernet modems. Continue the development of the system modification of INC III for HAiPE integration. Continue the development of acquisition documents, specifications, and capability requirements for INC III Subs. Continue the system development and demonstration phase for INC III for submarines. Perform acceptance test for INC III Subs, and begin the Common Submarine Radio Room (CSRR) integration effort. Continue the development of and update to system and subsystem interface designs for integration with new SATCOM and Radio Frequency (RF) paths, as they emerge. Continue the research and evaluation of emergent technology maturity for inclusion into future capabilities developed for ADNS systems.

	FY 08	FY 09	FY 10
Tactical Messaging (NAVMACS)			
Accomplishments/Effort/Subtotal Cost	0.554	1.230	0.000
RDT&E Articles Quantity			

FY08 Accomplishments: Performed planning and developmental testing for Interoperability Demonstration of the Defense Messaging System (DMS) Proxy solution to be implemented as part of the multiprogram Assured Internet Protocol (AIP) initiative.

FY09: Continue development and test efforts for emerging technology to transition Tactical Messaging into a Service Oriented Architecture to align with DoD Organizational Messaging (OM) of the future, and enable mobile tactical users to better support reporting for Maritime Domain Awareness.

FY10: No developmental requirements.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 08</th><th style="width: 15%;">FY 09</th><th style="width: 15%;">FY 10</th></tr></thead><tbody><tr><td>Tactical Switching (Ashore)</td><td></td><td></td><td></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">3.956</td><td style="text-align: center;">3.976</td><td style="text-align: center;">2.352</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table>					FY 08	FY 09	FY 10	Tactical Switching (Ashore)				Accomplishments/Effort/Subtotal Cost	3.956	3.976	2.352	RDT&E Articles Quantity			
	FY 08	FY 09	FY 10																
Tactical Switching (Ashore)																			
Accomplishments/Effort/Subtotal Cost	3.956	3.976	2.352																
RDT&E Articles Quantity																			
FY08 Accomplishments: Continued the Increment II Spiral B development that began in FY07. The program expanded the monitoring (Situational Awareness) , Management and Control capability developed in FY06/FY07 further defining the automation and remote capabilities of the Enterprise Network Management System (ENMS). In addition, TSw developed and designed a plan to eliminate bandwidth limitations within the architecture by designing failover communication paths either physical or virtual, providing real time integrated security, enabling dynamic bandwidth management, and reducing costly dependencies on legacy systems. This new capability requires less manual intervention and serves as the backbone technology to reduce the Navy communication facilities infrastructure while providing the 2 Regional Network Operations and Security Centers (RNOSC) with real-time network status/health. Efforts outlined in Increment II Spiral A and B provided the foundation for reducing the manpower and facilities which enabled substantial FYDP savings. FY09: Complete Increment II Spiral B development that continued in FY08. Complete the design, development, testing and implementation of the upgrades to the Tactical Switching and NOC systems to allow for full integration with the Joint Community on the All Internet Protocol (IP) Global Information Grid (GIG). Develop the design and implementation plan to eliminate the remaining legacy and Navy unique networking elements that remain in the Tactical Switching architecture. This will allow for full All IP interoperability and integration between Navy forces and the forces of other branches of the service in the Joint battlespace to allow for full Network Centric Warfare. Provide for full direct access for Navy war fighters through the Navy RNOSCs to the All IP GIG for full warfighting application data exchange. Provide the mechanism for dynamically and automatically managed real time integrated Information Assurance and security . Provide for Quality of Service (QoS) enabled traffic flow prioritization and fully automated dynamic bandwidth management. This new capability will require only a minimal amount of manual intervention and will provide for full integration between the Navy and Joint operational enclaves over UNCLAS, Secret, Sensitive Compartmented Information (SCI) and multiple Combined Enterprise Regional Information Exchange System (CENTRIXS) network enclaves. The integration of Navy and Joint operational enclaves over multiple security domains provides key foundational connectivity required to support the Navy's Maritime Domain Awareness efforts. FY10: FY10 will continue the development for the implementation of ALL-IP interoperability allowing for the removal of the remaining legacy and Navy unique network architectures. Additionally, TSw will develop the end to end QoS providing global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scaleable, sustainable, and dynamic failover for a global network architecture.																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 08</th><th style="width: 15%;">FY 09</th><th style="width: 15%;">FY 10</th></tr></thead><tbody><tr><td>HFIP/SNR</td><td></td><td></td><td></td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.575</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table>					FY 08	FY 09	FY 10	HFIP/SNR				Accomplishments/Effort/Subtotal Cost	0.000	0.575	0.000	RDT&E Articles Quantity			
	FY 08	FY 09	FY 10																
HFIP/SNR																			
Accomplishments/Effort/Subtotal Cost	0.000	0.575	0.000																
RDT&E Articles Quantity																			
FY08 Accomplishments: No developmental requirements. FY09: Conduct market survey and testing for modems with increased data rates supporting High Frequency (HF) and Ultra High Frequency (UHF) Systems. Investigate new technologies in support of High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR). Efforts may involve studies or development / testing of potential technologies for future program insertion. FY10: No developmental requirements.																			

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION	

B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10
Mobile Networking High Band (MNH) Inc 1 (WiFi/SeaLancet)			
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.974
RDT&E Articles Quantity			

FY08 Accomplishments: No developmental requirements.
FY09: No developmental requirements.
FY10: Obtain Milestone B Decision. Prepare new start acquisition documentation and Analysis of Alternatives (AoA). Award prime prototype/Engineering Development Module (EDM) contract and begin system development.

	FY 08	FY 09	FY 10
Mobile Networking High Band (MNH) Inc 2			
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.961
RDT&E Articles Quantity			

FY08 Accomplishments: No developmental requirements.
FY09: No developmental requirements.
FY10: Obtain Milestone B Decision. Prepare new start acquisition documentation and Analysis of Alternatives (AoA). Award prime prototype/Engineering Development Module (EDM) contract and begin system development.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS	0725 COMMUNICATIONS AUTOMATION	

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
3050 – Ship Comm Auto – Tactical Messaging	2.626	2.672	3.890
3050 – Ship Comm Auto – ADNS	46.308	51.947	37.405
3050 – Ship Comm Auto – Tactical Switching (Ashore)	35.325	41.872	27.269
3057 – Comm Items Under \$5M – HFIP/SNR	6.503	14.043	13.356
 TOTAL	 90.762	 110.534	 81.920

D. ACQUISITION STRATEGY:

Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined Increment I, II, and III baselines. Increment I, II, and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS aggressively leverages Commercial Off The Shelf (COTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decreased contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

Tactical Messaging): Tactical Messaging provides tactical war fighters with Command, Control, and Communication (C3) functionalities and functions in an open architecture environment. The program uses state-of-the-art technology that reduces operator training, technical support, maintenance, and overall life cycle system costs. The system uses COTS hardware and software and Government Off the Shelf (GOTS) furnished software.

Tactical Switching Ashore: Evolutionary acquisition approach with overlapping development and implementation increments. Use existing contract vehicles during Increment I implementation of procurement upgrades to existing shore legacy equipment at the major communication centers (Naval Computer & Telecommunications Area Master Station (NCTAMS) Pacific (PAC), NCTAMS Atlantic (LANT), NCTAMS Europe Central (EURCENT), Naval Computer & Telecommunications Station (NCTS) Bahrain, and NCTS San Diego) and to include 40+ shore communication facilities (Communication Stations (COMSTATIONS), Naval Operations Centers (NOCs), Mini-NOCs, and Standard Tactical Data Entry Point (STEP) sites). Increment I upgrades serve as an enabler to Increment II activities. Based upon the future shore communication architecture as defined by the Navy, Increment II transitions the Navy's 3 NCTAMS and two major Network Control Terminal (NCT) Shore infrastructure to a 2 regional network operations and security center (RNOSC) and 1 global network operations and security center (GNOSC) concept to achieve a Joint/Department of Defense (DoD) Net-Centric environment. Increment II will be organized into two steps. Each step will build upon the previous step and serve as risk mitigation for the succeeding step. This strategy provides flexibility in a rapidly evolving technology environment and allows earlier implementation of developmental technology as it becomes available. The Increment III strategy is to maximize the use of joint resources. Tactical Switching will maximize the Defense Information Systems Network (DISN) Core for unified Navy transport, allowing for route diversification and distributed joint services allowing access anywhere via distributed services.

Mobile Networking High Band (MNH) Inc 1/2: MNH INC 1 and 2 contracts are anticipated to be awarded as SPAWAR Headquarters contracts with LRIP options built in.

E. MAJOR PERFORMERS

MNH Inc 1 - RSS and Harris Corporation (Melbourne, FL) are currently supporting the NAVSEA SBIR effort.
MNH Inc 2 - TBD
HFIP/SNR - COMOPTEVFOR

F. METRICS

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

EXHIBIT R-3 Cost Analysis							DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			0204163N FLEET COMMUNICATIONS				0725 COMMUNICATIONS AUTOMATION			
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	PO	SSC	1.025							
Primary Hardware Development	CPFF	Northrop Grumman	6.196	1.992	Dec-08					
Primary Hardware Development	CPFF	General Dynamics	6.801	4.866	Apr-09	7.896	Apr-10			
Primary Hardware Development	CPFF	SRA	0.000	0.010	Dec-09	0.016	Dec-09			
Primary Hardware Development	TBD	TBD	0.000			2.661	Jun-10			
Primary Hardware/Software	CPFF	Air Force	2.078							
Primary Hardware/Software	TBD	RSS/Harris (Melobo	0.000			1.674	Mar-10			
Integration and Test	WX	SSC	0.000	0.365	Feb-09	0.592	Feb-10			
Integration and Test	CPFF	VAR	0.000	0.030	Dec-08	0.049	Dec-09			
Systems Engineering	WX	SSC	18.185	0.800	Dec-09	0.652	Dec-09			
Systems Engineering	VAR	VAR	6.096							
Systems Engineering	WX	NUWC	0.633	0.128	Dec-08	0.208	Dec-09			
Prime Mission Product	PO	SSC	4.353							
Subtotal Product Development			45.367	8.191		13.748				
Remarks:										
Development Support	WX	SSC	0.160							
Software Development	VAR	VAR	5.501							
Integrated Logistics Support	VAR	VAR	1.150							
Documentation	VAR	VAR	0.706							
Technical Data	VAR	VAR	0.500							
Studies and Analysis	WX	SSC	0.960							
Subtotal Support			8.977	0.000		0.000				
Remarks:										

EXHIBIT R-2BUDGET ITEM JUSTIFICATION
CLASSIFICATION:
UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			0204163N FLEET COMMUNICATIONS				0725 COMMUNICATIONS AUTOMATION			
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	2.772	1.554	Dec-08	0.400	Dec-09			
Developmental Test & Evaluation	MP	CECOM (MITRE)	0.000	0.295	Nov-08					
Developmental Test & Evaluation	MP	JITC	0.084	0.061	Oct-08	0.099	Oct-09			
Operational Test & Evaluation	WX	COMOPTVFOR	0.550	0.226	Nov-08	0.367	Nov-09			
Operational Test & Evaluation	VAR	VAR	4.955							
Subtotal T&E			8.361	2.136		0.866				
Remarks:										
Contractor Engineering Support	VAR	VAR	0.481	0.065						
Contractor Engineering Support	CPFF	SSC SD	0.000			0.400	Dec-09			
Government Engineering Support	WX	SSC	0.380	0.437	TBD					
Program Management Support	WX	SSC	2.485							
Program Management Support	CPAF	VAR	7.268	0.500	Nov-08	0.300	Nov-09			
Program Management Support	CPFF	TBD	0.000	0.138	Mar-09	0.200	Dec-09			
Subtotal Management			10.614	1.140		0.900				
Remarks:										
Total Cost			73.319	11.467		15.514		Continuing	Continuing	

EXHIBIT R-2BUDGET ITEM JUSTIFICATION
CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R4, Schedule Profile														DATE: May 2009																					
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS										PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION - ADNS															
Fiscal Year	2008				2009				2010																										
	1	2	3	4	1	2	3	4	1	2	3	4																							
Acquisition Milestones			MS C INC III △								IOC INC III △																								
											FRPDR INC III △																								
System Development							PDR INC III Subs △	CDR INC III Subs △																											
	System Development INC III												Interface Design Development with Future SATCOM and Radio																						
Test & Evaluation Milestones																																			
Development Test																																			
Operational Test																																			
Production																																			
	Fielding & Sustainment - INC II/IIa/IIb																																		

EXHIBIT R4, Schedule Profile																		DATE: May 2009														
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7										0204163N FLEET COMMUNICATIONS										0725 COMMUNICATIONS AUTOMATION - TACTICAL MESSAGING												
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones																																
System Development (Note 1)	DMS Proxy																															
			TSC/C CDS																													
Software																																
S/W Delivery (DMS Proxy V 1.0) (Note 2)																																
Test & Evaluation Milestones																																
Interoperability Demonstration																																
JITC IV&V Certification	DMS Proxy																															
Deliveries (Note 3, 4)			9					9			9																					

Notes:
 1/ TSC/C CDS discontinued as directed by Naval Netwar FORCEnet Enterprise Board of Directors Jan 8, 2009
 2/ Software Deliveries canceled per Naval NETWARCOM memo of 27 Feb 2009 which redefined the way ahead for Naval Messaging.
 3/ Quantities of deliveries were changed to reflect updated fielding plan.
 4/ Deliveries represent OPN hardware quantities.

R-1 Line Item No. 167
Page 15 of 33

Exhibit R-4a, Schedule Detail				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS			0725 COMMUNICATIONS AUTOMATION - TACTICAL SWITCHING ASHORE				
Schedule Profile - Tactical Switching Ashore	FY 2008	FY 2009	FY 2010					
Increment II IOC	2Q							
Increment II FOC			4Q					
Increment II Spiral B Hardware/Software Development	1Q-4Q	1Q-3Q						
Increment III Requirements Definition/Systems Specifications		2Q-4Q	1Q-3Q					
Increment III IOC								
Development Testing (DT) Increment II Spiral B	3Q	3Q						
JTIC Increment III								
IV&V/JITC Increment II Spiral B	4Q	3Q						
Systems of Systems Testing	1Q-4Q	1Q-4Q	1Q-4Q					
Increment II Spiral A Production/Installation	1Q-4Q	1Q						
Increment II Spiral B Production/Installation		2Q-Q4	1Q-4Q					
Increment III Production/Installation								
Deliveries - OPN		1Q						

* Joint Interoperability Test Center (JITC)

EXHIBIT R4, Schedule Profile																DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7								0204163N FLEET COMMUNICATIONS								0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 1																
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones									△ MS B																							
System Development									△ Contract Award			Development																				

EXHIBIT R4, Schedule Profile																DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7								0204163N FLEET COMMUNICATIONS								0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 2																
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones									△ MS B																							
System Development											△ Contract Award	Dev																				

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT			PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	12.563	15.060	21.917					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project develops communication system elements which provide positive command and control of deployed Ship Submersible Ballistic Nuclear (SSBN)s and fleet submarine broadcast connectivity to Ship Submersible Nuclear (SSN)s, Ship Submersible Guided Nuclear (SSGNs) and SSBNs. This project provides enhancements to the shore-to-ship transmitting systems and provides submarine capabilities to the Broadcast Control Authority (BCA) consistent with the Network Operation Center (NOC) architecture. The BCA provides the oversight and control for all fixed submarine broadcasts. The Continued Evaluation Program (CEP) provides constant assessment of the effectiveness of the end-to-end network. The Submarine Operating Authority (SUBOPAUTH) includes both submarine communications and Operational Control (OPCON) at shore sites. A SUBOPAUTH architecture provides for back-up capability among the four Broadcast Control Authority/Operational Control (BCA/OPCONs) to ensure Continuity-of-Operations Procedure (COOP) in the event of a BCA outage. Concept Development/System Planning provides Network Enabled Operations (NEO) ensuring the integration of multiple combinations of US - Allied data exchange. This is achieved within and between the dimensional constraints of the US and Allied BCA/OPCON spaces. Concept Development/System Planning also provides the modeling of unique Very Low Frequency/Low Frequency (VLF/LF) submarine communications from the large physical shore broadcast antennas to underwater depth penetration can be reflected in the future BCA/OPCON planning tools. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed Very Low Frequency VLF (FVLF) transmit systems are evaluated and tested through the High Voltage Improvement Program (HVIP). The Nuclear Command Control and Communications Long Term Solution (NC3 LTS) will replace the NC3 Hybrid Solution (HS) with a new NC3 architecture, the Defense Information Systems Network (DISN) Dedicated IP Network (DIN) (NC3 LTS) system. The primary function and mission of NC3 LTS is to provide accurate and reliable delivery of time critical messages for the nuclear forces. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages (EAM), Nuclear Command and Control (NC2) messages including, Nuclear Planning and Execution Systems (NPES) messages for force management, force direction and execution, and situation monitoring. Low Band Universal Communications System (LBUCS) provides operational capability through the VLF architecture to ensure system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput, ensuring more operational products are delivered to a submarine without risking mast exposure.

The LBUCS will continue its development effort in FY10 and the NC3 LTS program will be increasing the development efforts in FY10. Planned FY10 activities for NC3 LTS are completion of the Capabilities Development Document, Test and Evaluation Master Plan, and release of a Request for Proposal.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT	PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM

B. Accomplishments/Planned Program

Low Band Universal Communication System (LBUCS)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	4.784	5.949	9.370	
RDT&E Articles Quantity				

FY08 Accomplishments: Completed Milestone B.

FY09: Complete Request for Proposal (RFP). Award Prime Contract for EDM development of transmit terminal for testing. Contractor to begin development and integration of LBUCS transmit hardware and software.

FY10: Commence Engineering Development Model (EDM). Contractor continues development effort and Integration of LBUCS transmit hardware and software. Commence CPD development for transmit terminal in support of Milestone C. Complete Preliminary Design Review (PDR) for transmit terminal. Complete Critical Design Review (CDR) for transmit terminal. Continue updating acquisition documentation for Milestone C. Commence preparations of acquisition documentation for receive terminal.

Nuclear Command, Control Communications Long Term Solution (NC3 LTS)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	2.121	3.963	6.817	
RDT&E Articles Quantity				

FY08 Accomplishments: Completed Analysis of Alternatives (AoA). Commenced Capabilities Development Document (CDD) and System Performance Specification (SPS)/RFP. Commenced development of Test and Evaluation Master Plan (TEMP). Commenced preparation of Milestone B acquisition documentation.

FY09: Continue development of CDD. Continue development of RFP/SPS. Continue development of TEMP. Continue preparation of Milestone B acquisition documentation.

FY10: Complete CDD. Complete RFP. Complete TEMP. Complete Milestone B.

Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	3.398	2.490	3.820	
RDT&E Articles Quantity				

FY08 Accomplishments: Continued efforts for assessment of strategic communications capabilities and deficiencies and for evaluation of Nuclear Strategic Communications and Emergency Action Message delivery.

FY09: Continuation of strategic communications capabilities and deficiencies assessment for evaluation of Nuclear Strategic Communications and EAM delivery.

FY10: Continuation of strategic communications capabilities and deficiencies assessment for evaluation of Nuclear Strategic Communications and EAM delivery.

EXHIBIT R-2BUDGET ITEM JUSTIFICATION

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT	PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM

(U) B. Accomplishments/Planned Program

Concept Development/Systems Planning	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	1.353	1.603	0.945	
RDT&E Articles Quantity				

FY08 Accomplishments: Demonstrated an optimized bandwidth algorithm in a laboratory environment. Commenced integrate Joint/Allied NEO with other US Navy enterprise network (FORCEnet) applications. Completed a Project Arrangement with United Kingdom (UK) for Experimentation.
FY09: Continue the integration of Joint/Allied NEO with other US Navy enterprise network (FORCEnet) applications.
FY10: Continue the integration of Joint/Allied NEO with other FORCEnet applications.

High Voltage Improvement Program	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.410	0.521	0.516	
RDT&E Articles Quantity				

FY08 Accomplishments: Commenced examination of ultra quick cut off devices to prevent overload conditions.
FY09: Continue examination of ultra quick cut off devices to prevent overload conditions. Commence examination of Nanocrystalline Ferrites to reduce the loss and size of Helix Enclosures.
FY10: Complete examination of ultra quick cut off devices to prevent overload conditions. Continue examination of Nanocrystalline Ferrites to reduce the loss and size of Helix Enclosures.

Common Submarine Radio Room (CSRR)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.497			
RDT&E Articles Quantity				

FY08 Accomplishments: Completed modernization development and testing of Digital Modular Radio and Super High Frequency capabilities.

Broadcast Control Agency Architecture	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost		0.534	0.449	
RDT&E Articles Quantity				

FY09: Commence development of SUBOPAETH communications tools to automate functionality at the SUBOPAETH to reduce operational workload.
FY10: Continue development of SUBOPAETH communications tools.

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009																				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT		PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM																				
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: center;">FY 2008</th> <th style="text-align: center;">FY 2009</th> <th style="text-align: center;">FY 2010</th> <th style="text-align: center;">FY 2011</th> <th style="text-align: center;">FY 2012</th> <th style="text-align: center;">FY 2013</th> <th style="text-align: center;">FY 2014</th> <th style="text-align: center;">FY 2015</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">3107 Submarine Broadcast Support</td> <td style="text-align: center;">4.086</td> <td style="text-align: center;">3.130</td> <td style="text-align: center;">0.105</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Low Band Universal Communications System (LBUCS): LBUCS is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System (FSBS) which are approaching their operational end of life. In December of 2008 a Request for Proposal to develop a follow on solution to the shore-based Transmit subsystem was released to industry to address end of life issues and new FSBS Information Assurance (IA) requirements. A cost plus incentive fee contract will be awarded for Transmit subsystem development in 4QFY09 with three sequential fixed price options Contract Line Item Numbers (CLINs) for production and deployment. The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS): NC3 LTS will provide accurate and reliable delivery of time-critical messages for the nuclear forces by developing a Defense Information Systems Network (DISN) Dedicated IP Network (DIN). Milestone B for the program is projected in 4QFY10. Contract planning activities are scheduled to commence in 4QFY09, leading to a Request for Proposal release in 3QFY10.									Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	3107 Submarine Broadcast Support	4.086	3.130	0.105					
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015																		
3107 Submarine Broadcast Support	4.086	3.130	0.105																							

EXHIBIT R-3, RDT&E Project Cost Analysis									DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				0204163N FLEET TACTICAL DEVELOPMENT				1083 SHORE TO SHIP COM 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	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	14.582	4.737	Nov-09	9.455	Nov-10					
Ancillary Hardware Development	Various	Various	1.166	0.575	Nov-09	0.575	Nov-10					
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	27.325	2.600	Nov-09	3.184	Nov-10					
Systems Engineering	WR	SSC San Diego, CA	43.254	0.655	Nov-09	0.670	Nov-10					
Systems Engineering	WR	Misc. Labs, NUWC, RI	12.475	0.498	Nov-09	0.498	Nov-10					
Systems Engineering	WR	US Army, Monmouth, NJ	6.572	0.525	Nov-09	0.525	Nov-10					
Systems Engineering	Various	Various	16.154									
Subtotal Product Development			121.528	9.590		14.907		-				
Remarks:												
Development Support			5.330	0.909	Nov-09	3.212	Nov-10					-
Software Development	WR	SSC San Diego, CA	9.064									
Software Development	TBD	TBD	-	1.220	TBD	1.830	TBD					
Training Development			-									
Integrated Logistics Support			0.960	0.215	Nov-09	0.215	Nov-10					
Acquisition/Program Development			0.984	0.261	Nov-09	0.261	Nov-10					
Technical Data			2.822									
GFE			-									
Subtotal Support			19.160	2.605		5.518						
Remarks:												

EXHIBIT R-3, RDT&E Project Cost Analysis										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT					PROJECT NUMBER AND NAME		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					0204163N FLEET TACTICAL DEVELOPMENT					1083 SHORE TO SHIP COM 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	FY 11 Cost	FY 11 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Strategic OP Systems Perf Evaluation	CPFF	APL/JHU, Baltimore, MD	17.633	1.482	Dec-09	0.104	Dec-10					
System Testing	Various	Various	7.959	0.448	Dec-09	0.448	Dec-10					
Tooling												
GFE												
Subtotal T&E			25.592	1.930		0.552		-				
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ	1.375	0.201	Dec-09	0.201	Dec-10					
Government Engineering Support	WR	Various	1.365	0.456	Dec-09	0.456	Dec-10					
Program Management Support	Various	Various	4.938	0.228	Dec-09	0.233	Dec-10					
Travel			0.150	0.050		0.050						
Subtotal Management			7.828	0.935		0.940		-				
Remarks:												
Total:			174.108	15.060		21.917		-				

EXHIBIT R4, Schedule Profile																								DATE:								
Low Band Universal Communications System																								May 2009								
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7												0204163N FLEET TACTICAL DEVELOPMENT												1083 SHORE TO SHIP COM SYSTEM-LBUCS								
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																																
Transmit					▲																											
					MS-B																											
Receive																																
Requirements Definition																																
Transmit										△																						
Receive																																
Contractual Milestones/Timeline																																
Transmit					▲				△		△		△																			
					RFP				CA		PDR		CDR																			
Receive																																
Test & Evalutaion																																
Equipment Procurement																																
Transmit																																
Receive																																

[illegible]

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																								DATE: May 2009								
Nuclear Command, Control, Communications Systems - Long Term Solution																																
APPROPRIATION/BUDGET ACTIVITY														PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME								
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7														0204163N FLEET TACTICAL DEVELOPMENT										1083 SHORE TO SHIP COM SYSTEM-NC3-LTS								
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													△ MS-B																			
Requirements Definition		▲ AcA										△ CDD																				
Contractual Milestones/Timelines												△ CFC	△ RFP																			
Test & Evaluation:																																
Equipment Procurement																																

EXHIBIT R-2BUDGET ITEM JUSTIFICATION
CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT		PROJECT NUMBER AND NAME 9999 AN-USQ-165 CARD UPGRADE		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	0.971							
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Develop a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT	PROJECT NUMBER AND NAME 9999 AN-USQ-165 CARD UPGRADE

B. Accomplishments/Planned Program

AN-USQ-165 Card Upgrade	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.971			
RDT&E Articles Quantity				

FY08 Accomplishments: Developed a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with the DoD /DoN directive for Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections.

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204229N, TOMAHAWK & TMPC			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	14.633	18.132	13.238					
0545 TOMAHAWK	10.293	14.143	13.238					
9999 CONGRESSIONAL ADD	4.340	3.989						
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tomahawk Weapons System (TWS) provides a Tomahawk cruise missile attack capability against targets on land (Tomahawk Land Attack Missile (TLAM)). The TLAM can be fitted with either conventional unitary warhead (TLAM/C), nuclear warhead (TLAM/N) or submunition dispenser (TLAM/D). This program ensures that the TWS exploits state-of-the-art technology to preserve the efficiency of this proven weapon system, and includes all missile development, mission planning system development, and submarine and surface ship weapons control system development. The Tactical Tomahawk (TACTOM) All-Up-Round Block IV missile is a comprehensive spiral baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, increased accuracy and higher lethality. A five-year multi-year (FY04-FY08) production contract was awarded in August 2004 for the production of up to 2200 Block IV Tomahawk missiles. The essential upgrades of the Block IV missile are: improved guidance, navigation, control and mission computer two-way satellite communications, and a lower production cost as compared to the Block III missile. Block IV provides a UHF SATCOM data link to enable the missile to receive in-flight mission modification messages, to transfer health and status messages and to broadcast Battle Damage Indication (BDI) messages. Block IV also included a high anti-jam GPS receiver, navigation improvements and associated antenna systems. The Tomahawk Program (A0545) also included development of Torpedo Tube Launch (TTL) capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operational Requirements Document (ORD), to include development of the Joint Chiefs of Staff (JCS)-directed incorporation of Selective Availability Anti-Spoofing Module (SAASM) capability. A third waiver will be requested as the program slipped its FY09 date for SAASM incorporation to FY11. The Tomahawk Command and Control System (TC2S) Theater Mission Planning Center (TMPC) and Afloat Planning System (APS) (a shipboard version of TMPC) provide mission planning and employment support information for both the nuclear (TMPC only) and conventional TLAM, including the distribution of mission data and command information essential to TLAM employment via the Mission Distribution System (MDS) and associated communications infrastructure. Development of Tactical Tomahawk capabilities in TMPC/APS/MDS includes software development, integration, test, and delivery, including support for TECHEVAL and OPEVAL, training development, installation planning, and simulation/model development required by COMOPTEVFOR to offset live missile flights in TECHEVAL and OPEVAL. This project also includes development related to national and tactical imagery architectures, as well as software development to decrease mission-planning time and increase the quality and accuracy of each mission for Block III and IV TLAM. The Tomahawk Weapons Control System provides launch capability for surface and submarine platforms. Development of the Tactical Tomahawk Weapons Control System (TTWCS) provides a common architecture to launch the Tactical Tomahawk Block IV and all variants in inventory. Development of upgrades to the Tactical Tomahawk Weapons Control System (TTWCS) is required to meet the DoD IT Standards Registry (DISR), to meet FORCEnet compliance and be Internet Protocol Version 6 (IPv6) ready in order to remain interoperable within the Joint Service Architecture. These efforts provide battle-group tactical flexibility and responsiveness while maximizing TWS wartime capability. The Tactical Tomahawk FY 09 Congressional funding supporting the Cost Reduction Initiative (CRI) provides for development and implementation of an affordability process to identify, investigate, plan and execute viable cost reduction initiatives (CRIs) for the Tomahawk F415 engine. FY 08 and FY 09 Congressional funding for the Precision Terrain-Aided Navigation (PTAN) provides for the development and design maturation of the PTAN subsystem and provides expertise in integrating the PTAN into the Tomahawk Block IV (AUR). The efforts support simulations, test missions development and integration of PTAN with the Tomahawk Block IV avionics. FY 09 Congressional funding for Image-Based Navigation funds provide analysis to assess reliability and performance of Image Navigation Reference Products in the TC2S.								

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																												
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0204229N, TOMAHAWK & TMPC																																																												
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"><thead><tr><th style="text-align: left; width: 35%;">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>Previous President's Budget:</td><td style="text-align: right;">15.687</td><td style="text-align: right;">14.212</td><td style="text-align: right;">13.435</td></tr><tr><td>Current BES</td><td style="text-align: right;">14.633</td><td style="text-align: right;">18.132</td><td style="text-align: right;">13.238</td></tr><tr><td>Total Adjustments</td><td style="text-align: right; border-top: 1px solid black;">-1.054</td><td style="text-align: right; border-top: 1px solid black;">3.920</td><td style="text-align: right; border-top: 1px solid black;">-0.197</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 colspan="4" style="padding-left: 20px;">Congressional Rescissions</td></tr><tr><td colspan="4" style="padding-left: 20px;">Congressional Adjustments</td></tr><tr><td></td><td></td><td style="text-align: right;">3.969</td><td></td></tr><tr><td colspan="4" style="padding-left: 20px;">SBIR/STTR/FTT Assessments</td></tr><tr><td></td><td style="text-align: right;">-0.197</td><td></td><td></td></tr><tr><td colspan="4" style="padding-left: 20px;">Program Adjustments</td></tr><tr><td></td><td style="text-align: right;">-0.834</td><td></td><td style="text-align: right;">-0.195</td></tr><tr><td colspan="4" style="padding-left: 20px;">Rate/Misc Adjustments</td></tr><tr><td></td><td style="text-align: right;">-0.023</td><td style="text-align: right;">-0.049</td><td style="text-align: right;">-0.002</td></tr><tr><td>Subtotal</td><td style="text-align: right; border-top: 1px solid black;">-1.054</td><td style="text-align: right; border-top: 1px solid black;">3.920</td><td style="text-align: right; border-top: 1px solid black;">-0.197</td></tr></tbody></table> Schedule: The schedule for the software implementation of the SAASM features was shifted to align with the Tactical Tomahawk Weapons Control System (TTWCS) software version v5.4.0 development schedule. The one quarter difference between v5.4 and SAASM's IOC is for platform integration testing of SAASM once v5.4 is installed on the platforms. SAASM capability will be demonstrated on an Operational Test Launch (OTL) Flight Test. Launch Platform Integration covers integration of the Tomahawk Weapons System onto DDG-1000, VIRGINA Class, and SSGN platforms. TTWCS v5.4.0 - software build for DDG 112 integration. TTWCS v5.3.6 - maintenance build to fix DT/OT IIID issues. Technical: N/A			Funding:	FY08	FY09	FY10	Previous President's Budget:	15.687	14.212	13.435	Current BES	14.633	18.132	13.238	Total Adjustments	-1.054	3.920	-0.197	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments						3.969		SBIR/STTR/FTT Assessments					-0.197			Program Adjustments					-0.834		-0.195	Rate/Misc Adjustments					-0.023	-0.049	-0.002	Subtotal	-1.054	3.920	-0.197
Funding:	FY08	FY09	FY10																																																											
Previous President's Budget:	15.687	14.212	13.435																																																											
Current BES	14.633	18.132	13.238																																																											
Total Adjustments	-1.054	3.920	-0.197																																																											
Summary of Adjustments																																																														
Congressional Rescissions																																																														
Congressional Adjustments																																																														
		3.969																																																												
SBIR/STTR/FTT Assessments																																																														
	-0.197																																																													
Program Adjustments																																																														
	-0.834		-0.195																																																											
Rate/Misc Adjustments																																																														
	-0.023	-0.049	-0.002																																																											
Subtotal	-1.054	3.920	-0.197																																																											

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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-7		0204229N, TOMAHAWK & TMPC			0545, TOMAHAWK			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
0545 TOMAHAWK	10.293	14.143	13.238					
RDT&E Articles Qty - N/A								

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Tomahawk Weapons System (TWS) provides a Tomahawk cruise missile attack capability against targets on land (Tomahawk Land Attack Missile (TLAM)). The TLAM can be fitted with either conventional unitary warhead (TLAM/C), nuclear warhead (TLAM/N) or submunition dispenser (TLAM/D). This program ensures that the TWS exploits state-of-the-art technology to preserve the efficiency of this proven weapon system, and includes all missile development, mission planning system development, and submarine and surface ship weapons control system development.

The Tactical Tomahawk (TACTOM) All-Up-Round Block IV missile is a comprehensive spiral baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, increased accuracy and higher lethality. A five-year multi-year (FY04-FY08) production contract was awarded in August 2004 for the production of up to 2200 Block IV Tomahawk missiles. The essential upgrades of the Block IV missile are: improved guidance, navigation, control and mission computer two-way satellite communications, and a lower production cost as compared to the Block III missile. Block IV provides a UHF SATCOM data link to enable the missile to receive in-flight mission modification messages, to transfer health and status messages and to broadcast Battle Damage Indication (BDI) messages. Block IV also included a high anti-jam GPS receiver, navigation improvements and associated antenna systems. The Tomahawk Program (A0545) also included development of Torpedo Tube Launch (TTL) capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operational Requirements Document (ORD), to include development of the Joint Chiefs of Staff (JCS)-directed incorporation of Selective Availability Anti-Spoofing Module (SAASM) capability. A third waiver will be requested as the program slipped its FY09 date for SAASM incorporation to FY11.

The Tomahawk Command and Control System (TC2S) Theater Mission Planning Center (TMPC) and Afloat Planning System (APS) (a shipboard version of TMPC) provide mission planning and employment support information for both the nuclear (TMPC only) and conventional TLAM, including the distribution of mission data and command information essential to TLAM employment via the Missior Distribution System (MDS) and associated communications infrastructure. Development of Tactical Tomahawk capabilities in TMPC/APS/MDS includes software development, integration, test, and delivery, including support for TECHEVAL and OPEVAL, training development, installation planning, and simulation/model development required by COMOPTEVFOR to offset live missile flights in TECHEVAL and OPEVAL. This project also includes development related to national and tactical imagery architectures, as well as software development to decrease mission-planning time and increase the quality and accuracy of each mission for Block III and IV TLAM.

The Tomahawk Weapons Control System provides launch capability for surface and submarine platforms. Development of the Tactical Tomahawk Weapons Control System (TTWCS) provides a common architecture to launch the Tactical Tomahawk Block IV and all variants in inventory. Development of upgrades to the Tactical Tomahawk Weapons Control System (TTWCS) is required to meet the DoD IT Standards Registry (DISR), to meet FORCENet compliance and be Internet Protocol Version 6 (IPv6) ready in order to remain interoperable within the Joint Service Architecture. These efforts provide battle group tactical flexibility and responsiveness while maximizing TWS wartime capability.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA -7	PROGRAM ELEMENT NUMBER AND NAME 0204229N, TOMAHAWK & TMPC	PROJECT NUMBER AND NAME 0545, TOMAHAWK																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Tactical Tomahawk All-Up-Round (TACTOM AUR)</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 style="text-align: center;">5.130</td><td style="text-align: center;">8.535</td><td style="text-align: center;">8.284</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Tactical Tomahawk All-Up-Round (TACTOM AUR)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	5.130	8.535	8.284		RDT&E Articles Quantity				
Tactical Tomahawk All-Up-Round (TACTOM AUR)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	5.130	8.535	8.284																
RDT&E Articles Quantity																			
Continue hardware and software trade studies for Phase 2 ORD requirements. Incorporate Selective Availability Anti-Spoofing Module (SAASM) capability into the GPS and continue to develop Precision Terrain Aided Navigation (PTAN) capability. Completed demonstration prototype of Precision Terrain Aided Navigation (PTAN) capability to demonstrate real-time operation. Initiated PTAN advance technology risk reduction efforts to develop next generation PTAN prototypes and to integrate PTAN capability into the missile simulation labs. Completed real-time processing capability for PTAN scenes. Continue integration and development of a precision Radar Altimeter into the All-Up-Round (AUR).																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">TACTOM Weapons Control System (TTWCS)</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 style="text-align: center;">2.920</td><td style="text-align: center;">2.920</td><td style="text-align: center;">2.323</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					TACTOM Weapons Control System (TTWCS)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	2.920	2.920	2.323		RDT&E Articles Quantity				
TACTOM Weapons Control System (TTWCS)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	2.920	2.920	2.323																
RDT&E Articles Quantity																			
Initiate minimal Tactical Tomahawk Weapons Control System (TTWCS) viability development activities to reduce risks in the areas of overall TTWCS supportability, sustainment and interoperability with external interfaces. Begin to address key DoD/DoN mandates such as Internet Protocol (IP)v6, FORCEnet, Open Architecture and SAASM. Complete the development of TTWCS viability and enter the TECHEVAL/OPEVAL.																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">TACTOM Command and Control</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 style="text-align: center;">2.243</td><td style="text-align: center;">2.688</td><td style="text-align: center;">2.631</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					TACTOM Command and Control	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	2.243	2.688	2.631		RDT&E Articles Quantity				
TACTOM Command and Control	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	2.243	2.688	2.631																
RDT&E Articles Quantity																			
Continue development and incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk. Continue development of TTWS Integration Training Architecture. Continue development of related training and installation materials. Continue imagery upgrades to Tomahawk Command and Control System. Continue Test & Evaluation support for Tomahawk Command and Control Systems.																			

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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-7	0204229N, TOMAHAWK & TMPC	0545, TOMAHAWK		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
WPN - BLI 210100 TOMAHAWK	475.826	280.267	283,055	
OPN - BLI 525300 TOMAHAWK SUP EQUIP	54.711	55.312	88.475	
OPN SPARES - BLI 902010 INITIAL SPARES	0.759	0.167	0.554	
OPN SPARES - BLI 902090 VEND DIR SPARES	0.420	0.040	0.573	
D. ACQUISITION STRATEGY:				
(U) In 1998, the Tomahawk Baseline Improvement Program (TBIP) transitioned to the Tactical Tomahawk (Block IV) Program. This program is outlined in the Class Justification and Approval (CJ&A No. AIR-22448) signed by the Under Secretary of the Navy on 29 May 1998. The acquisition strategy was to transition the TBIP to Tactical Tomahawk. The Tactical Tomahawk development program was a cost-sharing contract between the Government and the Contractor to add capability to the missile. A multi-year full-rate production contract was awarded in August 2004 for FY 2004-2008 production. Torpedo Tube Launch (TTL) met capability IOC in FY 2008. TTL missiles were procured beginning in FY08 within the current missile production budget as required to meet Fleet load-out requirements. Other spiral development capabilities (PTAN, Multi-effects Warhead, Anti Surface Warfare (ASUW) will be introduced after successful qualification and testing. Continue SAASM				

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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-7			0204229N, TOMAHAWK & TMPC			0545, TOMAHAWK						
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												
PHD - Weapons Control System	C-CPAF	LM Valley Forge	91.964									
Award Fees - WCS			4.996									
PHD - Weapons Control System	RX	NAVSEA, WNY DC	0.875									
PHD-Mission Plan Systems TC2S	SS/CPFF	COMGLOBAL SYS, San Jose C	36.714	0.403	12/08	1.000	12/09					
PHD-Mission Plan Systems TC2S	VARIOUS	VARIOUS	7.674									
Primary Hardware Devel - AUR	C/CPFF	RAYTHEON CO Tucson, AZ	217.782	0.500	06/09	1.487	03/10					
Primary Hardware Devel - PTAN	C/CPFF	RAYTHEON CO Tucson, AZ	2.644									
Primary Hardware Devel - SAASM	C/CPFF	RAYTHEON CO Tucson, AZ	6.725									
Primary Hardware Devel- TTL	C/CPAF	RAYTHEON CO Tucson, AZ	11.886									
Primary H/W Devel - TTL Award Fee	C/CPAF	RAYTHEON CO Tucson, AZ	0.819									
Primary Hardware Devel - TTPC	C/CPFF	RAYTHEON CO Tucson, AZ	3.189									
Primary Hardware Devel - ASUW	C/CPFF	RAYTHEON CO Tucson, AZ	0.206									
Primary Hardware Devel - WCS	C/CPFF	RAYTHEON CO Tucson, AZ	0.828									
Ship Integr - Launch Integr	RX	NAVSEA, WNY, DC	29.743	1.887	03/09							
Ship Interation - Award Fee	C/CPFF	NAVSEA, WNY, DC	0.752									
Systems Engineering	RX	JHU/APL, COLUMBIA, MD	4.831									
Systems Engineering - AUR	RX	JHU/APL, COLUMBIA, MD	27.374	1.862	03/09	1.687	02/10					
Systems Engineering - AUR	C/FP	Boeing, St Louis, MO	3.000									
Systems Engineering - PTAN	RX	JHU/APL, COLUMBIA, MD	2.691									
Systems Engineering - SAASM	C/CPFF	VARIOUS	0.972			0.260	01/10					
System Engineering - AUR	C/FP	RAYTHEON CO Tucson, AZ	14.237									
System Engineering - TTL	C/FP	RAYTHEON CO Tucson, AZ	0.496									
System Engineering - TTL	SS/CPFF	JHU/APL, COLUMBIA, MD	0.912									
1974 thru TBIP Costs in 1996	VARIOUS	VARIOUS	2,176.447									
Subtotal Product Development			2,647.757	4.652		4.434						
Remarks:												

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

R-1 Line Item No 168
Page 6 of 11

Exhibit R-4a, Schedule Detail

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-7			0204229N, TOMAHAWK & TMPC			0545, TOMAHAWK						
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 Sup - Weapons Control Sys	WX	NUWC, NEWPORT RI	20.966									
Development Support	SS/CPFF	SAIC, SAN DIEGO, CA	9.700									
Development Support	WX	NSWC Dahlgren	0.214	0.153	Various	0.553	Various					
Development Support - AUR SAASM	C/CPFF	SAIC, SAN DIEGO, CA	0.260	0.318	12/08	0.250	12/09					
Development Support - AUR	SS/CPFF	SAIC, SAN DIEGO, CA	1.112	0.888	12/08	1.388	12/09					
Development Support - AUR	WX	VARIOUS	0.486	0.686	Various	0.703	Various					
Development Support - AUR	WX	NAWCWD CHINA LAKE, CA	64.334	1.376	Various	1.705	Various					
Development Support - PTAN	VARIOUS	VARIOUS	0.020									
Development Support - PTAN	C/CPFF	HONEWELL, MINNEAPOLIS	3.924									
Development Support - PTAN	WX	NAWCWD CHINA LAKE, CA	0.606									
Development Support - SAASM	WX	VARIOUS	2.114									
Development Support - TTL	SS/CPFF	SAIC, SAN DIEGO, CA	0.576									
Development Support - TTL	WX	NUWC, NEWPORT RI	10.521									
Development Support - TTL	WX	VARIOUS	5.503									
Government Eng Sup - SAASM	WX	STRATEGIC SYS PR, DC	3.383	0.865	01/09							
Government Eng Sup - SAASM	WX	VARIOUS	0.061									
Soft Dev-Mission Plan Sys TC2S	RX	RAYTHEON CO, TUCSON	5.100									
Soft Dev-Mission Plan Sys TC2S	MIPR	HQ SEC OF AF-FMB, DC	0.951									
Soft Dev-Mission Plan Sys TC2S	RX	JHU/APL, COLUMBIA MD	18.996	0.250	12/08	0.150	12/09					
Soft Dev-Mission Plan Sys TC2S	MIPR	LM, VALLEY FORGE PA	7.104	0.945	01/09	1.027	01/10					
Soft Dev-Mission Plan Sys TC2S	RX	NAVY SYS MGT ACT, VA	5.821	1.090	Various	0.455	Various					
Soft Dev-Mission Plan Sys TC2S	RX	NAVY SYS MGT ACT, VA	4.326									
Soft Dev-Mission Plan Sys TC2S	RX	SAIC, SAN DIEGO, CA	14.307									
Soft Dev -Weapons Control Sys	WX	NSWC Dahlgren	31.325									
Soft Dev -Weapons Control Sys	C/CPFF	LM, VALLEY FORGE PA	99.735	2.920	02/09	2.323	02/10					
Soft Dev -Weapons Control Sys	RX	VARIOUS	1.438									
Soft Dev-PTAN	RX	JHU/APL, COLUMBIA MD	1.702									
Subtotal Support			314.585	9.491		8.554						
Remarks:												

R-1 SHOPPING LIST - Item No. 168

R-1 Line Item No 168

UNCLASSIFIED

Page 7 of 11

Exhibit R-4a, Schedule Detail

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0240229N, TOMAHAWK & TMPC			0545, TOMAHAWK						
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	SS/CPFF	RAYTHEON CO, TUCSON	42.883									
Developmental Test & Evaluation	RX	JHU/APL, COLUMBIA, MD	1.730									
Developmental Test & Evaluation	WX	VARIOUS	37.593			0.250	Various					
Developmental Test & Evaluation	WX	VARIOUS	0.275									
Developmental Test & Evaluation	WX	NUWC, NEWPORT RI	0.681									
Subtotal T&E			83.162	0.000		0.250						
Remarks:												
Contractor Engineering Support	SS/CPFF	SAIC, SAN DIEGO, CA	0.401									
Government Engineering Support												
Program Management Support												
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.401	0.000		0.000		0.000		0.000		
Remarks:												
Total Cost			3,045.905	14.143		13.238		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:																								
EXHIBIT R4, Schedule Profile											DATE:			May 2009										
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME													
RDT&E,N / BA-7					0204229N, TOMAHAWK & TMPC						0545, TOMAHAWK													
Fiscal Year	FY 2008				FY 2009				FY 2010															
	1	2	3	4	1	2	3	4	1	2	3	4												
Acquisition Milestones			★	TTL	IOC																			
Missile Integration								SAASM INTEGRATION																
Launcher Platform Integration								LAUNCHER PLATE																
TTWCS V5.4.0																								
P3I																								
TTWCS V5.3.6					☆	IOC																		
Test & Evaluation Milestones																								
TTWCS V5.3.6/TC2S4.2																								
Production Milestones Deliveries																								
Deliveries - FRP 2 - 298																								
Deliveries - FRP 3 - 408																								
Deliveries - FRP 4 thru FRP 10					FRP 4 355			FRP 5 496																

UNCLASSIFIED

UNCLASSIFIED

R-1 Line Item No 168
Page 10 of 11

Exhibit R-4a, Schedule Detail

UNCLASSIFIED

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 7					0204229N, TOMAHAWK & TMPC					9999 CONGRESSIONAL ADD								
COST (\$ in Millions)										FY 2008		FY 2009		FY 2010									
Project Cost										4.340		3.989											
RDT&E Articles Qty					Not Applicable																		

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

Congressional Adds.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

0545A PTAN	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	3.085	1.595		
RDT&E Articles Qty				

Initiate PTAN Advance technology risk reduction effort to develop next generation PTAN prototypes and to integrate PTAN capability into the missile simulation labs.

9C53A Tomahawk Weapons Control System	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	1.255			
RDT&E Articles Qty				

Initiate alternative studies concerning loss of C4I Interoperability (Command, Control, Communication and Computer Interoperability), SSN TTWCS capability, hardware performance, obsolescence and supportability issues.

9E14A Tomahawk Cost Reduction Initiative	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost		1.596		
RDT&E Articles Qty				

The Tactical Tomahawk congressional funding supporting the Cost Reduction Initiative (CRI) provides for development and implementation of an affordability process to identify, investigate, plan and execute viable cost reduction initiatives (CRIs) for the Tomahawk F415 engine.

9E15 Tomahawk Low-Cost Image-Based Navigation and Precision Targeting	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost		.798		
RDT&E Articles Qty				

Image-Based Navigation funds provide analysis to assess reliability and performance of Image Navigation Reference Products in the TC2S.

UNCLASSIFIED

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		R-1 ITEM NOMENCLATURE 0204311N/INTEGRATED SURVEILLANCE SYSTEM	
COST (In Millions)	FY 2008	FY 2009	FY 2010
Total PE Cost	30.743	28.677	24.835
0766 / IUSS Detect/Classif System	27.166	20.499	24.835
9999 / Congressional Adds	3.577	8.178	0.000

A. MISSION DESCRIPTION:
This Program Element (P.E.) comprises two projects - 0766 and 9999. Project 0766 provides for Integrated Undersea Surveillance Systems (IUSS) Research and Development Projects under the Maritime Surveillance Systems (MSS) Program Office (PEO LMW PMS 485). IUSS provides the Navy with its primary means of submarine detection both nuclear and diesel. A portion of project 0766 (FSS) is classified, with details available at a higher classification level. Project 9999 consists of three Congressional Adds. Projects 9C54A (Autonomous Anti-Submarine Vertical Beam Array), 9C55A (Distributed Maritime Surveillance System) and 9C56A (Low-Cost, Expendable, Fiber Optic Sensor Array) are all FY09 Congressional Plus-Ups. Project 9C54A provides funding to investigate incorporation of vertical beam arrays into existing fixed surveillance system hardware designs to provide a volumetric array capability for increased detection and system performance. Project 9C55A provides funding for an anchored buoy-based underwater acoustic system. Project 9C56A provides funding for continued development of a low-cost, expendable, ultra-thin fiber-optic array with applications to littoral, high fishing density OPAREAs.

U) JUSTIFICATION FOR BUDGET ACTIVITY:
The IUSS Research and Development project (0766) funds SURTASS Passive and SURTASS Low Frequency Active (LFA) developments. SURTASS provides the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS LFA provides an active adjunct capability for IUSS passive and tactical sensors to assist in countering the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow quiet threats in harsh littoral waters.

(U) In order to continue with reductions in life cycle costs and continue with system-wide consolidation, a short-term goal is to develop a common IUSS processor based on NAVSEA's Acoustic Rapid COTS Insertion (ARCI) program. The IUSS Integrated Common Processor (ICP) will have the capability to process and display data from all fixed and mobile underwater systems. The IUSS ICP will be used for all new system installations and replace the legacy systems as they reach end of life and require upgrading. Additionally, SURTASS is consolidating on the TB-29A Twin-line array, a variant of the Submarine TB-29A Long line array. This will reduce the number of array variants employed by SURTASS from 3 to 1, and will enable development and logistics cost savings by leveraging off the submarine TB-29A program.

(U) Future efforts will be focused on upgrading the LFA capability to the ICP baseline, support bi-static processing utilizing the TL-29A, support activation of fixed sensors, develop smaller, lighter weight acoustic sources for augmentation of small SWATH platforms (under the Compact LFA program), and for replacement of aging LFA sources. Together these efforts support an Active Improvement Program within IUSS.

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0204311N/INTEGRATED SURVEILLANCE SYSTEM			
B. PROGRAM CHANGE SUMMARY:							
Funding:				FY 2008	FY 2009	FY 2010	
FY09 President's Budget				31.138	20.565	25.180	
FY10 President's Budget				30.743	28.677	24.835	
Total Adjustments				-0.395	8.112	-0.345	
(U) Summary of Adjustments							
Congressional Rescissions				0.000	0.000	0.000	
Congressional Adjustments					8.200	0.000	
Program Adjustments				-0.395	-0.010	0.000	
Rate/Misc Adjustments				0.000	-0.078	-0.345	
Total				-0.395	8.112	-0.345	
C. OTHER PROGRAM FUNDING SUMMARY:							
Line Item No. and Name	FY 2008	FY 2009	FY 2010				
OPN 2237	3.760	29.096	24.108				
D. ACQUISITION STRATEGY:							
FY 2008: Engineering Milestones: ICP CLFA Update (9/08); T&E Milestones: CLFA/TL-29/ICP DT							
FY 2009: Engineering Milestones: ICP LFA Variant (9/09); T&E Milestones: CLFA/TL-29A/ICP DT and CLFA/TL-29A/ICP OT&E ; Contract Milestones: CLFA Production							
FY 2010: Engineering Milestones: ICP Bi-Static Variant (9/10); T&E Milestones: CLFA/TL-29A/ICP OT&E; LFA/TL-29A/ICP FOT&E							
E. MAJOR PERFORMERS:							
PERFORMER	LOCATION	DESCRIPTION OF WORK	AWARD DATE				
SPAWAR SYSTEMS CENTER	San Diego CA	Technical Direction Agent for LFA/CLFA	Annually				
NAVFAC ENG SERV CENTER	Port Hueneme CA	Technical Direction Agent for Handling Systems	Annually				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM		PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif System
COST (In Millions)	FY 2008	FY 2009	FY 2010
Project Cost	27.166	20.499	24.835
RDT&E Articles Qty	0	0	0
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: A. (U) This project includes efforts for both FSS* and SURTASS. The SURTASS project comprises the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS also provides the undersea surveillance necessary to support regional conflicts and sea-lane protection. SURTASS has experienced recent passive and active success against diesel submarines operating in shallow water. SURTASS is leveraging existing developments and reducing costs by using Non-Developmental Items and commercial hardware; supporting common Navy Undersea Warfare processing and towed array developments; and increasing operator efficiency through computer aided detection and classification processing. SURTASS development efforts include: LFA improvements, common IUSS processing, twin-line array development and processing, improved detection and classification/passive automation to counter quieter threats; additional signal processing and bi-static active capability; integrated active and passive operations; improved Battle Group support; and improved information processing. (U) LFA provides an active adjunct capability for IUSS passive and tactical sensors to counter the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow quiet threats in harsh littoral waters. Improvements include TL-29A/LFA integration enhancements; advanced waveforms for littoral/shallow water operations including Doppler sensitive waveforms; and processing algorithms to reduce clutter and reverberation false alarms in shallow water. The LFA task includes development and testing of a compact LFA transmit source array for SWATH-P ships, and upgrade of LFA processing capability into the IUSS Integrated Common Processing architecture. The Integrated Common Processor (ICP) is a derivative of the NAVSEA Submarine Acoustic Rapid COTS Insertion (ARCI) program, and is being augmented for IUSS requirements. Together, the LFA improvements, TL-29A, and the ICP support the SURTASS Active Improvement Program. (U) Functional improvements are delivered to the Fleet in software "Builds", while hardware improvements are delivered through the "Tech Insertion" (TI) process. Software builds are based upon the Advanced Processor Build (APB) process begun by the NAVSEA Submarine USW program. Each APB will introduce new capabilities into SURTASS systems including improved automation, normalizer techniques, adaptive beam forming, and display enhancements. SURTASS participates in the process by contributing algorithms for consideration, supplying peer group members for review of candidate algorithms, participating in test evolutions, and incorporating improved algorithms into operational systems. The "Tech Insertion" process, modelled after the NAVSEA Submarine USW hardware improvement program, delivers processing technology improvements to platforms on roughly a 4-year cycle. Hardware upgrades for active and passive arrays and communications systems will also be provided during "TI" upgrades, but not on a regular planned development cycle as for the processing upgrades. B. (U) PEO LMW is involved with the development and maintenance of various IUSS systems. These systems include FDS, FDS-C, SDS and SURTASS. The near-term goal is development			

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM	PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif System
of ICP, which will result in a a single IUSS processor baseline, with minor maintenance efforts continuing on fielded systems. The existing system architecture, signal processing, contact management, and reporting requirements will be evaluated as well as the requirements for future systems. The development of the ICP will take advantage of automation advancement, array technology improvements, and IUSS, submarine, and surface USW system commonality. Additionally, a long term goal is to activate all IUSS sensors as part of a coordinated Active Improvement Program. *A portion of project 0766 (FSS) is classified, with details available at a higher classification level.		

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM	PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif System	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
N74 ASW Study	0.700	0.700	0.689
RDT&E Articles Quantity	0	0	0
FY08: N74 ASW Study- Continue conducting trade-off and mission studies to explore networked ASW system concepts, investment alternatives and development of a community-wide strategy for common performance models.			
FY09: N74 ASW Study- Continue conducting trade-off and mission studies to explore networked ASW system concepts, investment alternatives and development of a community-wide strategy for common performance models.			
FY10: N74 ASW Study- Continue conducting trade-off and mission studies to explore networked ASW system concepts, investment alternatives and development of a community-wide strategy for common performance models.			
	FY 2008	FY 2009	FY 2010
Classified Effort	11.956	6.575	5.980
RDT&E Articles Quantity	0	0	0
A portion of project 0766 (FSS) is classified, with details available at higher classification level.			
	FY 2008	FY 2009	FY 2010
Compact Low Frequency Active	5.385	6.595	2.309
RDT&E Articles Quantity	0	0	0
FY 08: Install EDM and begin at-sea development testing and begin incorporation final design changes.			
FY 09: Complete incorporation and at-sea test of final design changes in support of CLFA production program. Continue DT for Active Improvement Program (CLFA/TL-29A/IUSS Common Processor). Conduct OT for CLFA/TL-29A/IUSS Common Processor.			
FY 10: Complete OT for CLFA/TL-29A/IUSS Common Processor. Development of product improvements and corrections recommended or required from DT/OT. Conduct FOT&E for LFA/TL-29A/IUSS Common Processor.			
	FY 2008	FY 2009	FY 2010
TB-29A/Twin-Line	2.000	2.000	1.970
RDT&E Articles Quantity	0	0	0
FY 08: Development of connectionless array technologies and true fiber-optic arrays. Investigate Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Develop and test additional fishing net mitigation approaches.			
FY 09: Continue development of connectionless array technologies and true fiber-optic arrays. Continue efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development and test of fishing and mitigation approaches.			
FY 10: Development of connectionless array technologies and true fiber-optic arrays. Investigate Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development and test of additional fishing net mitigation approaches.			

CLASSIFICATION:		UNCLASSIFIED			
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM		PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif System	
		FY 2008	FY 2009	FY 2010	
SURTASS Active Improvement Program		1.500	0.000	0.000	
RDT&E Articles Quantity		0	0	0	
FY08: Begin developmental testing for Active Improvement Program (CLFA/TL-29A/IUSS Common Processor).					
		FY 2008	FY 2009	FY 2010	
Integrated Common Processor (ICP)		5.625	4.629	13.887	
RDT&E Articles Quantity		0	0	0	
FY 08: Complete development of SURTASS active processing capability. Continue development of new automation algorithms and techniques for addressing multi-array, high beam count requirements. Begin development of bi-static receive processing for SURTASS. Begin development of littoral LFA improvements.					
FY 09: Continue development of new automation algorithms and techniques for addressing multi-array, high beam count requirements. Continue development of Littoral LFA and bi-static receive improvements.					
FY 10: Begin development of Active Receive processing capability for fixed sensors. Begin tech refresh development in coordination with the Submarine Acoustic Rapid COTS Insertion (ARCI) Program Advanced Processing Build (APB) tech refresh. Continue development of new automation algorithms and techniques for addressing multi-array, high beam count requirements. Continue development of Littoral LFA and bi-static receive improvements.					

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM				PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif 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
IUSS COMMON ARCHITECTURE	CPFF	GDAIS/LM/ARL	53.083	2.313	NOV-08	9.587	NOV-09
ACTIVE IMPROVEMENT/CLFA/LFA	CPFF/AF	BAE / GDAIS / NFESC/VARIOUS	117.224	2.352	NOV-08	0.909	NOV-09
N74 ASW STUDY	WR/PD	NUWC / APL	6.654	0.700	NOV-08	0.689	NOV-09
ARRAY IMPROVEMENTS	CPFF/WR	APL / SSC / VARIOUS	5.854	1.800	NOV-08	1.770	NOV-09
Subtotal Product Development			182.815	7.165		12.955	
Remarks:							
IUSS COMMON ARCHITECTURE	WR	VARIOUS	2.100	0.600	NOV-08	1.000	NOV-09
ACTIVE IMPROVEMENTS/CLFA/LFA	CPFF	NGC/VARIOUS	7.120	0.200	NOV-08	0.200	NOV-09
Subtotal Support Costs			9.220	0.800		1.200	
Remarks:							
IUSS COMMON ARCHITECTURE	VAR / WR	VARIOUS	3.337	0.500	NOV-08	2.500	NOV-09
ACTIVE IMPROVEMENTS/CLFA/LFA	VAR / WR	VARIOUS	19.009	4.859	NOV-08	1.000	NOV-09
ARRAY IMPROVEMENTS	VAR / WR	VARIOUS	2.390	0.200	NOV-08	0.200	NOV-09
Subtotal Test and Evaluation			24.736	5.559		3.700	
Remarks:							
IUSS COMMON ARCHITECTURE	VAR / WR	VARIOUS	2.837	0.000	NOV-08	0.800	NOV-09
ACTIVE IMPROVEMENTS/CLFA/LFA	VAR / WR	VARIOUS	15.119	0.400	NOV-08	0.200	NOV-09
Subtotal Management Services			17.956	0.400		1.000	
Remarks:							
Total Cost			234.727	13.924		18.855	

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 7	0204311N/INTEGRATED SURVEILLANCE SYSTEM	0766//USS Detect/Classif System	

Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones																																
Inactive ACAT II Status Eff 7/15/02																																
Test & Evaluation Milestones																																
TB-29A/Twinline																																
CLFA / TL-29A / ICP DT																																
CLFA / TL-29A / ICP OT&E																																
LFA/TL-29A/ICP FOT&E																																
CLFA CERTIFICATION TESTS																																
Production Milestones																																
Integrated Common Processor																																
CLFA																																
ICP Software Development / Deliveries																																

* Not required for Budget Activities 1, 2, 3, and 6
FOT & E: Follow-on Test and Evaluation

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-4a, SCHEDULE DETAIL				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM		PROJECT NUMBER AND NAME 0766/IUSS Detect/Classif System
Schedule Profile		FY 2008	FY 2009	FY 2010
TB-29A TL SYSTEM INSTALLATION / TEST (T-23)			4Q	1Q
FOT & E (TB29A TL / ICP / LFA)				2Q-3Q
CLFA DEVELOPMENT TEST SHAKEDOWN		4Q	1Q	
CLFA DEVELOPMENT EVALUATION			2Q-4Q	
CLFA PRODUCTION SYSTEMS			3Q-4Q	1Q - 4Q
ICP SOFTWARE DEVELOPMENT		1Q-4Q	1Q-4Q	1Q - 4Q
ICP SOFTWARE DELIVERIES		1Q	2Q	1Q & 4Q

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N/INTEGRATED SURVEILLANCE SYSTEM	PROJECT NUMBER AND NAME 9999/Congressional Adds	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9C56A Low-Cost, Expendable, Fiber Optic Sensor Array	0.994	4.986	0.000
RDT&E Articles Quantity	0	0	0
Funding for continued development of a low cost, expendable, ultra-thin fiber-optic array with applications to littoral, high fishing density OPAREAs.			
	FY 2008	FY 2009	FY 2010
9C55A Distributed Maritime Surveillance System	1.589	1.596	0.000
RDT&E Articles Quantity	0	0	0
Funding for anchored buoy-based underwater acoustic system.			
	FY 2008	FY 2009	FY 2010
9C54A Autonomous Anti-Sub Vertical Beam Array	0.994	1.596	0.000
RDT&E Articles Quantity	0	0	0
Funds will be used to investigate incorporation of vertical beam arrays into existing fixed surveillance system hardware designs to provide a ready volumetric array capability for increased decision and system performance.			

CLASSIFICATION:		UNCLASSIFIED																																														
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION				DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		R-1 ITEM NOMENCLATURE 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS																																														
COST (In Millions)	FY 2008	FY 2009	FY 2010																																													
Total PE Cost	1.789	2.316	2.324																																													
2231 / LCU Replacement and DMFD	1.789	2.316	2.324																																													
A. MISSION DESCRIPTION: TECHNOLOGY TRANSITION: Provides for research efforts on LCAC Future Naval Capabilities (FNC) to transfer technologies to functional uses on current LCACs. Current S&T initiatives include the following: sustainability/readiness/performance analysis; enhanced LCAC-M cost model; friction stir welding equipment evaluation; LCAC communications improvements; analysis of electrical systems during cold weather operations; LCAC model hydrodynamic testing; LCAC structural loads analysis; development and qualification of full authority digital engine controller for LCAC engines, and vibration reduction analysis.																																																
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>1.805</td> <td>2.325</td> <td>2.357</td> </tr> <tr> <td>FY10 President's Budget</td> <td>1.789</td> <td>2.316</td> <td>2.324</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.016</td> <td>-0.009</td> <td>-0.033</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>-0.006</td> <td>0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td>-0.014</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Program Adjustments</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>-0.002</td> <td>-0.003</td> <td>-0.033</td> </tr> <tr> <td>Total</td> <td>-0.016</td> <td>-0.009</td> <td>-0.033</td> </tr> </table>					Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	1.805	2.325	2.357	FY10 President's Budget	1.789	2.316	2.324	Total Adjustments	-0.016	-0.009	-0.033	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-0.006	0.000	SBIR/STTR/FTT Assessment	-0.014	0.000	0.000	Program Adjustments	0.000	0.000	0.000	Rate/Misc Adjustments	-0.002	-0.003	-0.033	Total	-0.016	-0.009	-0.033
Funding:	FY 2008	FY 2009	FY 2010																																													
FY09 President's Budget	1.805	2.325	2.357																																													
FY10 President's Budget	1.789	2.316	2.324																																													
Total Adjustments	-0.016	-0.009	-0.033																																													
(U) Summary of Adjustments																																																
Congressional Rescissions	0.000	0.000	0.000																																													
Congressional Adjustments	0.000	-0.006	0.000																																													
SBIR/STTR/FTT Assessment	-0.014	0.000	0.000																																													
Program Adjustments	0.000	0.000	0.000																																													
Rate/Misc Adjustments	-0.002	-0.003	-0.033																																													
Total	-0.016	-0.009	-0.033																																													

CLASSIFICATION:	UNCLASSIFIED																						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009																				
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7		R-1 ITEM NOMENCLATURE 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS																					
C. OTHER PROGRAM FUNDING SUMMARY: TECHNOLOGY TRANSITION: Provides for research efforts on LCAC Future Naval Capabilities (FNC) to transfer technologies to functional uses on current LCACs. Current S&T initiatives include the following: sustainability/readiness/performance analysis; enhanced LCAC-M cost model; friction stir welding equipment evaluation; LCAC communications improvements; analysis of electrical systems during cold weather operations; LCAC model hydrodynamic testing; LCAC structural loads analysis; development and qualification of full authority digital engine controller for LCAC engines, and vibration reduction analysis. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Line Item No. and Name</th> <th style="text-align: center;">FY 2008</th> <th style="text-align: center;">FY 2009</th> <th style="text-align: center;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>OPN Line 0970 Amphibious Tactical Support Units</td> <td style="text-align: center;">0.065</td> <td style="text-align: center;">0.173</td> <td style="text-align: center;">6.642</td> </tr> <tr> <td>SCN Line 5139 LCAC SLEP</td> <td style="text-align: center;">97.830</td> <td style="text-align: center;">110.587</td> <td style="text-align: center;">63.857</td> </tr> <tr> <td>OPN Line 0981 HM&E < 5,000 (Material)</td> <td style="text-align: center;">6.255</td> <td style="text-align: center;">6.413</td> <td style="text-align: center;">5.105</td> </tr> <tr> <td>OPN Line 0981 HM&E < 5,000 (Install)</td> <td style="text-align: center;">10.000</td> <td style="text-align: center;">13.891</td> <td style="text-align: center;">14.409</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: TECHNOLOGY TRANSFER - RDT&E efforts commenced in FY06. Multiple contracts and Field Activities will be involved to complete the various projects.				Line Item No. and Name	FY 2008	FY 2009	FY 2010	OPN Line 0970 Amphibious Tactical Support Units	0.065	0.173	6.642	SCN Line 5139 LCAC SLEP	97.830	110.587	63.857	OPN Line 0981 HM&E < 5,000 (Material)	6.255	6.413	5.105	OPN Line 0981 HM&E < 5,000 (Install)	10.000	13.891	14.409
Line Item No. and Name	FY 2008	FY 2009	FY 2010																				
OPN Line 0970 Amphibious Tactical Support Units	0.065	0.173	6.642																				
SCN Line 5139 LCAC SLEP	97.830	110.587	63.857																				
OPN Line 0981 HM&E < 5,000 (Material)	6.255	6.413	5.105																				
OPN Line 0981 HM&E < 5,000 (Install)	10.000	13.891	14.409																				

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS			PROJECT NUMBER AND NAME 2231/LCU Replacement and DMFD
COST (In Millions)	FY 2008	FY 2009	FY 2010	
Project Cost	1.789	2.316	2.324	
RD T&E Articles Qty	0	0	0	
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: TECHNOLOGY TRANSITION: Provides for research efforts on LCAC Future Naval Capabilities (FNC) to transfer technologies to functional uses on current LCACs. Current S&T initiatives include the following: sustainability/readiness/performance analysis; enhanced LCAC-M cost model; friction stir welding equipment evaluation; LCAC communications improvements; analysis of electrical systems during cold weather operations; LCAC model hydrodynamic testing; LCAC structural loads analysis; development and qualification of full authority digital engine controller for LCAC engines, and vibration reduction analysis.				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS	PROJECT NUMBER AND NAME 2231/LCU Replacement and DMFD	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.789	2.316	2.324
RD T&E Articles Quantity	0	0	0
TECHNOLOGY TRANSITION: Provides for research efforts on LCAC Future Naval Capabilities (FNC) to transfer technologies to functional uses on current LCACs. Current S&T initiatives include the following: sustainability/readiness/performance analysis; enhanced LCAC-M cost model; friction stir welding equipment evaluation; LCAC communications improvements; analysis of electrical systems during cold weather operations; LCAC model hydrodynamic testing; LCAC structural loads analysis; development and qualification of full authority digital engine controller for LCAC engines, and vibration reduction analysis.			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS			PROJECT NUMBER AND NAME 2231/LCU Replacement and DMFD					
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	WR/FFP	Various	1.730	1.030	MAY-09	1.029	JAN-10			
Systems Engineering	FFP	Various	1.162	0.190	MAY-09	0.195	JAN-10			
Subtotal Product Development			2.892	1.220		1.224				
Remarks:										
Development Support	WR	Various	0.878	0.368		0.368				
Subtotal Support Costs			0.878	0.368		0.368				
Remarks:										
Developmental T & E	WR	Various	0.277	0.114		0.115				
Operational T & E	WR	Various	0.155	0.068		0.069				
Test Assets	WR	Various	0.300	0.114		0.113				
Subtotal Test and Evaluation			0.732	0.296		0.297				
Remarks:										
Contractor Engineering Support	FFP	Various	0.575	0.250	MAY-09	0.251	JAN-10			
Gov't Engineering Support	WR	Various	0.000	0.000		0.000				
Program Management Support	CPFF	Various	0.292	0.114	JAN-09	0.115	JAN-10			
Travel	TO's	NAVSEA	0.139	0.068		0.069				
Subtotal Management Services			1.006	0.432		0.435				
Remarks:										
Total Cost			5.508	2.316		2.324				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS	PROJECT NUMBER AND NAME 2231/LCU Replacement and DMFD

Fiscal Year	2008				2009				2010			
Acq. Milestones	1	2	3	4	1	2	3	4	1	2	3	4
LCAC Science & Technology Initiatives												

CLASSIFICATION:		UNCLASSIFIED			
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204413N/AMPHIBIOUS TACTICAL SUPPORT UNITS		PROJECT NUMBER AND NAME 2231/LCU Replacement and DMFD	
Schedule Profile		FY 2008	FY 2009	FY 2010	
LCAC S & T Initiatives		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 7			R-1 ITEM NOMENCLATURE 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	14.824	27.505	49.293				
0604 / TRAINING RANGE & INSTR DEV (TRID)	1.304	3.818	3.833				
1427 / SURFACE TACTICAL TEAM TRAINER (STTT)	5.690	5.850	8.303				
2124 / AIR WARFARE TRAINING DEVELOPMENT	1.688	1.755	1.773				
3087 / CURRICULUM & TRAINER DEVELOPMENT	0.000	10.436	26.591				
3093 / TACTS/LATR REPLACEMENT	3.442	3.014	8.793				
9999 / CONGRESSIONAL ADDS	2.700	2.632	0.000				

A. MISSION DESCRIPTION:

0604 - The Training Range and Instrumentation Development Systems (TRIDS) program provides development of range systems including a range electronic warfare simulator, advanced weapons training systems, laser training systems, Tactical Aircrew Combat Training System (TACTS), Large Area Tracking Range (LATR), and Training Enabling Architecture (TENA) interoperability, combat training system improvements, and undersea warfare range technology (previously called shallow water range technology)

1427/3087/3087A - The Surface Tactical Team Trainer (STTT) develops Battle Force Tactical Training (BFTT) system capabilities and interfaces to provide realistic combat system coordinated Team, Unit, and collective Strike Group/Force level training events using Distributed Interactive Simulation (DIS) protocols. Curriculum and Trainer Development develops the Total Ship Training System (TSTS) as a Pre-Planned Product Improvement (P3I) to the BFTT system that facilitates evolving combat system interfaces, implements High Level Architecture (HLA) and common modeling for future interoperability and integrates advanced technology and open design required for future combat systems. The need for transforming training is documented within the Office of Force Transformation (OFT) Military Transformation Initiative, DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan (FRP), and Commander United States Fleet Forces Command (CUSFFC) Fleet Readiness Training Plan (FRTP). FY08 Congressional Add supports development of a voice command recognition and assessment capability to the Total Ship Training System (TSTS) Support System and completes preparation for demonstration in FY09.

2124 - The Air Warfare Training Development (AWTD) program provides technology development and risk mitigation for aviation training systems, including mission rehearsal simulation technologies and the Aviation Training Technology Integration Facility (ATTIF). The ATTIF provides for incremental development, prototype evaluation, and final fleet T&D prior to technology transition.

3093 - The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the TACTS and LATR systems. TCTS will also provide fleet deployable instrumentation for at sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a Non-Developmental Item (NDI) Pod system as NAS Key West is complete. The Program incorporates evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture, and a high capacity/long range

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		R-1 ITEM NOMENCLATURE 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	
secure datalink.			
9C57A - Undersea Warfare (USW) Training is essential to effective USW warfighting operations, i.e. the "Fight as you Train" principle. The Navy's Supportability Peer Review Process Work Group - SupWG, whose membership spans across the US Navy, National laboratories, and private industry representatives, develops common core Training elements in support of the US Navy's warfighting missions. The ultimate goal of the working group is to achieve theater-wide common, interoperable, and high fidelity USW training baselines for the shipboards, undersea, airborne, and shore-based USW communities.			
B. PROGRAM CHANGE SUMMARY:			
Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	9.620	28.017	22.149
FY10 President's Budget	14.824	27.505	49.293
Total Adjustments	5.204	-0.512	27.144
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	2.700	2.584	0.000
SBIR/STTR/FTT Assessment	-0.095	0.000	0.000
Program Adjustments	2.600	-3.068	27.136
Rate/Misc Adjustments	-0.001	-0.028	0.008
Total	5.204	-0.512	27.144
Schedule:			
TRIDS CHANGES:			
Added LATR block upgrades due to LATR service life extension.			
AWTD Changes:			
R2/R-2a/R4 - minor wording changes for better technical accuracy. The R-4 was updated to show:			
1. AWTD response to multiple platform requirements across the FYDP for Risk Mitigation, Software/Data Commonality, and Technology Transition (top row).			
Technical:			
N/A			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		R-1 ITEM NOMENCLATURE 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	
2. New common component technology transitions to programs such as Navy Aviation Simulations Master Plan (NASMP), MH-60R/S, E-2D, Unmanned Aerial System (UAS), and Multi-Mission Aircraft (MMA) (second row).			
3. Major project categories to be prototyped and tested in the ATTIF (third row).			
4. Major task performance areas are specifications, analyses, and government-owned software (GOTS). Intermediate milestones/activities from the previous schedule have been updated.			
ATTIF Modular/Open Products types Integ. Test & Prototypes	FROM: FY08 4Q	TO: FY08 1Q and 4Q.	Other milestones clearly shown in the
SOFTWARE & GOTS			
Instructor/Human Systems Integration workload reduction (I2WRT) tools.	No Changes		
TEST and EVALUATION MILESTONES			
Deployed SIMS (DMT/Sensor Capable)	FY10 4Q	FY10 1Q, 4Q	
TCTS CHANGES			
Acquisition Milestones Phase 5 MS B	FY09-10	FY10 1Q.	Should have shown as FY10 1Q only development and design schedule
Acquisition Phase			
Phase 1 NDI - Trans (GS/AS)	FY08-FY10 4Q	FY08 -FY10 4Q.	Reflects better definition of project plan
Phase 2 Internal Subsystem (IS)	FY08-FY10 4Q	FY08 FY10 4Q.	Reflects better definition of project plan
Phase 3 Rack-Mounted Subsystem	FY08-FY10Q	FY08-FY10 4Q.	Reflects better definition of project plan
Advanced Datalink Dev		Effort continues through FYDP	
Test and Evaluation Milestones			
Phase 2 internal Subsystem (IS)	FY07 DTB2-1, 2-2A	Completed	

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 0604/TRAINING RANGE & INSTR DEV (TRID)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.304	3.818	3.833				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops specialized instrumentations systems for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: electronic warfare simulators and associated subsystems, target control systems, Tactical Aircrew Combat Training System (TACTS), Large Area Tracking Range (LATR) improvements, Test and Training Enabling Architecture (TENA) interoperability, combat training systems improvements, underwater technology, ranges interoperability and information architecture, and assorted Advanced Weapons Training Systems (AWTS), such as Imaging Weapons Training Systems (IWTS), Remote Strafe Scoring System (RSSS), and weapon and countermeasure simulations for use with various range training systems.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 0604/TRAINING RANGE & INSTR DEV (TRID)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.845	3.325	3.833
RDT&E Articles Quantity	0	0	0
LATR: Designed, integrated and tested modules to eliminate obsolete components in the LATR Pod. Completed design, integration and test of LATR software 5.0 baseline upgrade. Completed design, integration, and test of participant instrumentation packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conducted and completed installation of the Ground System Rehost. Conducted and completed security testing and assessment for LATR system certification and accreditation for Ground System Rehost. Complete development, test and integration of software and hardware modifications to system test sets. Developed interface software using Test and Training Enabling Architecture (TENA) to increase Tactical Training Range systems interoperability with other services training instrumentation. Completed development of LATR rotary wing re-size and LATR Datalink emulator. Complete development, test and integration of LATR data translator. Complete follow-on obsolescence study to identify sub-projects required through FY10. Complete ground system and PIP refresh sub-project. Complete semi-annual system block upgrades.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.459	0.493	0.000
RDT&E Articles Quantity	0	0	0
TACTS: Developed additional training capabilities for the personal computer based Joint Display Subsystem (JDS) and the Electronic Warfare Processor (EW PROC). Enhanced capability for Advanced Systems Operator Console (ASOC), enhanced Radar Display Subsystem (RADS), and ancillary systems interfaces. Continued development and deployment of LINK 16 interface for TTR applications. Complete Semi-annual CCS Block upgrades.			
C. OTHER PROGRAM FUNDING SUMMARY: N/A			
D. ACQUISITION STRATEGY: The Training Range and Instrumentation Development (TRID) program is a non-ACAT program. The integrated program teams that develop new TRID capabilities include government and contractor engineering personnel.			
E. MAJOR PERFORMERS: Performer = Tybrin Corp Location = Ridgecrest, CA Description = Product Development FY 2008 Award Date = 11/07 FY 2009 Award Date = 11/08 FY 2010 Award Date = 11/09			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					PROJECT NUMBER AND NAME 0604/Training Range & Instr 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		Total Cost (\$000)	Target Value of Contract
Systems Engineering	Various	Various	88.047			0.000		0.000				
Systems Engineering	Various	NAWC-AD, PAX RIVER, MD	2.213			1.085	VAR	1.120				
Systems Engineering	Various	NAWC-WD, CHINA LAKE	1.267			1.282	VAR	0.950				
Systems Engineering	SS FFP	TYBRIN CORP. CA	0.275			1.150	NOV-08	1.370	NOV-09			
Systems Engineering	Various	NSWC CORONA	0.000			0.081	VAR	0.120	VAR			
Systems Engineering	Various	NAVAIR TSD ORLANDO	0.000			0.220	VAR	0.273	VAR			
Subtotal Product Development			91.802			3.818		3.833				
Remarks:												
Software Development	Various	Various	10.576			0.000		0.000				
Subtotal Support Costs			10.576			0.000		0.000				
Remarks:												
Developmental Test & Evaluation	Various	Various	5.299			0.000		0.000				
Subtotal Test and Evaluation			5.299			0.000		0.000				
Remarks:												
Program Management Support	Various	Various	2.513			0.000		0.000				
Subtotal Management Services			2.513			0.000		0.000				
Remarks:												
Total Cost			110.190			3.818		3.833				

[illegible]

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 0604/Training Range & Instr Dev			
Schedule Profile		FY 2008	FY 2009	FY 2010				
TACTS								
EW PROCESSOR								
- PDR								
- CDR		1Q						
- DEV		2Q-3Q						
- T&E		3Q						
- IOC		4Q						
- FOC		4Q						
Link 16 TACTS T &E		4Q	1Q					
RADS- SEMI ANNUAL BLK UPGRADES		1Q-4Q	1Q-4Q	1Q				
BLOCK 6.4 UPGRADE				1Q-4Q				
BLOCK 6.5 UPGRADE								
BLOCK 6.6 UPGRADE								
BLOCK 6.7 UPGRADE								
BLOCK 6.8 UPGRADE								
BLOCK 6.9 UPGRADE								
LATR RECERTIFICATION		1Q-2Q						
LATR RW RESIZE								
LATR R-3 EMULATOR								
BLOCK 5.1 UPGRADE								
BLOCK 6.0 UPGRADE								
BLOCK 6.3 UPGRADE			1Q-4Q					
- T&E		1Q, 2Q-3Q, 4Q	1Q					
- SEMI-ANNUAL BLK UPGRADES		1Q-4Q	1Q					
LATR								
LATR GPS UPGRADE								
LATR ADIU UPGRADE								
LATR LRWS REHOST								
- T&E		1Q, 3Q	1Q, 3Q	1Q				
- SEMI-ANNUAL BLK UPGRADES		1Q-4Q	1Q-4Q	1Q				

CLASSIFICATION:										UNCLASSIFIED																						
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7										PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT										PROJECT NUMBER AND NAME 0604/Training Range & Instr Dev												
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
LATR GPS UPGRADE LATR ADIU UPGRADE LATR LRWS REHOST																																
LATR RECERTIFICATION LATR RW RESIZE LATR R-3 EMULATOR																																
BLOCK 5.1 UPGRADE BLOCK 6.0 BLOCK 6.3																																
BLOCK 6.4 BLOCK 6.5 BLOCK 6.6 BLOCK 6.7 BLOCK 6.8 BLOCK 6.9																																

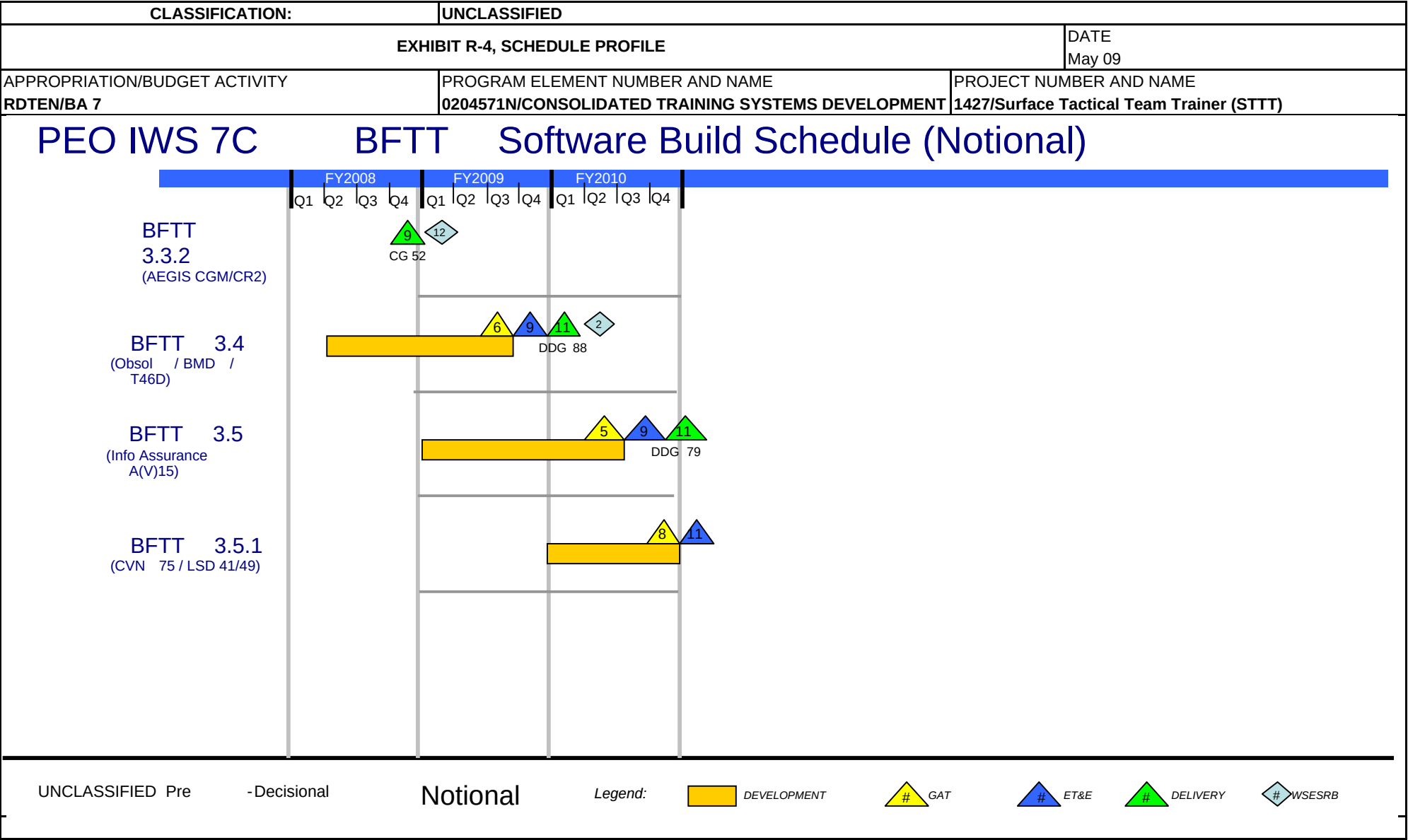
CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL (CONTINUATION)						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 0604/Training Range & Instr Dev			
Schedule Profile		FY 2008	FY 2009	FY 2010				
JDS UPGRADES								
- PDR		1Q-2Q, 3Q-4Q						
- CDR		2Q, 4Q						
- DEV		1Q, 2Q-3Q, 4Q	1Q					
- T&E		2Q-3Q, 4Q	1Q					
- SEMI-ANNUAL BLK UPGRADES		1Q-4Q	1Q					
ASOC UPGRADES								
- PDR		1Q-2Q, 3Q-4Q	1Q-2Q, 3Q-4Q					
- CDR		2Q, 4Q	2Q, 4Q					
- DEV		1Q, 2Q-3Q, 4Q	1Q, 2Q-3Q, 4Q	1Q				
- T&E		1Q, 2Q-3Q, 4Q	1Q, 2Q-3Q, 4Q	1Q				
- SEMI-ANNUAL BLK UPGRADES		1Q-4Q	1Q-4Q	1Q				
LINK 16 TACTS DEV								
- PDR								
- CDR								
- DEV		1Q-4Q						
- IOC			1Q					
- FOC		4Q						
RADS UPGRADES								
- PDR		1Q-2Q, 3Q-4Q	1Q-2Q, 3Q-4Q					
- CDR		2Q, 4Q	2Q, 4Q					
- DEV		1Q, 2Q-3Q, 4Q	1Q, 2Q-3Q, 4Q	1Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 1427/SURFACE TACTICAL TEAM TRAINER (STTT)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	5.690	5.850	8.303				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Battle Force Tactical Training (BFTT) Program provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) protocols. BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organizations, the Tactical Training Groups and C2F/C3F Fleet Synthetic Training Exercises (FSTs). BFTT provides a baseline capability/system that meets the Operational Requirements Document (ORD). BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organizations, the Tactical Training Groups and C2F/C3F Fleet Synthetic Training Exercises (FSTs). Without an operating BFTT system, the ship will be unable to complete system level testing impacting overall combat system operability testing.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 1427/SURFACE TACTICAL TEAM TRAINER (STTT)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	5.690	5.850	8.303
RDT&E Articles Quantity	0	0	0
K1427: Funds develop critical Battle Force Tactical Training (BFTT) System improvements, software/database corrections, and interface upgrades required to preserve training capability in response to evolving combat system capabilities (e.g. AEGIS Modernization) and to Fleet prioritized Training Systems capabilities in multiple mission areas including Anti-Submarine Warfare, Electronic Warfare, Air Warfare, Strike Warfare, Ballistic Missile Defense, Anti-Surface Warfare, and Amphibious Warfare. There are approximately sixty-one (61) discrete systems (radars, combat systems, navigation systems, etc.) that BFTT interfaces with which drive system upgrades. Without an operating BFTT system, the ship will be unable to complete system level testing impacting overall combat system operability testing. Efforts include architecture migration, model database improvement, scenario development, system/software/safety engineering, program management, security/safety assessment, documentation, software design, software development, Software Trouble Report (STR) corrections, and system integration, test and evaluation, logistics support and life cycle sustainment planning. FY08 Accomplishments included: Government Acceptance Testing (GAT) for BFTT Build 3.3.2 Phase II; software engineering efforts, architecture migration analysis, model database improvements, documentation development and logistics support for the BFTT Total Ship Training System capability; and testing and certification of the permanent BFTT upgrade to the Aegis Combat Trainer System (ACTS) Superset for legacy Aegis Baselines 5.3.9, 6.1.7, and 6.3.2. FY09 Planned Accomplishments include: Complete Build 3.3.2 certification to support the CG Modernization CS improvements; development of the BFTT Security Classification Guide (SCG) in accordance with SCG OPNAVINST S5513.1F and program protection plan; scope and define BFTT Build 3.4 development addressing Obsolescence issues, security network redesign, and incorporation of Ballistic Missile Defense (BMD) and Anti-Submarine Warfare (ASW) interface upgrades (conjunctive BFTT system improvements with BMD and ASW programs); and continue development and integration of new software capabilities and system interfaces to address emergent requirements. FY10 Planned Accomplishments include: Government Acceptance Testing (GAT), testing, certification, and safety assessment of BFTT Obsolescence Build (T46D); scope and define BFTT database improvements, architecture and content improvements to support LSD 41/49 Class mid-life combat system upgrade; and continue development and integration of new software capabilities and system interfaces to address emergent requirements.			

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT		PROJECT NUMBER AND NAME 1427/SURFACE TACTICAL TEAM TRAINER (STTT)	
C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
OPN 276200 (Surface (N86) BFTT/TSTS portion only)	20.332	21.008	25.256	66.596
D. ACQUISITION STRATEGY: The BFTT acquisition strategy for system development utilizes the spiral development model, as mandated by OSD. Incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible, is in accordance with the BFTT ACAT IVM Milestone III approved documentation.				
E. MAJOR PERFORMERS: CDSA Dam Neck NSWC PHD NSWC Dahlgren NUWC Newport				

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					PROJECT NUMBER AND NAME 1427/Surface Tactical Team Trainer (STTT)					
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 Development	WR/CPFF	NAVSEA 02/CDSA	2.515			0.475	FEB-09	3.246	FEB-10			
Systems Engineering	WR/REQN	CDSA/NSWC PHD/NUWC Newport/NSWC Dahlgren/NAVSEA 02	4.569			1.616	DEC-08	1.564	DEC-09			
Subtotal Product Development			7.084			2.091		4.810				
Remarks:												
Software Development	WR/REQN	CDSA/NUWC Newport/NAVSEA 02	6.571			2.262	FEB-09	1.997	FEB-10			
Subtotal Support Costs			6.571			2.262		1.997				
Remarks:												
Developmental Test & Evaluation	WR/REQN	NSWC PHD/CDSA/NAVSEA 02	1.036			0.897	DEC-08	0.604	DEC-09			
Subtotal Test and Evaluation			1.036			0.897		0.604				
Remarks:												
Government Engineering Support	WR/REQN	CDSA/NSWC Dahlgren	1.979			0.600	JAN-09	0.892	JAN-10			
Subtotal Management Services			1.979			0.600		0.892				
Remarks:												
Total Cost			16.670			5.850		8.303				



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 1427/Surface Tactical Team Trainer (STTT)			
Schedule Profile		FY 2008	FY 2009	FY 2010				
BFTT 3.3.2 DEVELOPMENT		1Q-4Q	Q1-2Q					
BFTT 3.3.2 GAT		2Q						
BFTT 3.4 DEVELOPMENT		2Q-4Q	1Q-4Q	1Q-3Q				
BFTT 3.3.2 ET&E		3Q						
BFTT 3.3.2 DELIVERY		4Q						
BFTT 3.3.2 CS WSERB			1Q					
BFTT 3.5 DEVELOPMENT			1Q-4Q	1Q-4Q				
BFTT 3.4 GAT			3Q					
BFTT 3.4 ET&E			4Q					
BFTT 3.4 DELIVERY				1Q				
BFTT 3.5.1 DEVELOPMENT				1Q-4Q				
BFTT 3.4 WSERB				2Q				
BFTT 3.5 GAT				2Q				
BFTT 3.5 ET&E				3Q				
BFTT 3.5.1 GAT				4Q				
BFTT 3.6 DEVELOPMENT								
BFTT 3.5 DELIVERY								
BFTT 3.5.1 ET&E								
BFTT 3.5 WSERB								
BFTT 3.5.1 WSERB								
BFTT 3.5.1 DELIVERY (CVN 75)								
BFTT 3.5.1 DELIVERY (LSD 42)								
BFTT 3.6 GAT								
BFTT 3.x DEVELOPMENT								
BFTT 3.6 ET&E								
BFTT 3.6 DELIVERY								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 2124/AIR WARFARE TRAINING DEVELOPMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.688	1.755	1.773				
RD T&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project transitions new training system technologies for use in Naval Aviation training. Products from this effort are directly tied to the Navy and Marine Corps Aviation Simulation Master Plans (NASMP) and (MCASMP) (\$479M), the MH-60R/S master plan, the F/A-18C-F Requirements Procurement Plan (RPP), the Multi-Mission Maritime Aircraft (MMA/P-8) program, and will support the development and design of future naval aviation training/mission rehearsal systems, (fixed and deployed). Tasks include: 1) Advanced training systems specification development to provide for common, modular, High Level Architecture (HLA)-compliant, high fidelity Distributed Mission Training (DMT) and mission rehearsal capabilities, ashore and afloat. Technologies to be developed and integrated include: intelligent semi-automated forces technology, Advanced Net-ready weapons simulation, AA/A-G, weather server, common Mission Training Station (MTS) technologies, advanced visual-sensor technology, high-resolution helmet mounted, and/or flat panel displays, 20-20 visual acuity image generation, Navy portable source initiative (NPSI) common dataset technology, common software/data/database reuse technologies, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, physics-based Infra Red (IR) stimulations; and final T&E within the Aviation Training Technology Integration Facility (ATTIF), NAWCAD, which is a man-in-the loop test bed for the integration of software, hardware, and operational equipment. This ATTIF capability provides a window to fleet aviators for critical comment, evaluation, and fine tuning of new, interoperable, and innovative technologies before final transition to the Fleet. Master Training Station (MTS), Debrief/AAR and intelligent training support tools for the virtual environment are focused on human performance enhancements for Fleet readiness and distributed missions, training, all levels. Metrics - These technology transitions will both lower total ownership costs (TOC) of the training systems, and life-cycle costs, including: visual system database re-use, reduced instructor manning profiles, software-based fidelity enhancements, and increased fleet readiness by enhancing overall system fidelity to the projected operating environments. Naval Aviation Simulator Master Plan (NASMP) / Marine Corps Simulator Master Plan (MCSMP) readiness improvements are conservatively forecast at 14-35% following associated technology upgrades to stand alone, or networked simulators. Individual technology transition investments have routinely exceeded 300+% financial Return on Investment (ROI). Technology readiness levels (TRLs), fleet readiness and financial metrics are used.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 2124/AIR WARFARE TRAINING DEVELOPMENT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.734	0.807	0.550
RDT&E Articles Quantity	0	0	0
HUMAN SYSTEMS INTEGRATION: (MTS, Intelligent SAF technologies) . Provide for modular Mission Training Station (MTS) designs to lower NASMP/Platform simulator life-cycle costs, integrate VOICE-Capable Semi-Automated-Forces (SAF) technologies, improve instructor effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate open architecture components for FA-18C-F, MH-60R/S, UAS, E-2C/D & USMC mission areas, intelligent instructor operator agents, TACAIR/MMA common GUI initiatives, common threat system formats and Next Generation Threat System (NGTS) connectivity, Joint SAF and MCSMP TEN compatibility, performance measurement, and after-action review (AAR)/debrief, thereby maximizing ROI for mission training station-related technology investments for multiple platforms.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.294	0.246	0.479
RDT&E Articles Quantity	0	0	0
SENSORS: Integrate common IR and Forward Looking Infra-Red (FLIR) sensor simulation) with Government, Off the Shelf Software (GOTS). Perform risk reduction, advanced displays T&E, integration and production of Sensor host for Navy Distributed Mission Training (DMT) and legacy devices. Demonstrate GOTS capability for cost-effective database materialization, and develop NAVAIR Portable Source Initiative (NPSI) specifications and processes for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Develop texture storage, sensor-environmental effects, NPSI material reference processes/standards, and automated applications for Real Time (RT) publishing, R/T shadows, R/T combat effects and very high-resolution visuals.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.331	0.404	0.408
RDT&E Articles Quantity	0	0	0
SYSTEMS ENGINEERING & INTEGRATION: Integrate and test open architecture Live Virtual Constructive (LVC) components for Navy DMT, deployable readiness and rehearsal systems (formerly E-2C/D crew stations only), intelligent synthetic forces, and tactical scenario-control. Demonstrate low-cost LVC capable DMT & DMRT configurations, and virtual range technologies, while maintaining or increasing fidelity. Analyze GOTS/COTS alternatives for network centric warfare connectivity in the simulated battle space, while reducing training system life cycle cost.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.329	0.298	0.336
RDT&E Articles Quantity	0	0	0
VISUALS: AWTD visual engineering provides for risk mitigation and next generation visual system prototype test and evaluation for both stand-alone and small footprint deployable devices. Supporting the NASMP and T/M/S programs, advanced visual system display configurations are assessed, and developed to include next generation helmet-mounted displays (HMDs), laser visual systems, and associated technologies.			

CLASSIFICATION:	UNCLASSIFIED																	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009															
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 2124/AIR WARFARE TRAINING DEVELOPMENT																
C. OTHER PROGRAM FUNDING SUMMARY: Related RDT&E PE 0604245N, Project #H2279, Sub-Project Title: USMC H-1 Upgrades <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%;">Total Cost</th> </tr> <tr> <td>Simulators</td> <td style="text-align: right;">75.329</td> <td style="text-align: right;">41.129</td> <td style="text-align: right;">41.073</td> <td style="text-align: right;">157.531</td> </tr> <tr> <td>Training (FAST)</td> <td style="text-align: right;">51.375</td> <td style="text-align: right;">51.922</td> <td style="text-align: right;">43.987</td> <td style="text-align: right;">147.284</td> </tr> </table>				Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost	Simulators	75.329	41.129	41.073	157.531	Training (FAST)	51.375	51.922	43.987	147.284
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost														
Simulators	75.329	41.129	41.073	157.531														
Training (FAST)	51.375	51.922	43.987	147.284														
D. ACQUISITION STRATEGY: Air Warfare Training Development (AWTD) is a 6.4 RDT&E joint technology transition program tied to the Naval Aviation Simulation Master Plan (NASMP) and the various platform simulation master plans with the purpose of transitioning advanced training and mission rehearsal technologies. AWTD provides risk mitigation, test and evaluation, and prototype development for stand-alone, distributed, and deployed training systems for the warfighter utilizing an IPT approach and a combination of reimbursable and direct cite Time and Materials (T&M) contracts.																		
E. MAJOR PERFORMERS: Performer = NAVAIR TSD Location = Orlando, FL Description = Systems Engineering FY 2008 Award Date = 11/08 FY 2009 Award Date = 2/09 FY 2010 Award Date = 2/10 Performer = NAWC-AD Location = Pax River, MD Description = Provide prototype T&E and NASMP integration FY 2008 Award Date = 2/08 FY 2009 Award Date = FY 2010 Award Date = Various																		

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					PROJECT NUMBER AND NAME 2124/Air Warfare Training					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY 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 (Adv Sensor)	Various	NAVAIR TSD ORLANDO	9.061			0.040	VAR	0.030	VAR			
Systems Engineering (ITST)	Various	NAVAIR TSD ORLANDO	3.523			1.021	FEB-09	0.919	FEB-10			
Systems Engineering (Visuals)	Various	NAWC-AD PAX RIVER	0.794			0.250	VAR	0.300	VAR			
Systems Engineering (Synthetic)	Various	NPS	0.000			0.059	VAR	0.100	VAR			
Subtotal Product Development			13.378			1.370		1.349				
Remarks:												
Software Development	VARIOUS	L3 COMMUNICATIONS	1.529			0.181	VAR	0.184	VAR			
Subtotal Support Costs			1.529			0.181		0.184				
Remarks:												
Developmental Test & Evaluation	Various		5.543			0.100	VAR	0.125	VAR			
Subtotal Test and Evaluation			5.543			0.100		0.125				
Remarks:												
Program Management Support	Various	VARIOUS	0.000			0.085	VAR	0.094	VAR			
Travel	Various	VARIOUS	0.443			0.019	VAR	0.021	VAR			
Subtotal Management Services			0.443			0.104		0.115				
Remarks:												
Total Cost			20.893			1.755		1.773				

CLASSIFICATION:										UNCLASSIFIED																						
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7										PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT										PROJECT NUMBER AND NAME 2124/Air Warfare Training Development												
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
AWTD Support of Naval Aviation Simula. Master Plan (NASMP)	RISK MITIGATION AND TECHNOLOGY TRANSITION TO NASMP, PLATFORMS, DISTRIBUTED AND DEPLOYED SYSTEMS, LVC																															
Acquisition 6.4 RDT&E Milestones	▲		Trans to NASMP				Trans to MMA			Trans to NASMP																						
ATTIF Modular/Open Products types	AARS Visuals		CDMTS Visuals		PM Visuals		Visuals and Models																									
ATTIF Integ. test & prototype	▲			△				△				△																				
SOFTWARE & GOTS	MH-60R						E2-D		MMA			LVC																				
Weapons Server and Network Technologies	▲																															
Instructor/Human Systems Integration and Intell. work-load reduction (I2WRT) support tools				AARS				NASMP				MMA																				
Test & Evaluation Milestones								Maritime Final																								
TACAIR/MARITIME Net Ready Technologies								△																								
			MH-60R/S CDMTS									AARS NASMP																				
CDMTS & AARS Spec/Demos			△									△																				
Sensor Stimulation (3)/ Sensor Fusion	FA-18 C-D		CRT Analysis				JHMCS WNV					NXT gen HMDS																				
	△		△				△					△																				
AARS w/ Automated Performance Measures (PM)			PM-Maritime					PM-MMA																								
				△					△																							
VISUAL Systems								CSM FLIR																								
Common Sensor Models/ Environments Advanced Sensor-capable																																
NPSI, collaborative sensor/ environment depiction for MR and DMRT																																
Deployed SIMS (DMT/Sensor Capable)				DMRT FEA TACAIR					Maritime			DMRT Specs																				
					△					△			△																			

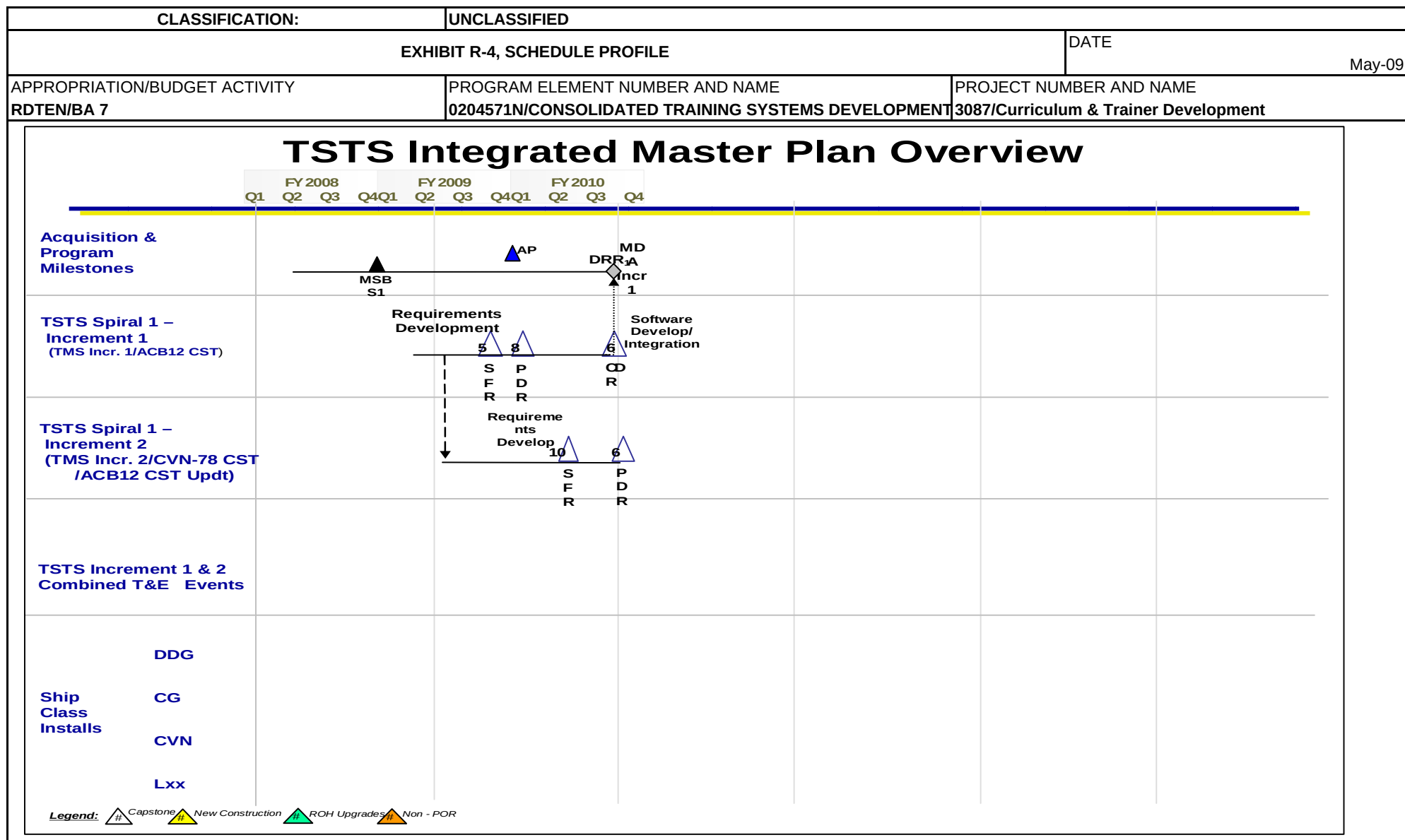
CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 2124/Air Warfare Training			
Schedule Profile		FY 2008	FY 2009	FY 2010				
AWTD Support of Naval Aviation Sim. Master Plan (NASMP)		1Q-4Q	1Q-4Q	1Q-4Q				
Acquisition 6.4 RDT&E Milestones		1Q, 4Q	4Q	4Q				
ATTIF Modular/Open Product Types								
- ATTIF Integ. Test, & Prototype		1Q-4Q	4Q	4Q				
Software & GOTS								
- Weapons Server and Network Technologies		1Q-4Q	1Q-4Q	1Q-4Q				
- AARS w/ automated Performance Meas. (PM)		4Q	4Q					
- VISUAL Systems								
-- Common Sensor Models/Environments,		1Q-4Q	1Q-4Q	1Q-4Q				
-- Advanced sensor-capable NPSI, collaborative sensor								
-- /environment depiction for MR & DMRT								
Deployed SIMS (DMT/Sensor capable)			1Q	1Q, 4Q				
- Instructor/Human Systems Integration and intell. workload								
- reduction (I2WRT) support tools		1Q-4Q	1Q-4Q	1Q-4Q				
Test & Evaluation Milestones								
- TACAIR/MARITIME Net Ready Technologies		1Q-4Q	1Q-4Q	1Q-4Q				
- CDMTS & AARS Spec/Demos		1Q-4Q	1Q-4Q	1Q-4Q				
- Sensor stimulation (3) / Sensor Fusion		1Q-4Q	1Q-4Q	1Q-4Q				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 3087/CURRICULUM & TRAINER DEVELOPMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	0.000	10.436	26.591				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Total Ship Training System (TSTS) supports DoD Training Transformation and the updated Surface Warfare Training Manual COMNAVSURFOR INST 3502.01D (1 July 07) requirements which call for continuous learning and realistic mission training environments with measurable warfighter performance linked to readiness across the training continuum from inport CONUS to in-theater mission rehearsal. TSTS Spiral 1 is the cornerstone of shipboard embedded training and critical to accomplishing Training Transformation Governance Board (T2GB) strategy and objectives for warfighting performance improvements in the areas of Anti-Submarine Warfare (ASW), Ballistic Missile Defense (BMD), and Surface Warfare and Information Warfare improvements. The TSTS Combat System Trainer (CST) enhancement to BFTT shall employ a spiral development process to allow continuous incremental implementation of core training system functionality and critical warfighting training capabilities in multiple mission areas as prioritized by the Fleet. TSTS will improve upon the current BFTT DIS interoperability limitations and model databases by developing the requisite architecture and associated computer programs to facilitate the transition to HLA and common modeling, scenario generation and control and assessment. Migration to TSTS is required to ensure continued, persistent Fleet Synthetic Training (FST) interoperability. TSTS will integrate existing and emergent onboard training and assessment system capabilities to simulate realistic, train like you fight, combat-like conditions across combat systems, engineering, damage control and navigation systems. It shall provide a continuous shipboard organic learning environment interoperable with NCTE through On-Demand, Just In Time (JIT), scenario-driven, Objective Based Training (OBT), and mission rehearsal capabilities initially available in port, and ultimately underway and in-theater.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 3087/CURRUCULUM & TRAINER DEVELOPMENT	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.000	10.436	26.591
RDT&E Articles Quantity	0	0	0
K3087: Funds develop the Total Ship Training System (TSTS) core capabilities. TSTS shall be implemented as a System of Systems (SoS) capability. In the near term, TSTS development is focused on Combat Systems, Navigation and Seamanship, and Damage Control Training (DCT); in the long term, TSTS will expand to include Engineering, Logistics, Aviation, Visit, Board, Search, and Seizure (VBSS), Medical, Sentry/Lookout, Intelligence, and Security Force training. Development of TSTS Spiral 1 includes development of the completely redesigned, re-architected, and enhanced Combat System Trainer with the following characteristics: decoupled models and entity database; Fleet Synthetic Training (FST) High Level Architecture (HLA) compatibility; FST filtering improved training system usability; readiness based assessment objective based planning; and high band width encryption. TSTS shall integrate internal environments and interoperate with external environments via the Navy Continuous Training Environment (NCTE). The TSTS common integrating element will be the Training Management System (TMS) capability. Establishing the architecture of the TMS is also part of TSTS Spiral 1 development. The need for transforming training is documented within the Office of Force Transformation (OFT) Military Transformation Initiative, DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan (FRP), and Commander United States Fleet Forces Command (CUSFFC) Fleet Readiness Training Plan (FRTF). TSTS efforts include scenario development, knowledge management, common environment system/software engineering, technical system design, software design, safety assessment, program management, software development, system integration, test and evaluation and logistics support. Prototypes of the various TSTS hardware and software subsystems will be designed and documented in design specifications. FY09 Planned Accomplishments include: Continues development and integration of TSTS Spiral 1 identified by the Total Ship Training Capability (TSTC) Initial Capabilities Document (ICD). This includes overall system development, and development of the Training Management System (TMS) and the Combat System Trainer (CST) components of TSTS. TSTS Spiral 1 efforts include overarching architecture definition/development, configuration management, integrated logistics efforts, software development, System Test and Evaluation (T&E), and certification. TSTS TMS component development includes planning services, training objectives, training scenario, data collection, debrief material, permission to train, and knowledge management. TSTS CST component development includes interfaces to platform unique sensor, weapon and combat system elements like Aegis Advanced Capability Build (ACB12). The TSTC ICD defines TSTS as the Combat Systems Training program targeted to meet COMNAVSURFOR's requirements for synthetic combat systems crew training for AEGIS Modernization, CVN-72 CAPSTONE upgrade, CVN-78, and all subsequent ships after FY12. TSTS supports DoD Training Transformation and the updated Surface Warfare Training Manual COMNAVSURFOR INST 3502.01D (1 July 07) requirements which call for continuous learning and realistic mission training environments with measurable warfighter performance linked to readiness across the training continuum from inport CONUS to in-theater mission rehearsal. TSTS Spiral 1 is the cornerstone of shipboard embedded training and critical to accomplishing Training Transformation Governance Board (T2GB) strategy and objectives for warfighting performance improvements in the areas of Anti-Submarine Warfare (ASW), Ballistic Missile Defense (BMD), and Surface Warfare and Information Warfare improvements within the Open Architecture (OA) and COTS modernization standards for shipboard systems in FY10. Efforts will include EDM/prototype development of the completely redesigned, re-architected, and enhanced Combat System Trainer (CST) with the following characteristics: decoupled models and entity database; Fleet Synthetic Training (FST) High Level			

CLASSIFICATION:		UNCLASSIFIED			
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)					DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT		PROJECT NUMBER AND NAME 3087/CURRICULUM & TRAINER DEVELOPMENT	
Architecture (HLA) compatibility; FST filtering improved training system usability; readiness based assessment objective based planning, high band width encryption. CST must be fielded by FY10 to address the BFTT technology obsolescence window and preserve training capability in support of AEGIS Modernization.					
FY10 Planned Accomplishments: Continues overall TSTS Spiral 1 system development, TMS and CST component development. For all identified requirements for TSTS Baseline 1, development of TSTS will start the Design Phase for the Training Management System Services. The combat system stimulation elements of the Combat System Trainer (CST) component support the stimulation of a training environment for the Aegis Modernization and CVN-78 platforms. ASW, BMD, IW enhanced Warfighter capabilities and requirements identified in FY09 shall start development. Integration of the Service Oriented Architecture elements of Training Management Systems shall start design phase to allow integration of planning and assessment tools into shipboard training systems. Requirements engineering for the SSDS CVNs.					
C. OTHER PROGRAM FUNDING SUMMARY:					
Line Item No. and Name		FY 2008	FY 2009	FY 2010	Total Cost
OPN 276200 (Surface (N86) BFTT/TSTS portion only)		20.332	21.008	25.256	66.596
D. ACQUISITION STRATEGY: The TSTS acquisition strategy for system development utilizes the spiral development model, as mandated by OSD and incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible.					
E. MAJOR PERFORMERS: CDSA Dam Neck NSWC Dahlgren NSWC PHD NUWC Newport					

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					PROJECT NUMBER AND NAME 3087/Curriculum & Trainer 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		Total Cost (\$000)	Target Value of Contract
Hardware Development	CPFF	NAVSEA 02	11.801			1.500	MAR-09	2.200	MAR-10			
Ship Integration			1.725			0.000		0.000				
Systems Engineering	WR/REQN	NSWC PHD/CDSA/NUWC Newport/NSWC Dahlgren/NAVSEA 02	1.292			2.964	DEC-08	2.657	DEC-09			
Subtotal Product Development			14.818			4.464		4.857				
Remarks:												
Software Development	WR/REQN	NSWC PHD/CDSA/NUWC Newport/NSWC Dahlgren/NAVSEA 02	4.435			3.824	MAR-09	19.040	MAR-10			
Technical Documentation	WR/REQN	NSWC PHD/CDSA/NUWC Newport/NSWC Dahlgren/NAVSEA 02	1.100			0.548	DEC-08	0.000				
Subtotal Support Costs			5.535			4.372		19.040				
Remarks:												
Developmental Test & Evaluation	WR/REQN	NSWC PHD/CDSA/NAVSEA 02	2.800			0.400	DEC-08	1.070	DEC-09			
Subtotal Test and Evaluation			2.800			0.400		1.070				
Remarks:												
Government Engineering Services	WR/REQN	CDSA/NSWC Dahlgren	0.165			1.200	JAN-09	1.624	JAN-10			
Subtotal Management Services			0.165			1.200		1.624				
Remarks:												
Total Cost			23.318			10.436		26.591				



CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 3087/Curriculum & Trainer Development			
Schedule Profile		FY 2008	FY 2009	FY 2010				
TSTS DEVELOPMENT (INCREMENT 1)		2Q-4Q	1Q-4Q	1Q-4Q				
TSTS MILESTONE B			1Q					
TSTS DEVELOPMENT (INCREMENT 2)			2Q-4Q	1Q-4Q				
INCREMENT 1 SFR			3Q					
INCREMENT 1 PDR			4Q					
INCREMENT 2 SFR				1Q				
INCREMENT 1 CDR				3Q				
INCREMENT 2 PDR				3Q				
TSTS DT/EOA								
INCREMENT 2 CDR								
INCREMENT 1 GAT								
INCREMENT 1 TRR								
TSTS DT/OT								
INCREMENT 1 DT&E								
INCREMENT 1 CG 62 CERTIFICATION								
INCREMENT 2 GAT								
INCREMENT 2 TRR								
INCREMENT 1 AIE								
INCREMENT 2 ET&E								
INCREMENT 2 DDG 53 CERTIFICATION								
TSTS MILESTONE C								
TSTS FOT&E								

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 3093/TACTS/LATR REPLACEMENT		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	3.442	3.014	8.793				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Combat Training System (TCTS) will provide the Navy a replacement for major portions of the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR). TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a Non-Developmental Item (NDI) Pod system was at NAS Key West. The program incorporates an evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure data link. The milestone Decision Authority (MDA) approved program rebaseline on May 23, 2005. The MDA approved acquisition streamlining February 2006, which included six additional R,D,T&E test articles, in FY07, to support Operational Test.							

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 3093/TACTS/LATR REPLACEMENT		
B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	3.442	3.014	8.793	
RDT&E Articles Quantity	0	0	0	
TCTS: Qualified and completed the NDI Rangeless Pod system fielded at NAS Key West, including the complete Integrated Logistics products and training. Developed and implemented track exchange interface between TCTS live monitor and TACTS Control and Computation Subsystem (CCS). Defined Test and Training Enabled Architecture (TENA) compliant interface between TCTS and an Advance Display System. Developed F/A-18 (C/D/E/F) and AV-8B Internal Subsystem (IS) and began qualification testing. Initiated development of the Fixed Ground Subsystem and data link uplink control for fielding at larger navy training ranges. Develop and deliver Integrated Logistics products for the IS and for fielding the TCTS system for deployed and fixed Range applications. Initiated the development of a Rack-Mounted subsystem for use on rotary wing and transport aircraft. Continue development of the Advanced Data link waveform and the Joint Tactical Radio System (JTRS) advance data link. FY10/11 reprogram of APN-7 (0204571N BLI 0725) funds to RDT&E to address and fund development of the JTRS radio and synchronize the budget to schedule. Develop shipboard ground subsystem and related training range integration.				
C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
4204	5.670	7.643	5.392	18.705
Related APN; Other Production Charges, LI 072500	20.643	27.788	23.861	72.292
D. ACQUISITION STRATEGY: TCTS will employ an evolutionary incremental acquisition strategy to procure a base Non-Developmental Item Systems and development of the system to meet the full ORD requirements. TCTS is a cooperative program with the USAF P5 CTS program. The USAF awarded a 10-year contract in June 2003.				

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 3093/TACTS/LATR REPLACEMENT	
E. MAJOR PERFORMERS: Performer = Rockwell Collins, Inc. Location = Cedar Rapids, IA Description = Range Instrumentation Waveform FY 2008 Award Date = FY 2009 Award Date = 11/08 FY 2010 Award Date = 11/09 Performer = General Dynamics Location = Phoenix, AZ Description = JTRS SS F-K FY 2008 Award Date = 3/08 FY 2009 Award Date = 11/08 FY 2010 Award Date = 11/09 Performer = Cubic DAI Location = San Diego, CA Description = TCTS ADL FY 2008 Award Date = FY 2009 Award Date = 11/08 FY 2010 Award Date = 11/09			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					PROJECT NUMBER AND NAME 3093/TACTS/LATR Replacement					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY 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 Hardware Development	SS CPAF	CUBIC DEFENSE APPL	9.811			0.000		0.000				
Award Fees			1.090			0.000		0.000				
Subtotal Product Development			10.901			0.000		0.000				
Remarks:												
Software Development	SS CPAF	CUBIC DEFENSE APPL	9.701			0.690	NOV-08	1.825	NOV-09			
Software Development	SS CPAF	ROCKWELL COLLINS	4.072			1.486	NOV-08	5.277	NOV-09			
Integrated Logistics Support	Various	VARIOUS	0.503			0.000		0.045	VAR			
Contractor Eng Sup	SS CPAF	CUBIC DEFENSE APPL	0.914			0.000		0.000				
Award Fees		VARIOUS	1.530			0.000		0.000				
Subtotal Support Costs			16.720			2.176		7.147				
Remarks:												
Developmental Test & Evaluation	Various	VARIOUS	2.948			0.209	NOV-08	0.225	NOV-09			
Operational Test & Evaluation	WR	OPER T&E NORFOLK VA	0.043			0.000		0.000				
Subtotal Test and Evaluation			2.991			0.209		0.225				
Remarks:												
Contractor Engineering Support	Various	VARIOUS	0.827			0.150	NOV-08	0.535	NOV-09			
Government Engineering Support	Various	VARIOUS	4.232			0.477	NOV-08	0.884	NOV-09			
Travel	Various	VARIOUS	0.012			0.002	VAR	0.002	VAR			
Subtotal Management Services			5.071			0.629		1.421				
Remarks:												
Total Cost			35.683			3.014		8.793				

CLASSIFICATION:										UNCLASSIFIED																						
EXHIBIT R-4, SCHEDULE PROFILE																				DATE May 2009												
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7										PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT										PROJECT NUMBER AND NAME 3093/TACTS/LATR Replacement												
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones									Phase 5 MS B △																							
Acquisition Phase																																
Phase 1 NDI - Trans. GS/AS)																																
Phase 2 Internal Subsystem (IS)																																
Rack-Mount Subsystem																																
Phase 4 Advanced Datalink																																
Phase 5 Battle Group																																
Internal Subsystem Dev																																
Rack-Mount Subsystem Dev																																
Ground Subsystem Dev																																
Advanced Datalink Dev																																
Test & Evaluation Milestones																																
Phase 1 (NDI)																																
Phase 2 Internal Subsystem (IS)																																
Rack-Mounted Subsystem (RS)																																
System: CVW-5																																
Fixed Range																																
Production Milestones																																
Phase 1 NDI - Transportable (GS,AS)		FRP	△																													
		FRP	△																													
Phase 2 Inter Subsystems (IS)		FRP	△																													
		FRP	△																													
Rack Mounted Subsystem (RS)																																
Phase 4 Advanced Datalink																																
Phase 5 Battle Group																																
Deliveries IOC	▲	▲																														
	Yuma	CVW-5																														

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME 3093/TACTS/LATR Replacement			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Acquisition Milestones								
- Phase 5 MS B				1Q				
- Phase 4 MS C								
Acquisition Phase								
- Phase 1 NDI - Transportable (GS, AS)		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 2 Internal Subsystem (IS)		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 5 Battle Group								
Deliveries IOC		1Q, 2Q						
- Fixed Range		1Q						
Production Milestones								
- Phase 1 NDI - Transportable (GS, AS)		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 2 Internal Subsystem (IS)		1Q-4Q	1Q-4Q	1Q-4Q				
-- Rack-Mount Subsystem (RS)		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 4 Advanced Datalink		1Q-4Q	1Q-4Q	1Q-4Q				
- Advanced Datalink Dev				4Q				
Test & Evaluation Milestones								
- Phase 1 (NDI)								
- Phase 2 Internal Subsystem (IS)		2Q						
-- Rack-Mount Subsystem (RS)		1Q						
- System: CV-5		1Q						
-- Rack-Mount Subsystem (RS)		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 4 Advanced Datalink		1Q-4Q	1Q-4Q	1Q-4Q				
- Phase 5 Battle Group								
- Internal Subsystem Dev								
- Rack-Mount Subsystem Dev								
- Ground Subsystem Dev								

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.158	1.595	0.000
RDT&E Articles Quantity	0	0	0
ASW Training Interoperability Enterprise Demo Test PU 9C57A: FY08 Congressional Add for Undersea Warfare (USW) Training is essential to effective USW warfighting operations, i.e. the "Fight as you Train" principle. The Navy's Supportability Peer Review Process Work Group - SupWG, whose membership spans across the US Navy, National laboratories, and private industry representatives, develops common core Training elements in support of the US Navy's warfighting missions. The ultimate goal of the working group is to achieve theater-wide common, interoperable, and high fidelity USW training baselines for the shipboards, undersea, airborne, and shore-based USW communities.			
The SupWG supplies open architecture training products, developed through a successful build-test-build, best-of-breed process to support rapid technology improvement and deployment. SupWG training technology is a scalable, configurable, hardware independent modular software solution, designed to support both deployed combat systems and shore based training systems. SupWG products support a wide range of USW platforms including AN/SQQ-89A(V), 15 Surface Combatant; Improved Performance Sonar (IPS) Surface Combatant; Littoral Combat Ship (LCS) ASW Mission Package; DDG1000 Zumwalt Class; P-8A Poseidon (formerly the Multimission Maritime Aircraft or MMA), P-3 Tactical Operational Readiness Trainer (TORT) and SH-60B/MH-60R/SH-60F Tactical Operational Flight Trainers (TOFT) shore based trainers.			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.542	1.037	0.000
RDT&E Articles Quantity	0	0	0
Total Ship Training System (TSTS) PU 3087A: FY08 Congressional Add supports development of a voice command recognition and assessment capability to the Total Ship Training System (TSTS) Support System and completes preparation for demonstration in FY09 (\$1.037M). The voice recognition capability is to be used to monitor the performance of Officers during a training scenario and to support the automated assessment of their performance. This will reduce the shipboard manpower requirements to run and assess a shipboard team training event.			

Exhibit R-2, RDT&E Budget Item Justification							DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 7				R-1 Item Nomenclature: 0204574N Cryptologic Direct Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	1.434	1.437	1.609					
Advanced Cryptologic Systems Engineering (CCOP) / 3091	1.434	1.437	1.609					
A. Mission Description and Budget Item Justification: The Advanced Cryptologic Systems Engineering (CCOP) program develops state-of-the-art signal acquisition software in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 100 cryptologic capable surface ships in the current Navy inventory. Each of these ships is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are numerous subsurface and air platforms that are also potential users. This funding line will provide the resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off -The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems that provide system and mission management, product reporting and data analysis. COTS/GOTS system documentation and training materials usually require some level of adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Before deployment for operational use, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks (LAN)s, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence (ONI) security requirements and network testing is conducted in accordance with Information Technology (IT)-21 requirements to allow connection to Navy networks. This Research, Development, Test & Evaluation (RDT&E) will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements. FY10 funds will continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and Target Threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Additional funds will aid in the development of new SOI algorithms in support of cryptologic systems.								

Exhibit R-2, Budget Item Justification

Exhibit R-2, RDT&E Budget Item Justification			DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 7		R-1 Item Nomenclature: 0204574N Cryptologic Direct Support		
B. Program Change Summary:				
(U) Funding:		FY 2008	FY 2009	FY 2010
FY09 President's Budget Submit		1.434	1.441	1.630
FY10 President's Budget Submit		1.434	1.437	1.609
Total Adjustments		0.000	-0.004	-0.021
Summary of Adjustments				
Rate/Miscellaneous Adjustments		0.000	-0.004	-0.021
Subtotal		0.000	-0.004	-0.021
(U) Schedule:				
N/A				
(U) Technical:				
N/A				

Exhibit R-2, Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
Appropriation/Budget Activity RDT&E, N / BA 7		Project Name and Number Advanced Cryptologic Systems Engineering (CCOP) / 3091	
B. Accomplishments/Planned Program			
Cryptologic Carry-On Equipment (CCOP)	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	1.434	1.437	1.609
RDT&E Articles Quantity			
FY08 - Continued to integrate, test, and document identified Commercial Off-The-Shelf (COTS) and Government Off -The-Shelf (GOTS) technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the FY08 Signals of Interest (SOI) and Target Threat list. Continued to develop upgrades to existing systems and subsystems according to Fleet requirements. FY09 - Continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the FY09 SOI and Target Threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements. FY10 - Continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the FY10 SOI and Target Threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Additional funds will aid in the development of new SOI algorithms in support of cryptologic systems.			

Exhibit R-2a, Project Justification

EXHIBIT R-2a, RDT&E Project Justification				DATE:	May 2009
Appropriation/Budget Activity RDT&E, N / BA 7			Project Name and Number Advanced Cryptologic Systems Engineering (CCOP) / 3091		
C. Other Program Funding Summary:					
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>		
OPN Line Item 3501, Cryptologic Equipment	23.730	16.667	16.839		
D. Acquisition Strategy:					
Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to Space and Naval Warfare (SPAWAR) Systems Centers (SSCs) Charleston and San Diego, and miscellaneous contractors, with management oversight by SPAWAR.					
E. Major Performers:					
N/A					

Exhibit R-2a, Project Justification

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA7			Program Element 0204574N					Project Name and Number Advanced Cryptologic Systems Engineering (CCOP) / 3091				
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												
Ancillary Hardware Development												
Systems Engineering	Various	Various	1.547	0.172	12/08	0.196	12/09					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.547	0.172		0.196						
Remarks:												
Development Support												
Software Development	Various	Various	3.992	1.005	12/08	1.119	12/09					
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			3.992	1.005		1.119						
Remarks:												

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis (page 2)								DATE: May 2009				
Appropriation/Budget Activity RDT&E, N / BA7			Program Element 0204574N					Project Name and Number Advanced Cryptologic Systems Engineering (CCOP) / 3091				
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	0.212	0.056	12/08	0.065	12/09					
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Subtotal T&E			0.212	0.056		0.065						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Various	0.618	0.160	Various	0.180	Various					
Travel			0.173	0.044		0.049						
Subtotal Management			0.791	0.204		0.229						
Remarks:												
Total Cost			6.542	1.437		1.609						
Remarks:												

Exhibit R-3, Project Cost Analysis

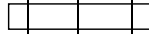
Exhibit R-4, RDT&E Program Schedule Profile																DATE: May 2009																
Appropriation/Budget Activity								Program Element Name and Number								Project Name and Number																
RDT&E, N / BA 7								0204574N Cryptologic Direct Support								Advanced Cryptologic Systems Engineering (CCOP) / 3091																
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Prototype Phase																																
System Development (e.g., Radar System dev.)																																
	SDR				SDR				SDR																							
Equipment Delivery (e.g., EDM Radar Delivery)																																
T&E Milestones			OA				OA				OA																					
Operational Assessment																																

Exhibit R-4, Program Schedule Profile

UNCLASSIFIED

[illegible]

Exhibit R-4a, Program Schedule Detail

CLASSIFICATION:								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /				R-1 ITEM NOMENCLATURE 0204575N Electronic Warfare (EW) Readiness Support				
BA 7								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	34.959	24.206	37.524					
2263 Information Warfare Systems	34.959	24.206	37.524					
Quantity of RDT&E Articles	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The key focus areas include Information Operations (IO) Mission Management, Electronic Attack (EA), and Computer Network Operations. IO Mission Management: Develops software to account for antenna modeling, weather calculations, Radio Frequency (RF) modeling, signals mapping and terrain modeling for warfighter use in configuring optimal Electronic Attacks from afloat. Develops command and control mechanism for remote use of Electronic Attack assets to include frequency, antenna alignment and weapon firing data transfer. Develops a modeling and simulation laboratory for the program office to use in the development, intended effect, and risk reduction of new EA capabilities. EA: Develops and fields spiral EA capabilities against Fleet Forces Command prioritized signals and target sets. EA capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface IO platforms (Classic Troll, Banshee and SSEE-Inc E/ F). Also included is the Navy's investment in ICADS proof of concept system. Computer Network Operations (CNO): Funds development and testing of adversary target networks for modeling, simulation, and tailoring of CNO capabilities. Develops specific CNO capabilities to be used against adversary networks. Supports Electronic Target Folder database which provides a means of sharing and storing common CNO data. Studies unique adversary CNO vulnerabilities for exploitation. (Specific development details held at a higher classification level.) This program received a Ballistic Missile Defense/High Value Units (BMD/HVU) and Red Flash increase which will provide additional or enhanced IO capabilities to enable OPLANs and support Major Combat Operations (MCO) scenarios. This effort leverages and continues the development of Computer Network Attack (CNO) capabilities and also provides for the delivery of two MCS21 mobile/ground components. (Specific development/capability details are held at a higher classification level.)								

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 7	
		0204575N Electronic Warfare (EW) Readiness Support	
B. Program Change Summary			
Funding:	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>
FY09 President's Budget	33.779	24.276	29.552
FY10 OSD Submit	34.959	24.206	37.524
Total Adjustments	<u>1.180</u>	<u>-0.070</u>	<u>7.972</u>
Summary of Adjustments:			
Misc/Rate Adjustments		-0.070	-0.837
Program Adjustments	<u>1.180</u>	<u>8.809</u>	
	<u>1.180</u>	<u>-0.070</u>	<u>7.972</u>
Schedule: N/A			
Technical: N/A			

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204575N Electronic Warfare (EW) Readiness Support				PROJECT NUMBER AND NAME Information Warfare/ 2263			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost- IO Mission Management		5.580	3.468	4.832					
RDT&E Articles Qty		N/A	N/A	N/A					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
FY2008 Accomplishments (2.6) – RF modeling architecture integration (1.4) – IO Mission Management Remote Control (0.1) – Antenna Modeling (Applied/projected level of effort) (0.3) – Terrain Modeling (Applied/projected level of effort) (1.1) – Modeling & Simulation Lab (Applied/projected level of effort) FY2009 Plans (1.6) – RF modeling architecture integration (0.7) – IO Mission Management Remote Control (0.0) – Antenna Modeling (Applied/projected level of effort) (0.1) – Terrain Modeling (Applied/projected level of effort) (1.0) – Modeling & Simulation Lab (Applied/projected level of effort) FY2010 Plans (2.8) – RF modeling architecture integration (0.7) – IO Mission Management Remote Control (0.1) – Antenna Modeling (Applied/projected level of effort) (0.2) – Terrain Modeling (Applied/projected level of effort) (1.0) – Modeling & Simulation Lab (Applied/projected level of effort) In FY08 IO Mission management funded integration onto a new, web-based architecture, reflecting an increase in funding.									

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204575N Electronic Warfare (EW) Readiness Support				PROJECT NUMBER AND NAME Information Warfare/ 2263		
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010				
Project Cost- Electronic Attack			10.445	10.644	19.118				
RDT&E Articles Qty			N/A	N/A	N/A				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION FY2008 Accomplishments (5.0) - EA Systems Development (Details held at higher classification level) (1.3) - EA antenna development - Prototype delivery of Photonics antenna (2.2) - IW/IO EA capability development (Details held at higher classification level) (0.2) - Testing (1.7) - ICADS (Details held at higher classification level) FY2009 Accomplishments (5.4) - EA Systems Development (Details held at higher classification level) (1.3) - EA antenna development - Spiral capability upgrade delivery of Photonics antenna (1.5) - IW/IO EA capability development (Details held at higher classification level) (0.2) - Testing (2.2) - ICADS (Details held at higher classification level) FY2010 Plans (12.6) - EA Systems Development (Details held at higher classification level) (0.8) - EA antenna development - Spiral capability upgrade delivery of Photonics antenna (5.1) - IW/IO EA capability development (Details held at higher classification level) (0.6) - Testing									

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204575N Electronic Warfare (EW) Readiness Support				PROJECT NUMBER AND NAME Information Warfare/ 2263			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost- Computer Network Operations		16.396	7.387	9.659					
RDT&E Articles Qty		N/A	N/A	N/A					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: FY2008 Accomplishments (0.5) – Navy IO Architecture (2.5) – Tactical IO Initiatives - Complete assessments initial prototypes (11.7) – Computer Network Attack Capabilities Development (Details held at higher classification level) (1.0) – CNO for Maritime Domain Awareness (0.6) – Contractor Engineering Support FY2009 Plans (0.0) – Navy IO Architecture (0.9) - Electronic Target Folder Development (6.0)– Computer Network Attack Capabilities Development (Details held at higher classification level) (0.5) - Contractor Engineering Support FY2010 Plans (0.7) – Navy IO Architecture (1.1) – Integrate CNO capabilities into MCS21 Architecture (6.3)– Computer Network Attack Capabilities Development (Details held at higher classification level) (1.2 - Demonstration of Advanced Computer Network Operations Concept (Details held at higher classification level) (0.3) – Contractor Engineering Support									

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204575N Electronic Warfare (EW) Readiness Support				PROJECT NUMBER AND NAME Information Warfare/ 2263		
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010				
Project Cost: Research & Analysis			2.538	2.707	3.915				
RDT&E Articles Qty			N/A	N/A	N/A				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: FY2008 Accomplishments (0.3) – Completion and continuation of several Systems (reverse) Engineering projects (Details held at higher classification level) (2.2) – Continued Research & Analysis (Details held at higher classification level) FY2009 Plans (0.5) – Contractor Engineering Support (2.2) – Continue Research & Analysis (Details held at higher classification level) FY2010 Plans (1.0) – Contractor Engineering Support (3.0) – Continue Research & Analysis (Details held at higher classification level)									

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-7		0204575N Electronic Warfare (EW) Readiness Support	
				Information Warfare/ 2263	

B. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0604270N/Z1742	7.661	5.426	4.991
OMN Line 4A1M	60.239	34.255	33.575

C. ACQUISITION STRATEGY:

NIOC Suitland programs are designated non-ACAT and operate under streamlined acquisition as designated by the ASN(RDA). This designation supports a streamlined acquisition process using the Advanced Concept Technology Demonstration (ACTD) documentation of the Defense Acquisition Guidance.

D. MAJOR PERFORMERS:

<u>Name</u>	<u>Location</u>	<u>Description of Work Performed</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>
Argon ST	Fairfax, VA	EA Systems Development	1Q FY08	1Q FY09	1Q FY10
L3 Communications	Reston, VA	Mission Management Development	1Q FY08	1Q FY09	1Q FY10
ARL Penn State University	State College, PA	Modeling & Simulation	1Q FY08	1Q FY09	1Q FY10
Naval Research Laboratory	Washington, DC	Research & Analysis	1Q FY08	1Q FY09	1Q FY10
		EA Systems Development	1Q FY08	1Q FY09	1Q FY10
NAWC/WD	China Lake, CA	IO Test Development & Support	1Q FY08	1Q FY09	1Q FY10

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-7			PROGRAM ELEMENT 0204575N				PROJECT NUMBER AND NAME Information Warfare/ 2263					
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	12.263	2.165	02/00	3.100						
Ancillary Hardware Development	Various	Various	7.400	1.750	Various	2.100	Various					
Systems Engineering	Various	Various		2.165	02/00	2.000						
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees							Various					
Subtotal Product Development			19.663	6.080	Various	7.200						
Development Support	Various	Various	7.748	2.050	Various	4.320	Various					
Software Development	Various	Various	55.512	13.209	Various	18.791	Various					
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			63.260	15.259		23.111						

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)										DATE:		
APPROPRIATION/BUDGET ACTIVITY										May 2009		
RD&E, N /			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
BA-7			0204575N			Information Warfare/ 2263						
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	4.151	0.160	02/00	0.664	Various					
Operational Test & Evaluation												
Live Fire Test & Evaluation					02/00							
Test Assets												
Tooling												
GFE												
Subtotal T&E	Various	Various	4.151	0.160	Various	0.664	Various					
Research, Studies and Vul Anal	Various	Various	4.950	2.207	10/08	3.079	10/09					
Contractor Engineering and Program Management Support	Various	Various	0.400	0.500	10/08	3.470	10/09					
Subtotal Management	Various	Various	5.350	2.707	Various	6.549	Various					
Total Cost	Various	Various	92.424	24.206	Various	37.524	Various	0.000	Various	Continuing	Continuing	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
RDT&E, N / BA-7					0204575N Electronic Warfare (EW) Readiness Support										Information Warfare/ 2263													
Fiscal Year	2008				2009				2010																			
	1	2	3	4	24.21 1	37.52 2	3	4	1	2	3	4																
					24.21	37.52																						
Acquisition Milestones																												
Prototype EA System Development FAT																												
Mission Mgmt Software																												
Segment A on GCCS-M 4.1 Segment A&B on SOA continued development																												
EA capability software dev Lighthouse Delivery																												
Computer Network Operations Capabilities Development Counter-Anti Ship Maritime Domain Awareness																												
ACNA Del. A ACNA Del. B FIOC Del. Study 1 Delivery Study 2 Delivery MDA Cell IOC																												
Test & Evaluation Milestones																												
Surface IO capabilities DT Airborne IO capabilities MCS-21 IO capabilities EA Prototype System																												
Production Milestones																												
N/A																												

Note: EA Software deliveries will be integrated into existing programs of record on surface, subsurface and airborne platforms to include SSEE-Inc E/F, Classic Troll and Banshee.

Exhibit P-4a Sched

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7							R-1 ITEM NOMENCLATURE 0205601N, HARM IMPROVEMENT	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	70.053	33.668	30.045					
1780 HARM IMPROVEMENT	1.720	1.920	1.919					
2185 AARGM	45.475	16.225	9.235					
3056 APKWS	13.639	13.030	5.000					
3212 MEDUSA JCTD			13.891					
9999 CONGRESSIONAL ADDS	9.219	2.493						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) HIGH-SPEED ANTI-RADIATION (HARM) IMPROVEMENT: The High-speed Anti-Radiation Missile (HARM) is a joint service program with the Air Force (Navy lead). The program commenced full rate production in FY 1983. Program Element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (AGM-88B, Block III & AGM-88C, Block IV) as Engineering Change Proposals (ECP). Another ECP software program (Block IIIA & V) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. HARM Block IIIA/V software was distributed to the Fleet in FY 2000. HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts.

(U) ADVANCED ANTI-RADIATION GUIDED MISSILE (AARGM): AARGM is an ACAT-IC acquisition program in System Development & Demonstration (SD&D) to upgrade the AGM-88 HARM missile with multi-mode/multi-spectral guidance and targeting capability. AARGM also incorporates the capability to receive national broadcast data and transmit weapon impact assessments (demonstrated in Quick Bolt Advanced Concept Technology Demonstration (ACTD)). AARGM SD&D commenced in FY 2003. DT-B1 began in FY 2004 and continued through 4Q FY 2008. Captive carry testing of Engineering Manufacturing Development hardware began in FY 2007. DT-B1 overlapped with DT-B2 which began in 3Q FY 2007. There have been five successful live fire tests conducted. Three additional live fire tests are planned for DT-B2. Operational Assessment was completed 4Q FY 2008. This test schedule will support readiness for Operational Evaluation. No significant failures have occurred. Milestone C was achieved 4Q FY 2008, followed by a combined Low Rate Initial Production (LRIP) Lot 1 and Lot 2 contract award in 1Q FY 2009. LRIP 1 deliveries are scheduled to commence 2Q FY 2010. The AARGM program plans production of 1,871 modification kits.

(U) ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS): APKWS was an Army SD&D program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75-inch unguided rockets. The Army did not support APKWS in its POM 2008 budget submission. Congress appropriated \$6M in FY 2008 for the Navy to continue and complete SDD and the language encouraged reprogramming if needed. A \$14M ATR was approved in April 2008. APKWS II will provide an inexpensive, small, lightweight, precision-guided weapon that is effective against soft and lightly armored targets and which enhances crew survivability with increased standoff range. APKWS II offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components (warhead and rocket motor) and can be fired from existing rocket launchers.

(U) MEDUSA JCTD: The Medusa FY 2010 new start JCTD will demonstrate the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed at the Naval Air Warfare Center Weapons Division (NAWCWD) China Lake on the MH-60R. LOGIR provides "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar. LOGIR increases platform lethality against Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) threat. LOGIR provides a low-cost Imaging InfraRed (I2R) precision guidance section for the existing 2.75-inch unguided rockets. LOGIR provides maximum precision kills per sortie, low cost, minimum collateral damage, increased efficiency, and increased standoff. Medusa was approved by OSD for a rolling start. OSD is also providing funding for this effort. Initial Program documentation (i.e. Performance Spec, CDD) will be developed within the scope of the JCTD.

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			R-1 ITEM NOMENCLATURE 0205601N, HARM IMPROVEMENT	
B. PROGRAM CHANGE SUMMARY				
Funding:	FY 2008	FY 2009	FY 2010	
Previous President's Budget:	43.565	31.427	5.364	
Current BES:	70.053	33.668	30.045	
Total Adjustments	26.488	2.241	24.681	
Summary of Adjustments				
Congressional Rescissions				
Congressional Adjustments	25.600	2.333		
SBIR/STTR/FTT Assessments	-1.048			
Program Adjustments	1.936		24.692	
Rate/Misc Adjustments		-0.092	-0.011	
Subtotal	26.488	2.241	24.681	
Schedule:				
HARM IMPROVEMENT- Not Applicable				
AARGM- MSC moved from 3Q FY 2008 TO 4Q FY 2008. LRIP I contract award moved from 3Q FY 2008 to 1Q FY 2009 in conjunction with MSC. LRIP I deliveries will begin in 2Q FY 2010 vice 3Q FY 2009. Original LRIP II contract award moved from 2Q FY 2009 for a combined FY 2008/FY 2009 LRIP contract due to WPN Congressional mark. New FY 2010 LRIP II contract award will be 1Q FY 2010 with deliveries beginning in 1Q FY 2011 vice 3Q FY 2009. IOC has subsequently been moved from 1Q FY 2010 to 1Q FY 2011 to accomodate the delivery schedule. PRR moved from 2Q FY 2008 to 4Q FY 2008. FCA/SVR moved from 4Q FY 2008 to 3Q FY 2009. PCA has moved from 3Q FY 2009 to 2Q FY 2010. DT-B2 has been extended three quarters to complete in 3Q FY 2009 vice 4Q FY 2008. Operational Assessment (OT-B) moved from 2Q FY 2008 to 4Q FY 2008. Operational Evaluation (OT-C) will begin 4Q FY 2009 vice 1Q FY 2009 following completion of DT-B2. Schedule delays were due to hardware availability, increased contractor efforts for hardware integration, delays in contractor testing and delays in the F/A-18C/D Software Configuration Set software build 21X.				
APKWS- Not Applicable				
MEDUSA JCTD- Not Applicable				
Technical:				
HARM IMPROVEMENT-Not Applicable				
AARGM-Not Applicable				
APKWS- Not Applicable				
MEDUSA JCTD- Not Applicable				

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009													
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT			PROJECT NUMBER AND NAME 1780, HARM IMPROVEMENT														
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010															
1780 HARM IMPROVEMENT		1.720	1.920	1.919															
RDT&E Articles Qty																			
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: HIGH-SPEED ANTI-RADIATION (HARM) IMPROVEMENT: The High-speed Anti-Radiation Missile (HARM) is a joint service program with the Air Force (Navy lead). The program commenced production in FY 1983. Program Element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (AGM-88B, Block III & AGM-88C, Block IV) as Engineering Change Proposals (ECPs). Another ECP software program (Block IIIA & V) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. The Block V tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block IIIA/V software was distributed to the Fleet in FY 2000. HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">HARM FMA</td> <td style="width: 10%;">FY 2008</td> <td style="width: 10%;">FY 2009</td> <td style="width: 10%;">FY 2010</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>1.720</td> <td>1.920</td> <td>1.919</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </table> Conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts. C. OTHER PROGRAM FUNDING SUMMARY: <u>FY 2008</u> <u>FY 2009</u> <u>FY 2010</u> Not Applicable D. ACQUISITION STRATEGY: Not Applicable								HARM FMA	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	1.720	1.920	1.919	RDT&E Articles Qty			
HARM FMA	FY 2008	FY 2009	FY 2010																
Accomplishments / Effort / Sub-total Cost	1.720	1.920	1.919																
RDT&E Articles Qty																			

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)									DATE:				May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT					PROJECT NUMBER AND NAME									
RDT&E,N / BA-7		0205601N, HARM IMPROVEMENT					1780, HARM IMPROVEMENT									
	Contract Method & Type		Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date									
Cost Categories		Performing Activity & Location														
PRODUCT DEVELOPMENT																
Systems Engineering		WX	NAWCAD, PATUXENT RIVER MD		.230	Nov 2008	.230	Nov 2009								
SUBTOTAL PRODUCT DEVELOPMENT					.230		.230									

Remarks:

SUPPORT												
Studies & Analyses	VARIOUS	VARIOUS		.680								
SUBTOTAL SUPPORT				.680								

Remarks:

TEST & EVALUATION												
Oper Test & Eval	WX	NAWCWD, CHINA LAKE CA	13.814	1.680	Nov 2008	1.679	Nov 2009					
SUBTOTAL TEST & EVALUATION			13.814	1.680		1.679						

Remarks:

MANAGEMENT												
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	.311									
Travel	TO	NAVAIR, PATUXENT RIVER MD	.383	.010	Nov 2008	.010	Nov 2009					
SUBTOTAL MANAGEMENT			.694	.010		.010						

Remarks:

Total Cost			15.187	1.920		1.919						

Remarks: Numbers may not add due to rounding.

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																											DATE:					
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME																	PROJECT NUMBER AND NAME										
RDT&E,N / BA-7					0205601N, HARM IMPROVEMENT																	1780, HARM IMPROVEMENT										
Fiscal Year	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones																																
Test & Evaluation Milestones																																
Operational Test																																
Foreign Military Assessment (FMA)																																
Production Milestones																																
Deliveries																																

CLASSIFICATION:

[illegible]

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT			PROJECT NUMBER AND NAME 2185, AARGM			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	45.475	16.225	9.235				
RDT&E Articles Qty*	17						

*Qty reflects test article delivery.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The AGM-88E Advanced Anti-Radiation Guided Missile (AARGM) Project transitioned a Phase III Small Business Innovative Research (SBIR) program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in FY 2003. The AARGM SD&D program is designed to integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning system/Inertial Navigation System (GPS/INS)) on the HARM AGM-88 missile. AARGM weapon system capabilities include: active Millimeter Wave terminal guidance, counter shutdown, expanded threat coverage, enhanced anti-radiation homing receiver, netted targeting real-time feed via Integrated Broadcast Service (IBS) prior to missile launch, weapon impact assessment transmitted prior to detonation, GPS/point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones

The AARGM program transitioned the Quick Bolt Advanced Concept Technology Demonstration (ACTD) to SD&D. Quick Bolt added the capabilities to receive threat data from national assets, enlarging the target set and increasing aircrew situational awareness, and to transmit a Weapon Impact Assessment (WIA) message to assist in the critical area of Battle Damage Assessment (BDA). The Quick Bolt ACTD was completed in FY 2003. Quick Bolt demonstration testing successfully used Impact Avoidance Zone (IAZ) logic to distinguish between the proscribed and original target, demonstrating the ability to greatly reduce friendly fire incidents and collateral damage.

In June 2003, a successful Milestone B transitioned AARGM to a System Development and Demonstration (SD&D) Acquisition Category 1C (ACAT 1C) program. ATK Missile Systems Company (AMSC) was awarded the AARGM SD&D NAVAIR Contract N00019-03-C-0353, valued at \$222.6M. In May 2004, the contract baseline was increased to \$231.9M to accelerate incorporation of an embedded IBS-Receiver, enabling the warfighter to directly receive National intelligence data, providing additional AARGM targeting data to increase overall pilot situational awareness. Recent modifications have increased the current baseline to \$232.3. The AARGM program includes 31 test articles and 1,871 production modification kits.

DT-B1 began in FY 2004 and continued through 4Q FY 2008. Captive carry testing of Engineering Manufacturing Development hardware began in FY 2007. DT-B1 overlapped with DT-B2 which began in 3Q FY 2007. There have been five successful live fire tests conducted. Three additional live fire tests are planned for DT-B2. Operational Assessment was completed 4Q FY 2008. This test schedule will support readiness for Operational Evaluation. No significant failures have occurred. Milestone C was achieved 4Q FY 2008, followed by a combined Low Rate Initial Production (LRIP) Lot 1 and Lot 2 contract award in 1Q FY 2009. LRIP 1 deliveries are scheduled to commence 2Q FY 2010.

In FY 2010, the AGM-88E AARGM program plans to develop and demonstrate the capability to engage and destroy non-traditional Suppression of Enemy Air Defenses (SEAD)/Destruction of Enemy Air Defenses (DEAD) and GWOT targets. These developments continue Future Naval Capability (FNC) Science and Technology (S&T) investments by the Office of Naval Research (ONR) initiated in FY 2006.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT		PROJECT NUMBER AND NAME 2185, AARGM												
B. ACCOMPLISHMENTS / PLANNED PROGRAM:																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">AARGM SD&D</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>Accomplishments / Effort / Sub-total Cost</td> <td style="text-align: right;">45.475</td> <td style="text-align: right;">16.225</td> <td style="text-align: right;">3.642</td> </tr> <tr> <td>RDT&E Articles Qty*</td> <td style="text-align: right;">17</td> <td></td> <td></td> </tr> </tbody> </table>					AARGM SD&D	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	45.475	16.225	3.642	RDT&E Articles Qty*	17		
AARGM SD&D	FY 2008	FY 2009	FY 2010													
Accomplishments / Effort / Sub-total Cost	45.475	16.225	3.642													
RDT&E Articles Qty*	17															
*Qty reflects test article delivery.																
Milestone B System Development and Demonstration (SD&D) activities. Contractor to update the Advanced Technology Demonstration (ATD)/Advanced Concept Technology Demonstration (ACTD) subsystem designs to the SD&D System Performance Demonstration (ATD)/Advanced Concept Technology Demonstration (ACTD) subsystem designs to the SD&D System Performance Specification and prepare for/conduct System Design Review, Preliminary Design Review, Critical Design Review, Contractor build-up and laboratory and field testing of the AGM-88E. Field activities to support System Engineering, aircraft integration (including Software Configuration Set support), test assets, and test and evaluation requirements analysis, and developmental logistics support. Live fire testing began in FY 2007 and continued into FY 2008. In FY 2008, DT-B1 completed with integration and captive carry of AARGM on F/A-18C/D. In FY 2009, DT-B2 will be completed with integration, captive carry, and live fire of AARGM on F/A-18 C/D. OPEVAL will commence in FY 2009 with FOT&E beginning in FY 2010.																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">AARGM Derivative Program (ADP)</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>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td></td> <td style="text-align: right;">.250</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					AARGM Derivative Program (ADP)	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost			.250	RDT&E Articles Qty			
AARGM Derivative Program (ADP)	FY 2008	FY 2009	FY 2010													
Accomplishments / Effort / Sub-total Cost			.250													
RDT&E Articles Qty																
Development of capability to attack non-traditional SEAD/DEAD and OCO targets will continue through the FYDP.																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Threat Data Library Development</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>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td></td> <td style="text-align: right;">2.753</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Threat Data Library Development	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost			2.753	RDT&E Articles Qty			
Threat Data Library Development	FY 2008	FY 2009	FY 2010													
Accomplishments / Effort / Sub-total Cost			2.753													
RDT&E Articles Qty																
Update ELINT files and Millimeter Wave (MMW) signatures to ID track and engage new and/or improved threat radars. Testing and assessment of threat systems. Update AARGM threat data library.																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ARM UPC JMPS S/W Update</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>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td></td> <td style="text-align: right;">2.590</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					ARM UPC JMPS S/W Update	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost			2.590	RDT&E Articles Qty			
ARM UPC JMPS S/W Update	FY 2008	FY 2009	FY 2010													
Accomplishments / Effort / Sub-total Cost			2.590													
RDT&E Articles Qty																
Updates to UPC software in FY 2010 leading to testing to maintain ARM JMPS UPC compatibility with future JMPS ".NET" architecture.																
C. OTHER PROGRAM FUNDING SUMMARY:																
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>													
WPN Budget Line Item No. 232700, HARM MODS	41.023	22.334	47.973													
RDTEN PE 0604269N EA-18G, 3063 EA-18G Development		2.200														
D. ACQUISITION STRATEGY:																
The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program (ATD), evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) ACAT 1C program in June 2003. The AARGM SD&D will fulfill U.S. Navy operational requirements and incorporates AARGM ATD and Quick Bolt ACTD-demonstrated system requirements. Government responsibilities for SD&D include monitoring, technical assessment, and validation of contractor technology development and testing. Milestone C was achieved in September 2008.																

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE:			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E,N / BA-7		0205601N, HARM IMPROVEMENT				2185, AARGM							
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													
Aircraft Integration	WX	NAWCWD, CHINA LAKE CA	7.333	1.503	Nov 2008								
Aircraft Integration	WX	NAWCAD, PATUXENT RIVER MD	.050										
Primary Hdw Development - SD&D	C-CPIF	ALLIANT TECHSYSTEMS INC, WOODLAND HILLS, CA	263.275	3.347	Feb 2009								
Primary Hdw Development - SD&D	MIPR	HQ SEC OF AF-FMB, WASHINGTON DC	.088										
Primary Hdw Development	TBD	ALLIANT TECHSYSTEMS INC, WOODLAND HILLS, CA				2.003	Nov 2009						
Primary Hdw Development	WX	NAVY SYST MGT ACT, ARLINGTON VA	1.084			.250	Nov 2009						
Systems Eng	MIPR	HQ SEC OF AF-FMB, WASHINGTON DC	.150										
Systems Eng	WX	NAWCWD, CHINA LAKE CA	53.113	1.583	Nov 2008	2.642	Nov 2009						
Prior Years Product Development	VARIOUS	VARIOUS	176.785										
SUBTOTAL PRODUCT DEVELOPMENT			501.877	6.433		4.895							

Remarks: Total PYs Cost adjusted for Prim Hdw Devel - SD&D & Prior Years Prod Devel to accurately represent SD&D & prior contract costs. Numbers may not add due to rounding.

SUPPORT													
Integrated Logistics Sup	WX	NAWCWD, CHINA LAKE CA	5.404										
Integrated Logistics Sup	VARIOUS	VARIOUS	1.371										
Studies & Analyses	VARIOUS	VARIOUS	.711			.050	Nov 2009						
Prior Years Support	VARIOUS	VARIOUS	.012										
SUBTOTAL SUPPORT			7.498			.050							

Remarks:

TEST & EVALUATION													
Dev Test & Eval	WX	NAWCWD, CHINA LAKE CA	16.807	3.550	Nov 2008	.468	Nov 2009						
Oper Test & Eval	WX	COMOPTEVFOR, NORFOLK VA	1.247	5.474	Nov 2008	3.642	Nov 2009						
Test Assets	WX	NAWCWD, CHINA LAKE CA	5.910	.540	Nov 2008								
SUBTOTAL TEST & EVALUATION			23.964	9.564		4.110							

Remarks: Totals may not add due to rounding.

MANAGEMENT													
Contractor Eng Supt - Other	VARIOUS	VARIOUS	6.759										
ENGINEERING & TECH SRVC	VARIOUS	VARIOUS	3.144	.020	Nov 2008	.020	Nov 2009						
Program Mgmt Sup	VARIOUS	VARIOUS	6.354	.148	Nov 2008	.150	Nov 2009						
Travel	TO	NAVAIR, PATUXENT RIVER MD	1.368	.060	Nov 2008	.010	Nov 2009						
SUBTOTAL MANAGEMENT			17.625	.228		.180							

Remarks: Totals may not add due to rounding.

Total Cost			550.965	16.225		9.235							

Remarks: Totals may not add due to rounding.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY												May 2009
RDT&E,N / BA-7												
PROGRAM ELEMENT NUMBER AND NAME												
0205601N, HARM IMPROVEMENT												
PROJECT NUMBER AND NAME												
2185, AARGM												
Fiscal Year	FY 2008				FY 2009				FY 2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones			MSC	▲								
Development Preliminary Design Review Critical Design Review Functional Configuration Audit Production Readiness Review Physical Configuration Audit			PRR	▲	FCA	△			PCA	△		
Testing & Evaluation Milestones Development Testing Development Testing Operational Assessment (OT-B) Operational Evaluation (OT-C)	DT-B1							DT-B2				
			OT-B				OT-C					
Production Milestones Low-Rate Initial Production LRIP 1 Low-Rate Initial Production LRIP 2 Full Rate Production				LRIP 1	▲			LRIP 2	△			
Deliveries Low-Rate Initial Production LRIP 1 Low-Rate Initial Production LRIP 2 Full Rate							LRIP 1 Deliveries					
Initial Operational Capability (IOC)												

CLASSIFICATION:

[illegible]

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																									
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT			PROJECT NUMBER AND NAME 3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS)																										
COST (\$ in Millions)				FY2008	FY2009	FY2010																										
3056 ADVANCED PRECISION KILL WEAPON SYSTEM				13.639	13.030	5.000																										
RDT&E Articles Qty																																
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Formerly known as the Advanced Precision Kill Weapons System (APKWS), APKWS II was an Army System Development & Demonstration (SD&D) program to develop a low cost Semi Active Laster (SAL) precision guidance section for existing 2.75 inch unguided rockets. APKWS II will provide an inexpensive, small, lightweight precision-kill weapon that is effective against soft and lightly armored targets, and which enhances crew survivability with increased standoff range. APKWS offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components (warhead and rockets motor) and can be fired from existing rocket launchers. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">APKWS SD&D</td> <td style="width: 10%;">FY2008</td> <td style="width: 10%;">FY2009</td> <td style="width: 10%;">FY2010</td> <td style="width: 10%;"></td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>13.639</td> <td>13.030</td> <td>5.000</td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> APKWS System Development and Demonstration (SD&D) program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. FY 2009 funds will be used for the completion of the United States Marine Corps (USMC) led APKWS program. It will include prime contractor hardware development, engineering support, testing and evaluation, and logistic support. C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%;"> <tr> <td></td> <td style="text-align: center;"><u>FY 2008</u></td> <td style="text-align: center;"><u>FY 2009</u></td> <td style="text-align: center;"><u>FY 2010</u></td> </tr> <tr> <td>PANMC Budget Line Item No. 015100 Airborne Rockets</td> <td style="text-align: center;">26.818</td> <td style="text-align: center;">57.054</td> <td style="text-align: center;">81.153</td> </tr> </table> D. ACQUISITION STRATEGY: Not Applicable										APKWS SD&D	FY2008	FY2009	FY2010		Accomplishments / Effort / Sub-total Cost	13.639	13.030	5.000		RDT&E Articles Qty						<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	PANMC Budget Line Item No. 015100 Airborne Rockets	26.818	57.054	81.153
APKWS SD&D	FY2008	FY2009	FY2010																													
Accomplishments / Effort / Sub-total Cost	13.639	13.030	5.000																													
RDT&E Articles Qty																																
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																													
PANMC Budget Line Item No. 015100 Airborne Rockets	26.818	57.054	81.153																													

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA 7			0205601N, HARM IMPROVEMENT			3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS)							
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													
Aircraft Integration													
Primary Hdw Development	C/CPFF	BAE SYSTEMS, INC., NASUA, NH	14.924	7.000	Nov 2008								
Primary Hdw Development													
Systems Eng	WX	NAWCWD, CHINA LAKE, CA	1.658	1.430	Nov 2008								
Systems Eng	WX	NSWC INDIAN HEAD, MD	.997			.300	Nov 2009						
SUBTOTAL PRODUCT DEVELOPMENT			17.579	8.430		.300							
Remarks:													
SUPPORT													
Integrated Logistics Sup	WX	VARIOUS	.424	.200	Nov 2008								
SUBTOTAL SUPPORT			.424	.200									
Remarks:													
TEST & EVALUATION													
Dev Test & Eval	WX	VARIOUS	1.322	2.500	Nov 2008								
Oper Test & Eval	WX	OPTEVFOR		.800	Nov 2008	1.800	Nov 2009						
Test Assets													
SUBTOTAL TEST & EVALUATION			1.322	3.300		1.800							
Remarks:													
MANAGEMENT													
Government Eng Sup	WX	NAWCWD, CHINA LAKE, CA	1.127	.500	Nov 2008	2.800	Nov 2009						
Program Mgmt Sup	VARIOUS	VARIOUS	1.206	.500	Nov 2008								
Travel	TO	NAVAIR-HQ, PATUXENT RIVER, MD	.100	.100	Nov 2008	.100	Nov 2009						
SUBTOTAL MANAGEMENT			2.433	1.100		2.900							
Remarks:													
Total Cost			21.758	13.030		5.000							
Remarks:													

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE:
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N / BA 7					0205601N, HARM IMPROVEMENT					3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS)			
Fiscal Year	FY 2008				FY 2009				FY 2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
SD&D		SD&D											
							MSC						
Test & Evaluation Milestones													
Operational Assessment IOT&E							OA			IOT&E			
Production Milestones													
Deliveries													
Low-Rate Initial Production LRIP 1													
Low-Rate Initial Production LRIP 2													
Full Rate													

CLASSIFICATION:

[illegible]

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT			PROJECT NUMBER AND NAME 3212, MEDUSA JCTD																																			
COST (\$ in Millions)				FY2008	FY2009	FY2010																																			
3212 MEDUSA JCTD						13.891																																			
RDT&E Articles Qty																																									
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Medusa FY 2010 new start JCTD will demonstrate the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed at the Naval Air Warfare Center Weapons Division (NAWCWD) China Lake on the MH-60R. LOGIR provides "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar. LOGIR increases platform lethality against Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) threat. LOGIR provides a low-cost Imaging InfraRed (I2R) precision guidance section for the existing 2.75-inch unguided rockets. LOGIR provides maximum precision kills per sortie, low cost, minimum collateral damage, increased efficiency, and increased standoff. Medusa was approved by OSD for a rolling start. OSD is also providing funding for this effort. Initial Program documentation (i.e. Performance Spec, CDD) will be developed within the scope of the JCTD. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">MEDUSA JCTD</th> <th style="text-align: center;">FY2008</th> <th style="text-align: center;">FY2009</th> <th style="text-align: center;">FY2010</th> </tr> </thead> <tbody> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td>13.891</td> </tr> </tbody> </table> Demonstration of the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed. C. OTHER PROGRAM FUNDING SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY 2008</th> <th style="text-align: center;">FY 2009</th> <th style="text-align: center;">FY 2010</th> </tr> </thead> <tbody> <tr> <td>OSD (AS&C)</td> <td></td> <td style="text-align: center;">4.000</td> <td style="text-align: center;">4.000</td> </tr> <tr> <td>USN N8F</td> <td></td> <td style="text-align: center;">0.500</td> <td style="text-align: center;">0.500</td> </tr> <tr> <td>Republic of Korea</td> <td style="text-align: center;">0.200</td> <td style="text-align: center;">1.000</td> <td style="text-align: center;">1.408</td> </tr> <tr> <td>USN IPO</td> <td style="text-align: center;">0.100</td> <td></td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY Not Applicable										MEDUSA JCTD	FY2008	FY2009	FY2010	Accomplishments / Effort / Sub-total Cost				RDT&E Articles Qty			13.891		FY 2008	FY 2009	FY 2010	OSD (AS&C)		4.000	4.000	USN N8F		0.500	0.500	Republic of Korea	0.200	1.000	1.408	USN IPO	0.100		
MEDUSA JCTD	FY2008	FY2009	FY2010																																						
Accomplishments / Effort / Sub-total Cost																																									
RDT&E Articles Qty			13.891																																						
	FY 2008	FY 2009	FY 2010																																						
OSD (AS&C)		4.000	4.000																																						
USN N8F		0.500	0.500																																						
Republic of Korea	0.200	1.000	1.408																																						
USN IPO	0.100																																								

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7			0205601N, HARM IMPROVEMENT				3212, MEDUSA JCTD						
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													
Aircraft Integration													
Primary Hdw Development													
Primary Hdw Development													
Systems Eng	WX	NAWCWD-China Lake				13.481	Nov 2009						
SUBTOTAL PRODUCT DEVELOPMENT						13.481							
Remarks:													
SUPPORT													
Integrated Logistics Sup													
SUBTOTAL SUPPORT													
Remarks:													
TEST & EVALUATION													
Dev Test & Eval													
OSD (AS&C)													
Test Assets													
SUBTOTAL TEST & EVALUATION													
Remarks:													
MANAGEMENT													
Government Eng Sup													
Program Mgmt Sup	WX	NAWCAD-Patuxent River				.450	Nov 2009						
Travel	TO	NAVAIR HQ				.050	Nov 2009						
SUBTOTAL MANAGEMENT						.500							
Remarks:													
Total Cost						13.981							
Remarks:													

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile												DATE:				May 2009					
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME							
RDT&E, N / BA-7					0205601N, HARM IMPROVEMENT									3212, MEDUSA JCTD							
Fiscal Year	FY 2008				FY 2009				FY 2010												
	1	2	3	4	1	2	3	4	1	2	3	4									
Milestones																					
Test & Evaluation Milestones Integration & Demonstration																					
Production Milestones																					
Deliveries Performance Spec CDD																					

CLASSIFICATION:

[illegible]

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT			PROJECT NUMBER AND NAME 9999, Congressional Adds				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	9.219	2.493						
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds.								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT	PROJECT NUMBER AND NAME 9999, Congressional Adds	
B. Accomplishments/Planned Program			
9A74A	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost		2.493	
RDTE Articles Quantity			
Aircraft Composite Rocket Launcher			
9C58A	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	3.374		
RDTE Articles Quantity			
Advanced Anti-Radiation Guided Missile (AARGM) Funding continues AARGM SD&D program leading to IOC and AARGM Derivative Program (ADP).			
9C59A	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	5.845		
RDTE Articles Quantity			
Advanced Precision Kill Weapons Systems (APKWS) Funds APKWS System Development and Demonstration (SD&D) program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75-inch unguided rockets.			

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7				R-1 ITEM NOMENCLATURE 0205604N TACTICAL DATA LINKS				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	5.109	4.226	25.003					
2126 ATDLS Integration	5.109	4.226	25.003					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Program Element (PE) develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs.

ATDLS Integration Program develops new and improved capabilities for Navy Link-16 users. The Navy Link 16 Network Program consists of three increments.

Increment I funded continued fielding of Link 16 maintenance updates for additional warfare areas and development of automated network management aids.

Increment II funds the Dynamic Network Management (DNM) capability and the implementation of the Link 16 DNM Networks on Navy shore, shipboard, and airborne Link 16 terminals, including associated ship platforms. DNM will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements. DNM consists of different capabilities including new terminal protocols Time Slot Reallocation (TSR) Receipt Compliance (RC) (TSR RC) and TSR with Combined Network Participation Groups (CNPg). The DNM capabilities will be incorporated into Next Generation Command and Control Processor (NGC2P).

Increment III funds the following activities: (1) development and implementation of Crypto Modernization (CM), Frequency Remapping (FR), and Enhanced Throughput (ET) capability into Link 16 terminals and integration into shore, shipboard (NGC2P), and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (2) development, integration, testing, and fielding of additional stacked networks (formerly Multinetting Phase I) and concurrent multinetting (formerly Multinetting Phase II); and (3) Developmental Test / Operational Test (DT/OT) of all Navy platform modifications.

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

Justification of FY10 Requirements:

Increment II - Funding will provide for the platform integration efforts of Increment II DNM, TSR RC and TSR CNPG, as well as conducting Developmental Testing and Operational Assessment.

Increment III - In support of National Security Agency (NSA Policy 3-9) and Joint Chiefs of Staff mandate (Chairman of the Joint Chiefs of Staff Instruction (CJCSI) Notice 6510.02), funding will provide for modernization of the cryptologic algorithm used in Link 16 terminals by initiating development of programmable crypto capability to load and store multiple cryptologic algorithms. Non-compliance will result in loss of Link 16 as crypto keys for non-compliant systems will no longer be available. Additionally, FR is required by Department of Transportation to be able to continue realistic training in the US. All Link 16 terminals are required to have this capability to support Link 16 interoperability.

Funds will provide for Increment III technology demonstration and development for additional stacked networks (formerly Multinetting Phase I), CM, FR, and ET.

Activities also include shore, shipboard, current Navy JTIDS airborne platforms integration studies, and analysis and efforts related to Federal Aviation Administration (FAA) spectrum certification requirements for Tactical Data Links.

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-7	R-1 ITEM NOMENCLATURE 0205604N TACTICAL DATA LINKS	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	5.408	4.247	4.827
FY10 President's Budget	5.109	4.226	25.003
Total Adjustments	-0.299	-0.021	20.176

Summary of Adjustments

Program Adjustments	0.000	0.000	20.500
Congressional Adjustments	0.000	-0.009	0.000
Rate/Misc Adjustments	-0.299	-0.012	-0.324
Subtotal	-0.299	-0.021	20.176

Schedule:

ATDLS (project 2126) -

TSR RC IOC now included under INC 2 IOC and moved from Q1 FY09 to Q3 FY11.
 TSR RC OT and Multinetting Phase I OT now included under INC 2 DT/OT and moved from Q4 FY08 to Q2 FY11.
 Multinetting Phase II DT now included under INC 3 DT and moved from Q3 FY10 to Q4 FY14.
 Multinetting Phase II OA now included under INC 3 DT/OA and moved from Q3 FY11 to Q2 FY15.

Technical:

ATDLS (project 2126) -

The National Security Agency (NSA Policy 3-9) and Joint Chiefs of Staff mandate (Chairman of the Joint Chiefs of Staff Instruction (CJCSI) Notice 6510.02), require modernization of the cryptologic algorithm used in Link 16 terminals. In FY10, development of programmable crypto capability will be initiated to load and store multiple cryptologic algorithms. Non-compliance will result in loss of Link 16 as crypto keys for non-compliant systems will no longer be available. Additionally, FR is required by Department of Transportation to be able to continue realistic training in the US. All Link 16 terminals are required to have this capability to support Link 16 interoperability.

Exhibit R-2, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205604N TACTICAL DATA LINKS			PROJECT NUMBER AND NAME 2126 ATDLS INTEGRATION				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost		5.109	4.226	25.003					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Program Element (PE) develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs.

ATDLS Integration Program develops new and improved capabilities for Navy Link-16 users. The Navy Link 16 Network Program consists of three increments.

Increment I funded continued fielding of Link 16 maintenance updates for additional warfare areas and development of automated network management aids.

Increment II funds the Dynamic Network Management (DNM) capability and the implementation of the Link 16 DNM Networks on Navy shore, shipboard, and airborne Link 16 terminals, including associated ship platforms. DNM will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements. DNM consists of different capabilities including new terminal protocols Time Slot Reallocation (TSR) Receipt Compliance (RC) (TSR RC) and TSR with Combined Network Participation Groups (CNPg). The DNM capabilities will be incorporated into Next Generation Command and Control Processor (NGC2P).

Increment III funds the following activities: (1) development and implementation of Crypto Modernization (CM), Frequency Remapping (FR), and Enhanced Throughput (ET) capability into Link 16 terminals and integration into shore, shipboard (NGC2P), and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (2) development, integration, testing, and fielding of additional stacked networks (formerly Multinetting Phase I) and concurrent multinetting (formerly Multinetting Phase II); and (3) Developmental Test / Operational Test (DT/OT) of all Navy platform modifications.

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

Justification of FY10 Requirements:

Increment II - Funding will provide for the platform integration efforts of Increment II DNM, TSR RC and TSR CNPg, as well as conducting Developmental Testing and Operational Assessment.

Increment III - In support of National Security Agency (NSA Policy 3-9) and Joint Chiefs of Staff mandate (Chairman of the Joint Chiefs of Staff Instruction (CJCSI) Notice 6510.02), funding will provide for modernization of the cryptologic algorithm used in Link 16 terminals by initiating development of programmable crypto capability to load and store multiple cryptologic algorithms. Non-compliance will result in loss of Link 16 as crypto keys for non-compliant systems will no longer be available. Additionally, FR is required by Department of Transportation to be able to continue realistic training in the US. All Link 16 terminals are required to have this capability to support Link 16 interoperability.

Funds will provide for Increment III technology demonstration and development for additional stacked networks (formerly Multinetting Phase I), CM, FR, and ET.

Activities also include shore, shipboard, current Navy JTIDS airborne platforms integration studies, and analysis and efforts related to Federal Aviation Administration (FAA) spectrum certification requirements for Tactical Data Links.

Exhibit R-2a, RD TEN Project Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205604N TACTICAL DATA LINKS		PROJECT NUMBER AND NAME 2126 ATDLs INTEGRATION
(U) B. Accomplishments/Planned Program				
Link 16 Network (Formerly Dynamic Network Management (DNM))		FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost		5.109	4.226	25.003
FY08 Accomplishments: Continued development of Dynamic Network Management (DNM) capabilities. Obtained Link 16 Network Acquisition Decision Memorandum (ADM). Conducted DNM platform integration and developmental testing. Developed DNM integrated logistics support products. FY09 Plan: Continue development of DNM capabilities. Complete DNM integrated logistics support products. Test and evaluate DNM capabilities in the Next Generation Command & Control Processor (NGC2P), Multifunctional Information Distribution System (MIDS) on Ship (MOS), Joint Tactical Information Distribution System (JTIDS), and associated ship and air platforms. Conduct Link 16 Network Increment II DNM Critical Design Review (CDR). Develop Link 16 Network integrated logistics support products. FY10 Plan: Conduct Increment II DNM Time Slot Reallocation (TSR) Receipt Compliance (RC) / Combined Network Participation Groups (CNPg) Developmental Test (DT). Conduct Increment II DT / Operational Assessment (DT/OA). Conduct Increment II platform integration efforts for DNM, TSR RC, and TSR CNPg. Conduct Increment III platform integration studies including shore, shipboard, and current Navy JTIDS airborne (E-2C and EP-3) platform integration studies and analysis. Conduct Increment III technology demonstration and development for additional stacked networks (formerly Multinetting Phase I), Crypto Modernization (CM), Frequency Remapping (FR), and Enhanced Throughput (ET). Begin development and technology demonstration preparation for Increment III, CM, FR, ET, additional stacked networks (formerly Multinetting Phase I), and concurrent multinetting (formerly Multinetting Phase II). Conduct analysis and efforts related to Federal Aviation Administration (FAA) spectrum certification requirements for Tactical Data Links. Develop Link 16 Network integrated logistics support products.				

Exhibit R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009										
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N TACTICAL DATA LINKS		PROJECT NUMBER AND NAME 2126 ATDLS INTEGRATION											
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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN LI 2614 ATDLS</td> <td>3.835</td> <td>14.164</td> <td>7.314</td> <td>25.313</td> </tr> </tbody> </table> SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits. RELATED RDT&E: Not applicable. D. ACQUISITION STRATEGY: The Dynamic Network Management (DNM) Time Slot Reallocation (TSR) Receipt Compliance (RC) (TSR RC) / Combined Network Participation Groups (CNPg) will be incorporated into NGC2P and will utilize the contract for NGC2P. Remaining DNM development efforts will utilize an existing development contract with BAE Systems, Data Link Solutions LLC and Warner Robins Consolidated Software Support Activity. E: MAJOR PERFORMERS: Data Link Solutions LLC (BAE Systems / Rockwell Collins), Wayne, NJ. Major performer for DNM development. Space & Naval Warfare Systems Command Systems Center (SPAWARSYSCEN), San Diego, California. Performs as lead laboratory for DNM development, systems engineering, integration and test and evaluation. Northrop Grumman DMS, Reston, VA / San Diego, CA for NGC2P integration. Naval Air Systems Command (NAVAIRSYSCOM), Patuxent River, MD for air platform integration. Warner Robins Consolidated Software Support Activity, Warner Robins, GA for Link 16 development. F: METRICS: Earned Value Management and Technical Performance Measures are 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>Total Cost</u>	OPN LI 2614 ATDLS	3.835	14.164	7.314	25.313
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>Total Cost</u>										
OPN LI 2614 ATDLS	3.835	14.164	7.314	25.313										

Exhibit R-2a, RDTEN Project Justification

Exhibit R-3 Cost Analysis							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N/BA-7			0205604N TACTICAL DATA LINKS			2126 ATDLS 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			Cost to Complete	Total Cost	Target Value of Contract
MIDS F/A-18 Integration	WX	Various	153.119								153.119	153.119
TADIL-J System Engineering	WX	SPAWARSYSCEN, San Diego, CA	28.233								28.233	28.233
TADIL-J System Engineering	Various	Various	4.654								4.654	4.654
MIDS on Ship	CPIF	BAE Systems, Wayne, NJ (DLS)	15.944								15.944	15.944
MIDS on Ship	Various	Various	44.331								44.331	44.331
Performance Upgrades	WX	SPAWARSYSCEN, San Diego, CA	14.213								14.213	14.213
Performance Upgrades	Various	Various	5.236								5.236	5.236
Air Defense System Integrator	CPFF	APC, Austin, TX	2.059								2.059	2.059
Dual Net Link-11	WX	Various	1.866								1.866	1.866
Korean Air Defense Sys Impr	CPFF	JHU/APL, Laurel, MD	0.900								0.900	0.900
DNMFL Prototypes	Various	Various	2.127								2.127	2.127
JSS Software Dev and Integration	FFP	Various	8.778								8.778	8.778
JSS Software Dev and Integration	CPAF/FFP	Northrop Grumman DMS, Reston, VA	33.022								33	33
JSS Systems Engineering	CPFF	Galaxy Scientific, Arlington, VA	0.769								0.769	0.769
JSS Systems Engineering	WX	SPAWARSYSCEN, San Diego, CA	2.719								2.719	2.719
JSS Systems Engineering	Various	Various	0.383								0.383	0.383
CLIP Dev	WX	SPAWARSYSCEN, San Diego, CA	4.103								4.103	4.103
CLIP Dev	Various	Various	8.736								8.736	8.736
CLIP SW Dev	CPAF/IF	Northrop Grumman DMS, Reston, VA	30.361								30.361	30.361
CLIP Lead Platform Integration	CPFF	Lockheed Martin Corp, Moorestown, NJ	0.000								0.000	0.000
TDL Training SW Dev	WX	NAVAIR Training Sys Div, Orlando, FL	1.605								1.605	1.605
DNM System Engineering & Integration	WX	SPAWARSYSCEN, San Diego, CA	17.306	1.496	11/08	0.429	11/09			Continuing	Continuing	Continuing
DNM Development	CPFF	Northrop Grumman DMS, Reston, VA	3.747								3.747	3.747
DNM Development	MIPR	Warner Robbins AFB, GA	1.585	0.102	11/08	0.178	11/09			Continuing	Continuing	Continuing
DNM Development	CPIF	BAE Systems, Wayne, NJ (DLS)	3.927			0.355	11/09				4.282	4.282
DNM Host Platform Integration Sys Eng	CPFF	SeaPort-E	1.000	0.100	11/08						1.100	1.100
DNM Systems Engineering	Various	Various	4.475	0.250	Various	1.460	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	Various	BAE Systems, Wayne, NJ (DLS)	0.000	0.000		2.300	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	Various	SPAWAR, San Diego, CA	0.000	0.000		2.120	11/09				2.120	2.120
Link 16 Network Development	RX	NAVAIR, Patuxent River, MD	0.000	0.000		0.550	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	MIPR	NSA, Fort Meade, MD	0.000	0.000		0.300	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	WX	SPAWARSYSCEN, San Diego, CA	0.000	0.000		1.438	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	MIPR	Warner Robbins AFB, GA	0.000	0.000		0.250	11/09			Continuing	Continuing	Continuing
Link 16 Network Development	Various	Various	0.000	0.000		4.750	11/09			Continuing	Continuing	Continuing
Link 16 Network Systems Engineering	CPFF	Various	0.000	0.000		3.018	11/09			Continuing	Continuing	Continuing
Link 16 Network Systems Engineering	WX	SPAWARSYSCEN, San Diego, CA	0.000	0.000		1.528	11/09			Continuing	Continuing	Continuing
Subtotal Product Development			395.198	1.948		18.676						
Remarks:												

Exhibit R-3, Project Cost Analysis

Exhibit R-3 Cost Analysis								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N/BA-7			0205604N TACTICAL DATA LINKS			2126 ATDLS 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			Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various	4.025								4.025	4.025
MIDS F/A-18 T&E	WX	SPAWARSYSCEN, San Diego, CA	12.774								12.774	12.774
MIDS F/A-18 T&E	Various	Various	11.706								11.706	11.706
MIDS on Ship T&E	PD	OPTEVFOR, Norfolk, VA	0.092								0.092	0.092
MIDS on Ship T&E	WX	SPAWARSYSCEN, San Diego, CA	1.340								1.340	1.340
MIDS Test Assets	SS/CPAF/IF	MIDSCO, Fairfield, NJ	6.594								6.594	6.594
JSS T&E	WX	SPAWARSYSCEN, San Diego, CA	0.553								0.553	0.553
JSS T&E	WX	OPTEVFOR, Norfolk, VA	0.442								0.442	0.442
JSS T&E	WX	NCTSI, San Diego, CA	0.131								0.131	0.131
JSS Test Articles	CPAF/FFP	Northrop Grumman DMS, Reston, VA	3.536								3.536	3.536
JSS Test Articles	WX	SPAWARSYSCEN, San Diego, CA	0.553								0.553	0.553
CLIP T&E	WX	OPTEVFOR, Norfolk, VA	0.186								0.186	0.186
CLIP T&E	WX	SPAWARSYSCEN, San Diego, CA	6.314								6.314	6.314
CLIP T&E	CPFF	SAIC, Virginia Beach, VA	0.730								0.730	0.730
DNM T&E	WX	SPAWARSYSCEN, San Diego, CA	9.436	0.384	11/08	1.517	11/09			Continuing	Continuing	Continuing
DNM T&E	WX	OPTEVFOR, Norfolk, VA	0.214	0.100	11/08	0.250	11/09			Continuing	Continuing	Continuing
DNM T&E	WX	Various	2.210	0.261	Various						2.471	2.471
DNM T&E	CPFF	SAIC, Virginia Beach, VA	1.198								1.198	1.198
DNM T&E	CPAF/FFP	ViaSat, Carlsbad, CA	0.900								0.900	0.900
ATDLS T&E Support	CPFF	SAIC, Virginia Beach, VA	1.200	0.292	11/08						1.492	1.492
Link 16 Network T&E Support	WX	SPAWARSYSCEN, San Diego, CA	0.000	0.000		0.055	11/09			Continuing	Continuing	Continuing
Subtotal T&E			64.134	1.037		1.822						
Engineering Support and Travel	Various	Various	19.128	1.241	Various	4.505	Various			Continuing	Continuing	Continuing
Subtotal Management			19.128	1.241		4.505						
Remarks:												
Total Cost			478.460	4.226		25.003						

Exhibit R-3, Project Cost Analysis

Exhibit R-4, Schedule Profile

Exhibit R-4a, Schedule Detail							DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E,N/BA-7		0205604N TACTICAL DATA LINKS					2126 ATDLS INTEGRATION		
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010				
DNM Platform Integration Test		Q3							
DNM Platform Integration Test			Q1						
DNM DT			Q2						
DNM ADM			Q2						
DNM Platform Integration Test			Q3						
Link 16 Network Increment 2 System Requirements Review				Q2					
Link 16 Network Increment 2 Preliminary Design Review				Q3					
Link 16 Network Increment 2 Critical Design Review				Q4					
Link 16 Network Increment 2 Operational Test Readiness Review					Q3				
Link 16 Network Increment 2 Development Test					Q3				
Link 16 Network Increment 2 Development Test / Operational Assessment					Q4				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION			
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	16.478	22.441	41.803				
1916 / Surface ASW System Improvement	9.509	21.643	41.803				
9999 / CONGRESSIONAL ADDS	6.969	0.798	0.000				

A. MISSION DESCRIPTION:

The objective of this Program Element (PE) is to significantly improve existing Surface Ship Undersea Warfare (USW) sonar system capabilities through quick and affordable development/integration of emergent, transformational technologies in support of Littoral Anti-Submarine Warfare (ASW), Theater ASW, Mine Reconnaissance, and overall Sea Shield efforts required to pace the threat.

Project 1916's primary mission is to improve AN/SQQ-89(V) Measures Of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program' dated 31-Jan-05, Test and Evaluation Master Plan 801 and 802-2 (TEMP 801 & TEMP 802-2)). This project takes advantage of the AN/SQQ-89(V) Open System Architecture (OSA) and Acoustic Rapid Commercial-Off-The-Shelf (COTS) Insertion (ARCI) initiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar bistatics (Echo Tracker Classifier - ETC), an ARCI passive Anti-Submarine Warfare (ASW) processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (CG59-73 Baseline 3 and 4) and DDG51 (DDG51-112 FLT I/II/III) class ships. The Open Architecture (OA) (level 3 compliant) of the AN/SQQ-89A(V)15 system drives the Advanced Processor Build (APB)/Advanced Capability Build (ACB) spiral development process and provides budget flexibility to make COTS/OA technology solutions and ARCI-type initiatives affordable. This will be accomplished via the incorporation of select Pre-Planned Product Improvements (P3I) and emergent, transformational ASW technologies delivered to the AN/SQQ-89(V) prime integrator every two years.

Project 1916 also includes funding for the Surface Ship Enhanced Measurement Program (SSEMP), which will measure the performance of existing and new Surface Ship ASW combat systems and enables data based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios.

Project 1916 also includes funding, starting in FY 2009, for the Surface ASW Synthetic Training (SAST) program (under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative), including the development of a high fidelity acoustic simulation of a surface ship sonar. This effort will accelerate the implementation and integration of the Submarine Multi-Mission Team Trainer (SMMTT) Navy Continuous Training Environment (NCTE) solution/baseline to the surface ship paradigm.

FY 2008 Congressional Add - Project 9C60A included FY 2008 Congressional Add funding for 'Advanced Materials for Acoustic Window Applications'. Funding is being used to study the feasibility of replacing existing sonar window materials with a material that has the potential to provide a Total Ownership Cost (TOC) reduction of three (3) to five (5) times for acoustic windows used on Navy surface combatants such as the DDG 51 and DDG 1000 Class vessels, while improving mission readiness and acoustic performance.

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7				R-1 ITEM NOMENCLATURE 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION			
FY 2008/2009 Congressional Adds - Project 9C61A included FY 2008/2009 Congressional Add funding for 'Long Range Synthetic Aperture Sonar for ASW'. Funding will be used to initiate processor prototype system architecture, requirements modeling, and performance predictions for an ASW Synthetic Aperture Sonar system utilizing the current Navy sonar assets of an AN/SQS-53 hull mounted sonar and the MFTA.							
B. PROGRAM CHANGE SUMMARY:							
Funding:	FY 2008	FY 2009	FY 2010				
FY09 President's Budget	18.117	21.720	28.455				
FY10 President's Budget	16.478	22.441	41.803				
Total Adjustments	-1.639	0.721	13.348				
(U) Summary of Adjustments							
Congressional Rescissions	0.000	0.000	0.000				
Congressional Adjustments	-0.014	0.798	0.000				
SBIR/STTR/FTT Assessment	-0.275	0.000	0.000				
Program Adjustments	-1.350	0.000	14.000				
Rate/Misc Adjustments	0.000	-0.077	-0.652				
Total	-1.639	0.721	13.348				
C. OTHER PROGRAM FUNDING SUMMARY:							
Related RDT&EN:							
PE 0603553N Surface ASW, Project 1704 Undersea Warfare							
Line Item No. and Name	FY 2008	FY 2009	FY 2010				Total Cost
OPN BLI 2136 AN/SQQ-89 Surface ASW Combat System	31.844	101.859	111.093				244.796
OPN BLI 0900 DDG Modernization	52.694	165.008	142.262				359.964
OPN BLI 0960 CG Modernization	216.031	165.165	315.323				696.519
D. ACQUISITION STRATEGY:							
- Completed AN/SQQ-89A(V)15 Surface Ship ASW Combat System Build 0 Pre-Production Prototype, performed installation, conducted DT&E, and Initial IOT&E 4Q FY 2005. Via Advanced Processor Build (APB)/Advanced Capability Build (ACB) spiral development process, incorporate evolutionary and transformational technologies into AN/SQQ-89A(V)15 production systems (planned for CGs 59-73 and DDGs 51-112) at scheduled intervals to pace the threat.							
- Awarded new, competitive contract for AN/SQQ-89(V) prime system integrator in FY 2007.							

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	R-1 ITEM NOMENCLATURE 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION	
E. MAJOR PERFORMERS: - Advanced Acoustic Concepts (AAC), NY - Small Business Innovative Research (SBIR) Phase III contract for common acoustic processor, Acoustic Intercept (ACI), Supportability Functional Segment (SuPFS), Mission Planning Services (MPS), and Surface CAUSS (Common Airborne Undersea Sensor System) Functional Segment (SCFS) improvements within the AN/SQQ-89A(V)15 USW Combat System. - Analysis, Design & Diagnostics (AD&D), FL - SBIR Phase III contract for Marine Mammal Detection and Mitigation (MMDM) improvements within the AN/SQQ-89A(V)15 USW Combat System. - Applied Methods (AM), VA - SBIR Phase III contract for common acoustic processor, Data Fusion Functional Segment (DFFS), and towed array/Beamformer Functional Segment (BFFS), BFFS/Recording Functional Segment (RecFS) common architecture, and RecFS improvements within the AN/SQQ-89A(V)15 USW Combat System. - General Dynamics - Advanced Information Systems (GD-AIS), VA - SBIR Phase III contract for common acoustic processor, Sensor Performance Prediction Functional Segment (SPPFS), Passive Acoustic Functional Segment (PAFS), Torpedo Recognition Alertment Functional Segment (TRAFS), and Low Frequency Multi-static Functional Segment (LFMFS) improvements within the AN/SQQ-89A(V)15 USW Combat System. - Johns Hopkins University/Applied Physics Laboratory (JHU/APL), MD - Design, development, and integration of MFTA and Torpedo Detection Classification and Localization (TDCL) improvements within the AN/SQQ-89A(V)15 USW Combat System; SSEMP participation in experiment planning, conduct, data reconstruction and post-exercise analysis; implementation/integration of Surface ASW Synthetic Training development program. - Lockheed Martin (LM), NY - Prime AN/SQQ-89(V) USW Combat System integrator, production lead, and System Design Agent (SDA); Undersea Warfare Control Functional Segment (UCFS), Hull Passive Processing Functional Segment (HPPFS), and Common System Services Functional Segment (CSSFS) improvements within the AN/SQQ-89A(V)15 USW Combat System. - Naval Sea Systems Command, Newport (NUWC/NPT), RI - AN/SQQ-89(V) USW Combat System and Surface ASW Synthetic Training Technical Design Agent support; SSEMP participation in experiment planning, conduct, data reconstruction and post-exercise analysis. - Naval Sea Systems Command, Carderock, (NSWC/CD) MD - SPPFS improvements within the AN/SQQ-89A(V)15 USW Combat System; Surface ASW Synthetic Training development program Technical Design Agent support. - Sedna Digital Solutions, VA - System/software design/development for synthetic signature generation in support of the Surface ASW Synthetic Training development program. - University of Texas/Applied Research Laboratory (UT/ARL), TX - Design, development, and integration of Mid Frequency Active Functional Segment (MFAFS) and SPPFS improvements within the AN/SQQ-89A(V)15 USW Combat System; SSEMP participation in experiment planning, conduct, data reconstruction and post-exercise analysis; implementation/integration of Surface ASW Synthetic Training development program.		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION			PROJECT NUMBER AND NAME 1916/Surface ASW System Improvement		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	9.509	21.643	41.803				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Surface ASW Systems Improvements Project will support essential performance enhancements to AN/SQQ-89(V) and Surface Ship Sonar Systems. This project will improve AN/SQQ-89(V) MOP by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program' dated 31-Jan-05), Test and Evaluation Master Plan 801 and 802-2 (TEMP 801 & TEMP 802-2). This project will take advantage of the AN/SQQ-89(V) OSA and ARCI initiatives to develop and integrate a MFTA with active sonar bistatics (ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (CG59-73 Baseline 3 and 4) and DDG51 (DDG51-112 FLT I/II/IIA) class ships. This project has delivered the AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype, performed installation on board CG73, and conducted subsequent Developmental Test & Evaluation (DT&E) and Initial Operational Test & Evaluation (IOT&E) where the system was found 'Operationally Effective' by Command Operational Test and Evaluation Force (COMOPTEVFOR). The OSA and high performance COTS processing hardware on ships fielded with the AN/SQQ-89A(V)15 combat system provides an opportunity to integrate select P3I as well as emergent, transformational ASW technological improvements that were previously unachievable. The Undersea Warfare (USW) suites on these ships will require periodic upgrades to remain effective well into the 21st century and to pace the threat. Software upgrades target capability increases in high interest areas as prescribed by the Fleet and captured in campaign analysis. To achieve this, this project will package and deliver incremental upgrades every two years to the AN/SQQ-89A(V)15 production program via an Advanced Processor Build (APB) spiral development process (APB-09, APB-11, APB-13, etc.) by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral, reduced manning on AN/SQQ-89(V) equipped ships (operator efficiency upgrades via the implementation of robust embedded data record and replay capability and active/passive sonar simulation/stimulation), Detection/Classification/Localization active/passive processing upgrades (passive sonar automated detection and classification processing bell-ringers from the ASW Community-of-Interest, detect and track thru maneuvers, integration of MH-60R mission systems with the AN/SQQ-89A(V)15 combat system, integration of Mid-Frequency active detection improvements, false-alarm rate reduction, clutter reduction, and integration of ASW Community-of-Interest improved acoustic intercept and small-object avoidance), ASW Multi-Sensor integration (acoustic similar-source fusion and implementation of integrated shipboard system data, and ASW combat display architecture and reduced watch-team operational concept implementation), distributed engagement management (Network Centric Enterprise Services implementation, new displays and decision aids, ASW Community-of-Interest model capabilities implementation), marine mammal detection and mitigation, Multi-Static Active ASW, Multi-Frequency Acoustic Communications (MF ACOMMS) between Surface Combatants and Submarines, new RAPTOR radar processing, and upgraded technologies such as algorithm improvements, increased Passive Narrow Band (PNB) frequency, improved Extended Echo Ranging (EER), and beamformer improvements. A rigorous testing program is also required to ensure that these performance enhancements are operationally effective and suitable.							

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION	PROJECT NUMBER AND NAME 1916/Surface ASW System Improvement
Project 1916 also includes funding for the Surface Ship Enhanced Measurement Program (SSEMP), which will measure the performance of existing and new Surface Ship ASW combat systems and enables data based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios. Project 1916 also includes funding, starting in FY 2009, for the Surface ASW Synthetic Training (SAST) program (under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative), including the development of a high fidelity acoustic simulation of a surface ship sonar based on the Improved Performance Sonar (IPS) baseline. This effort will accelerate the implementation and integration of the Submarine Multi-Mission Team Trainer (SMMTT) Navy Continuous Training Environment (NCTE) solution/baseline to the surface ship paradigm for high fidelity passive simulation, improvement of active acoustics, development of a rapid acoustic reconstruction capability, and to ensure FST interoperability via the On-Board Trainer (OBT)/Battle Force Tactical Trainer (BFTT). SAST capability will be fielded throughout the force, via ACB updates to the AN/SQQ-89A(V)15 system, while spiraling in additional ASW sensors, as well as full High Level Architecture (HLA)/NCTE interoperability.		

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION	PROJECT NUMBER AND NAME 1916/Surface ASW System Improvement	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
SQ-89A(V)15 Surface Ship ASW Advanced Processor Build (APB) Development	5.809	10.443	23.103
RDT&E Articles Quantity	0	0	0
FY08-10: Develop enhancements to the AN/SQ-89A(V)15 OSA via the integration of transformational technologies through an Advanced Processor Build (APB) spiral development process. Items include hull-mounted Acoustic Intercept (ACI) sensor, ACI performance predictions and signal injection capabilities, Marine Mammal Detection and Mitigation (MMDM) capability, hull array adaptive beamformer and towed array shape compensated beamformer improvements via the Beamformer Functional Segment (BFFS), Mid-Frequency Active (MFA) Cooperative Organic Mine Defense (COMID) mine avoidance upgrades, MFA rapid replay and multi-waveform tracker, Hull Passive Functional Segment (HPPFS) improvements, Sensor Performance Prediction Functional Segment (SPPFS) improvements, Low Frequency Multi-Static Functional Segment (LFMFS) improvements, Undersea Warfare Control Functional Segment (UCFS) improvements, Supportability Functional Segment (SuPFS) improvements, Recording Functional Segment (ReCFS) improvements, Common System Services/Mission Package Services (CSS/MSS) improvements, full bandwidth towed array passive ASW and automated Torpedo Detection, Classification, and Localization (TDCL) algorithm improvements (active/passive) within the Torpedo Recognition and Alertment Functional Segment (TRAFS) necessary to extend detection ranges and reduce false alert/alarm rates, new Data Fusion Functional Segment (DFFS) sensor to reduce the number of displays required for system operation, Multi-Frequency Acoustic Communications (MF ACOMMS) development, integration of MH-60R mission systems with the AN/SQ-89A(V)15 combat system, Extended Echo Ranging (EER) "Distant Thunder" integration into the AN/SQ-89A(V)15 Surface Common Airborne Undersea Sensor System (CAUSS) Functional Segment airframe sensor processing suite, explosive source integration with AN/SQ-89A(V)15 processes, simplification of displays and active processing, incorporation of all Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) features, and a Sonar Logger capability to significantly reduce operator data logging requirements. These items will be integrated and delivered to the CG47 and DDG51 class AN/SQ-89A(V)15 backfit production programs via Advanced Capability Build (ACB) updates. FY08-10: Resolve/troubleshoot issues/deficiencies that arise from AN/SQ-89(V) Surface Ship ASW Test & Evaluation program. Rapidly address and correct problems/deficiencies in processing, capability or operations within the following areas within the AN/SQ-89(V) USW combat system architecture; sensor processing, acoustics, MMDM, fire control, contact management, performance prediction, operator productivity and on-board training, MFTA, Digital Fire Control Interface (DFCI), Remote Mine-Hunting System (RMS), MFA processing, and adaptive beamforming.			
	FY 2008	FY 2009	FY 2010
AN/SQ-89(V) Surface Ship ASW Test & Evaluation Program	0.700	0.700	0.700
RDT&E Articles Quantity	0	0	0
FY08-10: Provide AN/SQ-89(V) Surface Ship ASW test and evaluation planning support, System Assessment Team (SAT) analysis, update Test & Evaluation Master Plan (TEMP) to reflect the AN/SQ-89A(V)15 APB/ACB spiral development program, coordinate and conduct at-sea tests/trial demonstrations of AN/SQ-89(V) systems and associated APB/ACB/Technology Insertion (TI) capabilities, provide performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using MOP and Measures Of Effectiveness (MOE) methods.			

CLASSIFICATION:		UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION		PROJECT NUMBER AND NAME 1916/Surface ASW System Improvement
		FY 2008	FY 2009	FY 2010
Surface Ship Enhanced Measurement Program (SSEMP)		3.000	3.000	3.000
RDT&E Articles Quantity		0	0	0
FY08-10: Measure the performance of existing and new Surface Ship ASW combat systems and data based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios. Evaluate the effectiveness of the transition of processing improvements in the surface ship sonar system. Evaluate system operational performance and identify performance deficits that need to be addressed by system processing improvements, employment modifications, and/or training improvements. Establish baseline performance and compare operational performance to the predicted sensor performance to establish performance deficit/gain metrics. Analyze the sonar employment in the operational setting and report results for improvement of training/employment guidance. Perform Fleet exercise data reconstruction and post-test analysis each year. Conduct selected at-sea data collection activities by providing planning support, ship riders, and analyst support. Evaluate prototype sonar employment tactics, sonar processing and automation algorithms, and communication protocols for the detection, classification, tracking, and intra-Fleet hand-off to Fleet ASW assets, and provide summary reports to document results.				
		FY 2008	FY 2009	FY 2010
Surface ASW Synthetic Training (SAST) Development Program		0.000	7.500	15.000
RDT&E Articles Quantity		0	0	0
FY09-10: Begin development of a high fidelity acoustic simulation of a surface ship sonar based on the Improved Performance Sonar baseline under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative. Accelerate the implementation and integration of the Submarine Multi-Mission Team Trainer (SMMTT) Navy Continuous Training Environment (NCTE) solution/baseline to the surface ship paradigm for high fidelity passive simulation, improvement of active acoustics, development of a rapid acoustic reconstruction capability, and to ensure SAST interoperability via the On-Board Trainer (OBT)/Battle Force Tactical Trainer (BFTT). SAST capability will be fielded throughout the force, via ACB updates to the AN/SQQ-89A(V)15 system, while spiraling in additional ASW sensors, as well as full High Level Architecture (HLA)/NCTE interoperability.				

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION					PROJECT NUMBER AND NAME 1916/Surface ASW System 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
SQQ-89 S/W Development/Integration	C/CPFF	AAC, NY	2.508			0.400	JAN-09	4.590	NOV-09		7.498	0.000
SQQ-89 S/W Development/Integration	WR	NAVSEA/DAHLGREN, VA	0.835			1.702	DEC-08	0.520	NOV-09		3.057	0.000
SQQ-89 S/W Development/Integration	C/CPFF	AM, VA	6.801			0.900	DEC-08	3.987	NOV-09		11.688	0.000
SQQ-89 S/W Development/Integration	C/CPFF	GD-AIS, VA	9.206			1.212	JAN-09	4.304	NOV-09		14.722	0.000
SQQ-89 S/W Development/Integration	C/CPFF	JHU/APL, MD	1.535			0.742	MAR-09	0.760	DEC-09		3.037	0.000
SQQ-89 S/W Development/Integration	C/CPFF	LOCKHEED MARTIN, NY	1.205			2.355	DEC-08	3.170	NOV-09		6.73	0.000
SQQ-89 S/W Development/Integration	WR	NAVSEA/CARDEROCK, MD	0.200			0.200	DEC-08	0.520	NOV-09		0.92	0.000
SQQ-89 S/W TDA Support	WR	NAVSEA/NEWPORT, RI	1.618			0.990	NOV-08	1.050	NOV-09		3.658	0.000
SQQ-89 S/W Development/Integration	C/CPFF	UT/ARL, TX	1.824			0.681	DEC-08	2.558	DEC-09		5.063	0.000
SQQ-89 S/W Development/Integration	WR	VAR, VAR	0.748			0.777	NOV-08	1.147	NOV-09		2.672	0.000
SAST Development/Integration	C/CPFF	JHU/APL, MD	0.000			0.802	DEC-08	3.750	DEC-09		4.552	0.000
SAST Development/Integration	WR	NAVSEA/CARDEROCK, MD	0.000			5.391	DEC-08	3.750	NOV-09		9.141	0.000
SAST Development/Integration	WR	NAVSEA/NEWPORT, RI	0.000			0.450	NOV-08	2.250	NOV-09		2.7	0.000
SAST Development/Integration	C/CPFF	SEDNA, VA	0.000			0.000		4.500	NOV-09		4.5	0.000
SAST Development/Integration	C/CPFF	UT/ARL, TX	0.000			0.857	DEC-08	0.750	DEC-09		1.607	0.000
Subtotal Product Development			26.480			17.459		37.606			81.545	0.000
Remarks:												
SSEMP Conduct/Test/Data Evaluation	C/CPFF	JHU/APL, MD	1.905			1.905	DEC-08	1.905	DEC-09		5.715	0.000
SSEMP Conduct/Test/Data Evaluation	WR	NAVSEA/NEWPORT, RI	0.456			0.456	NOV-08	0.456	NOV-09		1.368	0.000
SSEMP Conduct/Test/Data Evaluation	C/CPFF	UT/ARL, TX	0.639			0.639	DEC-08	0.639	DEC-09		1.917	0.000
SQQ-89 IV&V/SAT/TEMP Assess./Update	WR	NAVSEA/NEWPORT, RI	0.576			0.350	NOV-08	0.350	NOV-09		1.276	0.000
SQQ-89 DT/OT/Miscellaneous T&E	WR	VAR	0.775			0.350	NOV-08	0.350	NOV-09		1.475	0.000
Subtotal Test and Evaluation			4.351			3.700		3.700			11.751	0.000
Remarks:												
Program Management Support	C/CPAF	BAE SYSTEMS, MD	1.075			0.384	NOV-08	0.397	NOV-09		1.856	0.000
Program Office Travel	ALLOT	NAVSEA PEO IWS5, DC	0.329			0.100	NOV-08	0.100	NOV-09		0.529	0.000
Subtotal Management Services			1.404			0.484		0.497			2.385	0.000

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 7		0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION					1916/Surface ASW System 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
Remarks:												
Total Cost			32.235			21.643		41.803			95.681	0.000

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION			PROJECT NUMBER AND NAME 1916/Surface ASW System Improvement		
Schedule Profile		FY 2008	FY 2009	FY 2010			
SQQ-89A(V)15 System Integ. Baseline Review (SIBR)		3Q					
SQQ-89A(V)15 System Integration Design Review (SIDR)		4Q					
SQQ-89A(V)15 ACB-09 Certification		1Q-3Q					
SQQ-89A(V)15 ACB-09 Software Qualification Test (SQT)		4Q					
SQQ-89A(V)15 ACB-11 Dev./Step Eval./PRT/Integ./Cert.		4Q	1Q-4Q	1Q-3Q			
SQQ-89A(V)15 ACB-11 SQT				4Q			
SQQ-89A(V)15 ACB-13 Dev./Step Eval./PRT/Integ./Cert.				4Q			
Surface ASW Synthetic Trng. (SAST) ACB-11 Func. Seg. Integ.			1Q-4Q	1Q-3Q			
SAST ACB-11 SQT				4Q			
Surface Ship Enhanced Measurement Program (SSEMP)		2Q-4Q	1Q-4Q	1Q-4Q			
SQQ-89A(V)15 ACB-09 Prdtn. S/W Delivery to Integrator			1Q				
SQQ-89A(V)15 DDG51 Class FLT IIA Backfit Install			3Q-4Q	1Q,4Q			
SQQ-89A(V)15 DDG51 Class FLT I/II Backfit Install				3Q			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205620N/SURFACE ASW COMBAT SYSTEM INTEGRATION	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Advanced Materials for Acoustic Window Applications	6.198	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY 2008 Congressional Add: Study the feasibility of replacing existing sonar window materials with a material that has the potential to provide a Total Ownership Cost (TOC) reduction of three (3) to five (5) times for acoustic windows used on Navy surface combatants such as the DDG 51 and DDG 1000 Class vessels, while improving mission readiness and acoustic performance. A full-scale, prototype composite AN/SQS-53C sonar window is currently being built as a first-article window. Based on the lessons learned from the first-article window produced, a second-article window is planned to be installed on a decommissioned (test-ship) Surface Combatant. After subsequent at-sea testing, data analysis, and refined modeling & simulation, a third-article window will be installed, tested, and analyzed, on an in-service Surface Combatant (DDG51 Class).			
	FY 2008	FY 2009	FY 2010
Long Range Synthetic Aperture Sonar for ASW	0.771	0.798	0.000
RDT&E Articles Quantity	0	0	0
FY 2008/2009 Congressional Adds: Initiate processor prototype system architecture, requirements modeling, and performance predictions for an ASW Synthetic Aperture Sonar system utilizing the current Navy sonar assets of an AN/SQS-53 hull mounted sonar and the MFTA. A Synthetic Aperture Sonar has the potential to significantly reduce false alarms and eliminate clutter from current US Navy ASW sonar systems. The creation of a synthetic longer array will provide acoustically derived images of contacts at extended ranges supporting the initial detection and rapid classification of ASW threats most notably irrespective of Doppler and in environments of high clutter. It does this through the synthetic formation of an aperture that provides narrow beams and constant resolution with range. This allows the formation of an image of the physical shape and aspect of the contact allowing the rejection of non ASW threat shapes as clutter while identifying high probability ASW threats.			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0205632N/MK-48 ADCAP			
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	19.720	26.123	28.438				
0366 / MK 48 ADCAP	17.406	15.751	28.438				
9999 / CONGRESSIONAL ADDS	2.314	10.372	0.000				

A. MISSION DESCRIPTION:

A. (U) Mission Description and Budget Item Justification:

MK-48 ADCAP (Advanced Capability) Research, Development, Test and Evaluation (RDT&E) program executes spiral development of weapon performance improvements in three development product areas: (1) Common Broadband Advanced Sonar System (CBASS), (2) Advanced Processor Builds (APBs), and (3) Torpedo Technology Insertion. The budget enables Acquisition Category (ACAT) III development to address Chief of Naval Operations (CNO) defined capability-based requirements and mission needs. This Program Element (0205632N/0366) is tied to development programs that leverage a joint United States/Australia Armaments Cooperative Project (ACP) to develop MK-48 ADCAP CBASS; and Future Naval Capability (FNC) technologies developed by the Office of Naval Research (ONR).

(U) Countermeasure (CM) sophistication and availability on the open market directly affects ADCAP kill proficiency and its ability to counter rapidly evolving threats. The focus of the MK-48 ADCAP torpedo Research and Development (R&D) program for FY01 and out shifted from being primarily concentrated on Software Block Upgrade (BUG) efforts towards coordinated hardware upgrades, rapid Commercial-Off-the-Shelf (COTS) insertion, and APBs to rapidly upgrade the ADCAP to counter evolving threats and maintain robust performance. The CBASS program developed and fielded a broadband sonar capable of identifying CMs and discriminating them from the target. CBASS developed 22 test articles (2 test vehicles and 20 Engineering Development Models (EDMs)). CBASS met Milestone II requirements on 6 March 1998 and received Milestone Decision Authority (MDA) approval to proceed into the Engineering and Manufacturing Development (EMD) phase. CBASS Phase I received Full Rate Production (FRP) decision in June 2006. Initial Operational Capability (IOC) occurred during FY06. The Commonwealth of Australia, Royal Australian Navy (RAN) is participating to jointly develop CBASS torpedo and signed an ACP Agreement March 2003. The intent of the CBASS program was to achieve improvements in shallow water torpedo performance.

(U) The MK-48 ADCAP torpedo R&D program focuses on two specific areas near term: Torpedo APBs and broadband sonar capability. The CNO continues to stress shallow water (less than 600 feet) as a critical operating area to counter third world diesel electric submarines. Torpedo testing in shallow water has demonstrated that in-service ADCAP has less than full capability in this difficult environment. However, this testing, in conjunction with laboratory simulation efforts, has shown that significant performance improvements can be made by implementing changes to weapon tactics and software algorithms. Development, implementation, and testing of these changes is being accomplished under the Torpedo APB program. This program also leverages the RAN joint torpedo program and FNC technologies developed by the ONR in the areas of torpedo broadband signal processing, tactics processing, and alertment. The Torpedo APB program also will incorporate MK-54 Lightweight torpedo algorithms and tactics software to create a Common Torpedo Development program. Future APB software builds will utilize the common torpedo software to deliver software and tactics to both the MK-48 ADCAP and MK-54 Lightweight torpedoes.

CLASSIFICATION:		UNCLASSIFIED							
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)									DATE May 2009
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				
RDTEN/BA 7					0205632N/MK-48 ADCAP				
(U) The Torpedo Technology Insertion program will provide for evolutionary torpedo improvements and upgrades (including the transition and testing of advanced technologies from the R&D community (6.2/6.3 and contractors). This approach will incorporate developmental testing of the FNC transitioning technologies for ADCAP upgrades in the areas of torpedo sensors, weapon/platform connectivity, warhead lethality, speed and depth. These efforts will continue torpedo development investment at a lower cost and shorter term than traditional torpedo programs. (U) Both FNC technologies and MK-54 Lightweight torpedo developments will be transitioned into ADCAP through Technology Insertion packages. Priorities for Technology Insertion are a new array to improve torpedo effectiveness, advanced processing, and advanced counter-countermeasure capability.									
B. PROGRAM CHANGE SUMMARY:									
Funding:					FY 2008	FY 2009	FY 2010		
FY09 President's Budget					19.952	15.879	15.560		
FY10 President's Budget					19.720	26.123	28.438		
Total Adjustments					-0.232	10.244	12.878		
(U) Summary of Adjustments									
Congressional Rescissions					0.000	0.000	0.000		
Congressional Adjustments					0.000	10.329	0.000		
SBIR/STTR/FTT Assessment					-0.210	0.000	0.000		
Program Adjustments					-0.022	-0.039	13.407		
Rate/Misc Adjustments					0.000	-0.046	-0.529		
Total					-0.232	10.244	12.878		
Funding remark: Torpedo APB FY10 funding increase provides necessary resources to complete Spiral 4 effort and initiate Spiral 5; funds the torpedo countermeasures (CM) required to meet testing requirements for Spiral 4; and funds the MK48 share of the Submarine Launched Acoustic Countermeasure Emulator (SLACE). No hardware is being procured. Schedule remarks: APB Spiral 4 slipped due to unavailability of fleet assets and specific nature of scenarios and locations needed for Developmental Testing (DT)/Operational Testing (OT). Due to the adjustment of testing plans, additional time needed. Technology Insertion is being delayed two years due to a reduction in CBASS Technology Insertion funding in FY09 and FY10.									
C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. and Name		FY 2008	FY 2009	FY 2010					
MK-48 ADCAP MODS WPN/PE0204284N/BA-3/BLI 3225		72.858	52.889	61.608					

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	R-1 ITEM NOMENCLATURE 0205632N/MK-48 ADCAP	
D. ACQUISITION STRATEGY: Sole Source Production Contract awarded in FY04 for MK-48 ADCAP MODS, Lightweight MK-54, and Common Broadband Advanced Sonar System (CBASS) kits, including Royal Australian Navy (RAN) units. E. MAJOR PERFORMERS: Naval Undersea Warfare Center (NUWC) Division Newport; Newport, RI - System Integrator and Software Developer. Continued integration and development testing of CBASS hardware and software components and test equipment. Raytheon awarded Sole Source Production Contract for MK-48 ADCAP MODS, Lightweight MK-54, and CBASS kits, including RAN units. Commander Operational Test and Evaluation Force (COTF) - Test Planning, Independent Operational Evaluation.		

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP			PROJECT NUMBER AND NAME 0366/MK 48 ADCAP		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	17.406	15.751	28.438				
RDT&E Articles Qty	0	2	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Notes: Articles reflect: FY09: delivery of final report and completion of software build for Advanced Processor Build (APB) Spiral 1. A. (U) Mission Description and Budget Item Justification: MK-48 Advanced Capability (ADCAP) Research, Development, Test and Evaluation (RDT&E) program executes spiral development of weapon performance improvements in two development product areas: (1) Advanced Processor Builds (APBs), and (2) Torpedo Technology Insertion. The budget enables Acquisition Category (ACAT) III development to address Chief of Naval Operations (CNO) defined capability-based requirements and mission needs. This Program Element (0205632N/0366) is tied to development programs that leverage a joint United States/Australia Armaments Cooperative Project (ACP) to develop MK-48 ADCAP; and Future Naval Capability (FNC) technologies being developed by the Office of Naval Research (ONR).							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP	PROJECT NUMBER AND NAME 0366/MK 48 ADCAP	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
TORPEDO APB	15.601	15.251	24.098
RDT&E Articles Quantity	0	1	0
FY08 - Operational testing (OT) of Spiral 1 Torpedo APB software build (\$345K) planned for release in FY09 which provides full Spiral 1 capability and torpedo effectiveness gain. Continue Spiral 4 development (\$15,256K). Improves shallow water performance and increases the probability of kill.			
FY09 - Completion of OT and Software Build for Spiral 1 Torpedo APB (\$100K). Continue development of APB Spiral 4 in preparation for software release (\$15,151K). Improves shallow water performance and increases the probability of kill.			
FY10 - Continue development of APB Spiral 4 in preparation for software release (\$23,998K). Initiate development of APB Spiral 5 in preparation for software release (\$100K).			
	FY 2008	FY 2009	FY 2010
OPERATIONAL TEST SUPPORT	0.250	0.500	4.340
RDT&E Articles Quantity	0	1	0
FY08 - Conduct analysis for test and evaluation efforts prior to APB Spiral 1 release (\$125K). Improves shallow water performance and increases probability of kill. Develop APB Spiral 4 Test Evaluation Master Plan (TEMP) (\$125K).			
FY09 - Complete APB Spiral 1 OT and analysis and deliver final report (\$200K). Provide for accreditation requirements and conduct analysis relating to APB Spiral 4 Software release (\$300K). Improves shallow water performance and increases probability of kill.			
FY10 - Provide for accreditation requirements and conduct analysis relating to APB Spiral 4 Software release.			
	FY 2008	FY 2009	FY 2010
TECHNOLOGY INSERTIONS	1.555	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY08 - Continue development of Technology Insertion #1 and support plan for an Insensitive Munitions (IM) warhead. Improves shallow water performance and increases probability of kill.			
FY09 - No work being performed due to program adjustments.			
FY10 - No work being performed due to program adjustments.			

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP					PROJECT NUMBER AND NAME 0366/MK 48 ADCAP					
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	WR	NUWC NPT	11.615			0.000	N/A	0.000	N/A			
Primary Hardware Development	Various	Various	5.777			0.000	N/A	0.000	N/A			
Subtotal Product Development			17.392			0.000		0.000				
Remarks: Various - TBD; Primary hardware development activity to be selected after evaluation of technologies from various vendors.												
Software Development	WR	NUWC NPT	10.622			0.760	OCT-08	0.770	OCT-09			
Software Development	Various	Various	19.039			2.100	DEC-08	2.100	DEC-09			
Integrated Logistics Support	WR	NUWC NPT	0.892			0.671	OCT-08	0.680	OCT-09			
Systems Engineering	WR	NUWC NPT	16.113			0.473	OCT-08	0.577	OCT-09			
Systems Engineering	Various	Various	0.110			0.000	N/A	0.000	N/A			
Subtotal Support Costs			46.776			4.004		4.127				
Remarks:												
Test & Evaluation	WR	NUWC NPT	4.778			1.925	OCT-08	5.560	OCT-09			
Operational Test & Evaluation	WR	Operational Test Force	1.250			0.500	NOV-08	4.340	NOV-09			
Modeling & Simulation	WR	NUWC NPT	4.361			1.269	OCT-08	2.999	OCT-09			
Modeling & Simulation	C,CPFF	ARL / PSU	2.700			1.000	DEC-08	1.000	DEC-09			
Test & Evaluation	WR	NUWC KPT	4.114			6.456	OCT-08	9.785	OCT-09			
Subtotal Test and Evaluation			17.203			11.150		23.684				
Remarks:												
Program Management Support	Various	Alion Science	1.353			0.451	OCT-08	0.451	OCT-09			
Travel	WR	NAVSEA	0.213			0.146	OCT-08	0.176	OCT-09			
Subtotal Management Services			1.566			0.597		0.627				
Remarks:												
Total Cost			82.937			15.751		28.438				

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4, SCHEDULE PROFILE							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP			PROJECT NUMBER AND NAME 0366/MK 48 ADCAP		
<u>PROGRAM EFFORTS</u>		FY08	FY09	FY10			
Torpedo Advanced Processor Builds (APB)		ADCAP Performance Upgrades based on Fleet Priorities (DT/OT testing scheduled prior to each software spiral delivery)					
			APB Spiral 1 △				
CBASS Development							
APB Developmental Testing/Operational Testing (DT/OT)				DT/OT △→			
Torpedo Technology Insertion		SP/SD					

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL						DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP			PROJECT NUMBER AND NAME 0366/MK 48 ADCAP			
Schedule Profile		FY 2008	FY 2009	FY 2010				
Torpedo Advanced Processor Build								
Software Development		1Q-4Q	1Q-4Q	1Q-4Q				
Software Delivery			2Q					
Developmental Testing/Operational Testing (DT/OT)				3Q-4Q				
CBASS Development		1Q-4Q	1Q-4Q	1Q-4Q				
Software Delivery								
Torpedo Technology Insertion								
Study Phase/System Development (SP/SD)		1Q-4Q						
System Requirements Review (SRR)								
Developmental Testing (DT)								
Developmental Testing/Operational Testing (DT/OT)								

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205632N/MK-48 ADCAP	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9C63A/Torpedo Post-Launch Communications System	1.543	0.798	0.000
RDT&E Articles Quantity	0	0	0
Torpedo Post-Launch Communications System Congressional add funds the MK-48 Heavyweight Torpedo (HWT) Post-Launch Communication System. This project will include evaluation of innovative flex-hose/guidance wire concepts using hydrodynamic computational simulation models, as well as fabrication, test and evaluation of prototype hardware to demonstrate compliance with Fleet requirements. Higher bandwidth post-launch communication technologies will also be developed, tested and evaluated, and a new flex-hose will be designed. The new flex-hose concept is required to provide high reliability operation over the entire speed and depth operating envelope of the submarine including shallow water, near bottom engagements.			
	FY 2008	FY 2009	FY 2010
9C62A/Digital Data for Weapons System Readiness	0.771	0.000	0.000
RDT&E Articles Quantity	0	0	0
Digital Data for Weapons System Readiness Congressional add funds for the MK-48 ADCAP Heavyweight Torpedo (HWT). This program will develop secure data sharing, analysis, and collaboration methodologies and tools for Heavyweight Torpedo programs. These funds will be used to organize and facilitate collaborate projects between industry, governmental facilities, and academia in order to improve the use and sharing of digital data in order to increase overall weapon system readiness.			
	FY 2008	FY 2009	FY 2010
9E16A/ Undersea Weapons Enterprise Common Automated Test	0.000	3.191	0.000
RDT&E Articles Quantity	0	0	0
Automatic Test Equipment for the MK-48 Heavyweight Torpedo (HWT) will evaluate the application of common automated test sets at the Heavyweight Torpedo depot and Intermediate Maintenance Activities (IMAs). Funding will provide for the development, fabrication, and evaluation of new automatic test technologies and products that will consolidate unique test sets while reducing maintenance costs and significantly improving the testing and evaluation of torpedo hardware.			
	FY 2008	FY 2009	FY 2010
9E17A / ASW Enhancements	0.000	6.383	0.000
RDT&E Articles Quantity	0	0	0
Anti-Submarine Warfare (ASW) Enhancements will develop and design new MK-48 ADCAP torpedo sub-assemblies required due to the depletion and obsolescence of many existing torpedo components.			

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							May 2009	
APPROPRIATION/BUDGET ACTIVITY							R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7							0205633N, AVIATION IMPROVEMENTS	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	95.667	99.416	135.840					
0601 ACFT HANDLING & SERVICE EQUIPMENT	2.508	3.212	3.269					
0852 CONSOLIDATION AUTOM SPT SYS	7.307	8.922	27.704					
1041 ACFT EQ REPL/MAINT PROG	2.421	3.690	4.105					
1355 A/C ENG COMP IMP (CIP)	56.277	59.421	78.340					
3189 DIGITAL I-TER	5.078							
3190 MULTI-PURPOSE BOMB RACKS	3.323	11.845	22.422					
9999 CONGRESSIONAL ADDS	18.754	12.326						

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft. Project 0852 - Consolidated Automated Support System (CASS) is a standardized Automated Test Equipment (ATE) with computer assisted, multi-function capabilities to support the maintenance of aircraft subsystems and missiles. Project 1041 - Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) is the only Navy program that provides engineering support for in-service out-of-production aircraft equipment, and provides increased readiness at reduced operational and support cost. Project 1355 - Aircraft Engine Component Improvement Program (CIP) develops reliability and maintainability (R&M) and safety enhancements for in-service Navy aircraft engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, fuel systems, fuels, and lubricants. Project 3189 - Digital I-TER will develop an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B. Project 3190 - is the Multi-Purpose Bomb Rack (MPBR). The MPBR will replace the BRU-41/42/33/55 and provide use for both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18E/F as part of this project. Project 9999 is Congressional Adds.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2008	FY 2009	FY 2010
Previous President's Budget	117.805	122.906	105.116
Current BES	95.667	99.416	135.840
Total Adjustments	-22.138	-23.490	30.724

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments	-11.600	-23.219	
SBIR/STTR/FTT Assessments	-0.902		
Program Adjustments	-9.516		30.755
Rate/Misc Adjustments	-0.120	-0.271	-0.031
Subtotal	-22.138	-23.490	30.724

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0205633N, AVIATION IMPROVEMENTS	

Schedule:

Project 0601 - The Turboprop Engine Test Instrumentation (TETI) Team conducted a technology assessment of TETI requirements compared to the existing Shaft Engine Test Instrumentation (SETI) Engine Test System capability and determined that the SETI System met all data acquisition, test and measurement requirements of TETI. Therefore the decision was made to utilize the SETI hardware for the TETI Program and develop the Test Program Set (TPS) software for each turboprop engine variant utilizing in-house engineering at NAVAIR Lakehurst. This technology assessment and decision process to use SETI and develop TPS's in-house caused the two quarter slip in the TETI schedule. However, this acquisition strategy is expected to yield cost savings and a reduction in the TETI schedule going forward, by eliminating the contracting process and contractor monitoring required for development of TETI and each TPS. During the TETI requirements technology assessment that was conducted in FY07, it was determined that the existing SETI Engine Test System hardware would meet the data acquisition, test and measurement requirements of TETI. Therefore, an ECP development effort is being conducted to implement TETI. The development of the Test Program Set (TPS) software for each turboprop engine variant and any additional hardware will be accomplished utilizing in-house engineering at NAVAIR Lakehurst. Due to the anticipated complexity of the Next Generation Munitions Handler (NGMH), and the potential for the production contract award going to a different contractor than the original developer (Foster Miller Corporation), additional time was incorporated into the schedule to require the production contractor to build and successfully performance test several Low Rate Initial Production (LRIP) units before Full Rate Production (FRP) is initiated. At the FY08 Support Equipment Prioritization Conference, held March 2008, the Shipboard Firefighter Vehicle (SFV) Program was shifted 18 months earlier than originally reported/planned. Schedules added for Aircraft Spotting Dolly (ASD) and Hydraulic Test Stand (HTS).

Project 0852 - Schedule change to better leverage the Agile Rapid Global Combat Support (ARGCS) ACTD Technology.

Project 1041 - Systems Engineering Revitalization: includes additional dollars for Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA)) for a Navy-wide systems engineering initiative. Several projects starting in FY10 were results of investigations to be high value on return on investment.

Project 1355 - Not Applicable

Project 3189 - Digital-ITER milestone schedule has changed due to the realignment of funds to the AV-8B program (PE 0604214N, Project 2634). The Digital-ITER program funds development efforts to upgrade the bomb rack. Due to the changes in acquisition strategy the funding realigned to the AV-8B program is for hardware development and integration efforts.

Project 3190 - The Multi Purpose Bomb Rack (MPBR) was designated as a "new start" program for FY2008. Delays caused a restructure of the effort. Subsequent Congressional marks further pushed MS B into the 4Q FY09 and reduced the threshold aircraft platform from F/A-18A-F to F/A-18E/F only. RFP release to occur in April 2009 with contract award planned in the 4Q 2009.

Project 9999 - Congressional Adds.

Technical: Not Applicable

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 0601 , COMMON GROUND EQUIPMENT		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
0601 , COMMON GROUND EQUIPMENT	2.508	3.212	3.269				
RDT&E Articles Qty	2	2	3				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Common Ground Equipment is a Naval Aviation project to apply new technology to common support equipment necessary to support multiple systems/aircraft within the Navy. The common support equipment items developed with this budget are briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.							

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 0601, ACFT HANDLING & SERVICE EQUIPMENT		
B. Accomplishments/Planned Program				
Next Generation Munitions Handler (NGMH)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.022	0.507	1.700	
RDT&E Articles Quantity	1	1	1	
R&D program to develop robotic weapons loader for both ship and shore with primary focus on targeting future weapons and aircraft. Plan is to support CVNX initiatives and to back-fit current CVs and amphibious ships. Utilize technology features developed under NGMH program. One lab prototype will upload/download munitions in support of sea-based aviation, specifically the CVN-21 environment. It will be a self-powered diesel/electric unit with human amplification technology. Newly developed high-torque electric actuator/motors will provide the robotics. Variable geometry lonator wheels will provide the mobility for the vehicle. Self diagnostics for maintenance analysis will be included for the design.				
Turboprop Engine Test Instrumentation (TETI)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.486	2.355	0.628	
RDT&E Articles Quantity	1	1	1	
The Turboprop Engine Test Instrumentation (TETI) program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turboprop engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of TETI and Test Program Sets (TPS), utilizing the existing Shaft Engine Test Initiative (SETI) technology, and integrate this capability into existing land based engine test systems. This enhanced capability will allow for full performance engine testing of the T56 Series Turboprop engines. An ECP will be developed to upgrade the existing engine test systems.				
Shipboard Firefighting Vehicle (SFV)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		0.350	0.941	
RDT&E Articles Quantity			1	
The Shipboard Firefighting Vehicle (SFV) program objective is to provide a safe reliable and maintainable way to support air capable ships with flight deck fire suppression during flight operations. The acquisition approach is to develop, acquire, validate, deploy and support production utilizing the lessons learned from the current firefighting vehicle and new emerging technology. This will enable integration of this capability into a new firefighting vehicle, which will be fully capable to support the current and future flight deck fire suppression missions.				

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVMENTS	PROJECT NUMBER AND NAME 0601, ACFT HANDLING & SERVICE EQUIPMENT	
C. OTHER PROGRAM FUNDING SUMMARY:			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
APN 070500 Ground Support Equipment Related RDT&E: Not Applicable	260.702	243.458	211.928
D. ACQUISITION STRATEGY:			
This is a non ACAT program. Field activities propose tentative projects. Internal panel merits and selects projects. Field activities develop projects and submit results. Operational Advisory Group (OAG) process selects projects to transition to procurement.			

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDTE, N / BA-7			0205633N, AVIATION IMPROVEMENTS			0601, ACFT HANDLING & SERVICE 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						
Test & Evaluation -EA	Various	Various	0.500										
Subtotal T&E			0.500	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			18.253	3.212		3.269							
Remarks:													

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE:
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N / BA-7					0205633N, AVIATION IMPROVEMENTS					0601, ACFT HANDLING & SERVICE EQUIPMENT			
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones				MS B									
NGMH				△									
Prototype Phase	PROTOTYPE PHASE												
Shipboard Phase					SHIPBOARD PHOTOTYPE PHASE								
Test & Evaluation Milestones													
NGMH													
Development Test	DEVELOPMENTAL TEST												
Operational Test					OPERATIONAL TEST								
Production Milestones													
NGMH													
FRP													
NGMH Deliveries													

R-1 SHOPPING LIST - Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME	
RDT&E, N / BA-7						0205633N, AVIATION IMPROVEMENTS						0601, ACFT HANDLING & SERVICE EQUIPMENT	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones									ECP COMPLETE		FRP DECISION		
TETI									△		△		
Prototype Phase	ECP DEV (TPS & ASSOCIATED HW)												
Radar System Development													
EDM Radar Delivery													
Software 1XXSW Delivery 2XXSW Delivery													
Test & Evaluation Milestones													
TETI	DEVELOPMENTAL TEST												
Development Test									OPERATIONAL TEST				
Operational Test													
Production Milestones													
TETI													
FRP												△	
Production Deliveries												FRP STAY	

R-1 SHOPPING LIST - Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7						PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS						PROJECT NUMBER AND NAME 0601, ACFT HANDLING & SERVICE EQUIPMENT	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones SFV					MS B △								
Prototype Phase					PROTOTYPE PHASE								
Test & Evaluation Milestones SFV													
Development Test													
Operational Test													
Production Milestones SFV (P-25-REP)													
FRP													
SPV Deliveries													

R-1 SHOPPING LIST - Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE:
				May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME
RDT&E, N / BA 7	0205633N, AVIATION IMPROVEMENTS			0601, ACFT HANDLING & SERVICE EQUIPMENT
Schedule Profile	FY 2008	FY 2009	FY 2010	
Schedule Profile				
Schedule Profile - TETI				
ECP Complete			1Q	
ECP (TPS & Associated Hardware)	1Q-4Q	1Q-4Q	1Q	
Developmental Test	1Q-4Q	1Q		
Operational Test		1Q-4Q	1Q-2Q	
Full Rate Production (FRP) Decision			3Q	
Full Rate Production (FRP) Start			4Q	
Schedule Profile - NGMH				
Prototype Phase	1Q-2Q			
Shipboard Prototype Phase	4Q	1Q-4Q	1Q-3Q	
Milestone B	4Q			
Developmental Test	1Q-2Q			
Milestone C (MS C)				
Operational Test	4Q	1Q-4Q	1Q-4Q	
Start Low-Rate Initial Production (LRIP) I				
Low-Rate Initial Production (LRIP) 3 Delivery				
Full Rate Production (FRP) Decision				
Full Rate Production (FRP) Start				
Schedule Profile - SFV				
Prototype Phase		1Q-4Q	1Q-4Q	
Milestone B		1Q		
Developmental Test		3Q-4Q	1Q-4Q	
Milestone C (MS C)				
Operational Test			2Q-4Q	
Start Low-Rate Initial Production (LRIP) I				
Full Rate Production (FRP) Decision				

R-1 SHOPPING LIST - Item No.178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVMENTS			PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
0852, CONSOLIDATED AUTOM SPT SYS	7.307	8.922	27.704					
RDT&E Articles Qty	3	2	2					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
The Consolidated Automated Support System (CASS) project designs and develops modular automated test equipment with computer-assisted, multi-function test capability, standardized hardware, and standard software elements. CASS responds to Fleet Commanders' expressed requirements to correct serious deficiencies in existing automatic test equipment. Program objectives are: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics aircraft weapon systems. The CASS (Consolidated Automated Support System) Modernization project objectives are to modernize legacy CASS systems via technology insertion to overcome obsolescence issues and to mature technologies in preparation of the emerging eCASS (electronic Consolidated Automated Support System) project. The eCASS (electronic Consolidated Automated Support System) project is the system design and development of the latest generation of the US Navy's CASS family of automatic test systems. The legacy CASS system was designed and developed in the 1980's and commenced fielding in 1992. As such, it is reaching the end of its useful life due to obsolescence issues. eCASS is the replacement system for legacy CASS systems, which provides Naval aircraft avionics component maintenance and repair support at Intermediate and Depot maintenance facilities both shore-based and afloat. As a CASS replacement program, the eCASS program objectives remain the same as that of CASS. Specifically: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics aircraft weapon systems. The Test Technology Development project involves analysis, application, maturation, integration and testing of emerging electronic, mechanical and optical test technologies for potential military utility in support of Naval avionics testing and repair. Specific technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared (ATFLIR) electro-optics capabilities, multi-analog test capability to enable functional testing, and modernization elements for the CASS family of automatic test systems.								

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS		
B. Accomplishments/Planned Program				
CASS Station Upgrades	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.200	0.200		
RDT&E Articles Quantity	1	1		
Provides technologies for upgrading CASS stations to test emerging weapon system requirements. Includes development of new test capability and extending existing range accuracies in the time and frequency domains to support low-frequency analog/digital, electro-optic, and radio frequency (RF) systems.				
Electro-Optic Capability	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.319			
RDT&E Articles Quantity	1			
Develops a downsized electro-optic support system to enable Reconfigurable Transportable CASS (RTCASS) to provide support for Marine Air FLIR and LASER Targeting systems.				
CASS Modernization Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	6.788	8.722		
RDT&E Articles Quantity	1	1		
Develops and integrates the technologies that will comprise the Modernization Program for CASS stations, which will be modernized and updated to current testing technologies while maintaining full compatibility with the legacy test program sets. Technologies include: downsized and scalable packaging techniques, multi-lingal runtime capability, interoperability framework and architectures, diagnostics data handling, virtual/synthetic/next-generation instrument concepts and the Agile Rapid Global Combat Support (ARGCS) Advanced Concept Technologies (ACTD).				

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS		
B. Accomplishments/Planned Program (Cont.)				
eCASS Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			26.991	
RDT&E Articles Quantity			1	
Develop, integrate and test an Automatic Test System (ATS) to replace legacy CASS systems. The new ATS will be compatible with and capable of hosting the hundreds of existing Test Programs that are currently utilized on legacy CASS at the Intermediate and Depot levels of maintenance, as well as any emerging Test Programs that may require greater test capability than provided by legacy CASS.				
Test Technology Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			0.713	
RDT&E Articles Quantity			1	
Develops, integrates, and evolves enhanced test capabilities and technologies for insertion into the CASS family of test systems. As weapon system electronics evolve, new test capabilities are required to support advanced systems. Existing test capabilities must be extended in range, accuracy, time and frequency domains in order to sustain the required test accuracy ratios for weapon systems support (the automatic test system must be four times as accurate as the asset being tested).				
	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 178

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-7	0205633N, AVIATION IMPROVMENTS	0852, CONSOLIDATED AUTOM SPT SYS													
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>APN 070500 CASS</td> <td>94.856</td> <td>81.548</td> <td>59.675</td> </tr> <tr> <td>Related RDT&E: Not Applicable</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: Formal test technology reviews with industry are conducted annually (cooperative Joint Services initiative) to define maturity of needed technologies. Further studies are conducted as needed. Procurement strategy is determined by market survey and cooperative opportunities.				<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	APN 070500 CASS	94.856	81.548	59.675	Related RDT&E: Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>												
APN 070500 CASS	94.856	81.548	59.675												
Related RDT&E: Not Applicable															

R-1 SHOPPING LIST - Item No. 178

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-7			0205633N, AVIATION IMPROVEMENTS			0852, CONSOLIDATED AUTOM SPT SYS						
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 Hdw Dev CASS EO	C-CPFF	VARIOUS	5.867								5.867	
Primary Hdw Dev CASS Mod	C-CPFF	VARIOUS	13.544	7.315	04/09						20.859	
Primary Hdw Dev CASS Upgrades	C-CPFF	VARIOUS	1.735	0.200	04/09						1.935	
Primary Hdw Dev eCASS	C-CPFF	TBD				23.673	01/10				23.673	
Primary Hdw Dev Test Technology	C-CPFF	VARIOUS				0.413	03/10				0.413	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			21.146	7.515		24.086					52.747	
Remarks:												
Primary Hdw Dev CASS Mod	WX	VARIOUS	11.308	1.100	01/09						12.408	
Primary Hdw Dev CASS eCASS	WX	VARIOUS				3.100	01/10				3.100	
Primary Hdw Dev Test Technology	WX	VARIOUS				0.200	01/10				0.200	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			11.308	1.100		3.300					15.708	
Remarks												

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N, AVIATION IMPROVEMENTS			0852, CONSOLIDATED AUTOM SPT SYS						
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											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000					0.000	
Remarks:												
Primary Hdw Dev CASS Mod Travel		VARIOUS	1.362	0.307	VARIOUS						1.669	
Primary Hdw Dev eCASS Travel						0.218	VARIOUS				0.218	
Primary Hdw Dev Test Tech Travel						0.100	VARIOUS				0.100	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.362	0.307		0.318					1.987	
Remarks:												
Total Cost			33.816	8.922		27.704				0.000	70.442	
Remarks:												

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME	
RDT&E, N / BA-7						0205633N, AVIATION IMPROVEMENTS						0852, CONSOLIDATED AUTOM SPT SYS	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones CASS Modernization Dev													
Contract Award													
System Development													
Testing													
Acquisition Milestones eCASS Development													
Contract Award													
System Development													
Testing													
Deliveries													

R-1 SHOPPING LIST- Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS		PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS	
Schedule Profile	FY 2008	FY 2009	FY 2010	
Schedule Profile - CASS Modernization Development				
Contract Award		3Q		
System Development		3Q-4Q	1Q-2Q	
Schedule Profile - eCASS Development				
Contract Award			1Q	
System Development			1Q-4Q	
DT-B1 & B2 Testing				
DT-C1 Testing				

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME	
RDT&E, N / BA-7						0205633N, AVIATION IMPROVEMENTS						0852, CONSOLIDATED AUTOM SPT SYS	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
ARGCS													
Contract Award													
System Development													
Testing													

R-1 SHOPPING LIST - Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS
Schedule Profile	FY 2008	FY 2009	FY 2010	
Schedule Profile - ARGCS				
Testing	1Q-4Q			

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 1041, ACFT EQ REPL/MAINT PROG			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
1041 ACFT EQ REPL/MAINT PROG	2.421	3.690	4.105					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Aircraft Equipment Replacement/ Maintenance Improvement Program (AERMIP) is the only Navy program which provides Research, Development, Test & Evaluation (RDT&E) engineering support specifically for in-service, out-of-production aircraft equipment. AERMIP increases readiness through Reliability and Maintainability (R&M) and safety improvements to existing systems and equipment installed in Naval aircraft. It also provides a transition vehicle to deploy Total Ownership Cost (TOC) reduction initiatives through flight-test support and Fleet Test & Evaluation. It meets affordable readiness objectives by providing a cost-effective solution to obsolescence problems encountered when service lives are extended. AERMIP promotes commonality and standardization across aircraft platform lines and among the services through extension of application and use of non-developmental items. AERMIP also decreases life cycle costs through reduced operational and support costs. AERMIP facilitates the Operational, Safety and Improvement Program by applying proven low-risk solutions to current fleet problems. AERMIP also funds high priority flight testing which is not associated with any acquisition or development program under the Flight Test General (FTG) task.								

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENT	PROJECT NUMBER AND NAME 1041, ACFT EQ REPL/MAINT PROG		
B. Accomplishments/Planned Program				
AVIONICS AND WIRING				
	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.140	1.025	1.092	
RDT&E Articles Quantity				
AVIONICS AND WIRING (A) Demonstrate prototype generator system diagnostics and health management system in relevant environment. Demonstrate generator system diagnostics and health management system in aircraft on the ground. Demonstrate diagnostic and prognostic technologies for aircraft batteries in relevant environment Demonstrate these technologies in aircraft on the ground. Qualify high-power smart switching technology to MIL-STD-704 and subject unit to full laboratory and aircraft qualification testing and flight test profiles. Test and evaluate self-wrapping sleeving that provides mechanical and EMI protection. Evaluate cold shrink end caps and tubing. Develop test methods and performance levels for evaluating abrasion resistance properties of composite wire constructions over operating temperature levels. Opportunities and issues arise yearly that demand immediate attention to provide significant benefit or to avert an unanticipated problem. AERMIP actively pursues these issues and opportunities and responds quickly to implement a solution. Products are a qualified material or piece of equipment and the procedures/process required for its implementation. Pursue next generation wiring diagnosis and prognostics methods and prove the applicability to Naval aviation. Address avionics related reliability issues impacting multiple aircraft platforms.				
AIR VEHICLE				
	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.281	1.742	1.775	
RDT&E Articles Quantity				
AIR VEHICLE (B) Improve sand erosion resistance of coated impeller for auxiliary power unit systems. Evaluate promising coating candidates to validate erosion resistance performance versus TiN coating. Design and integrate sand erosion test rig to simulate impeller operation on the aircraft in a sand/dust environment. Redesign and test electric bomb fuse system from aircraft through bomb rack to bomb fusing system. Validate measurement of flaws on bent titanium tubing for hydraulic systems. Validate measurement kit. Test hydraulic fluid replacement with selected hydraulic components. Investigate relationship between degraded heat exchanger performance and air cycle machine failure. Determine methods to identify degraded heat exchangers in the environmental control system such that they can be replaced before air cycle machine failure. Evaluate digital inflation tire reader to measure aircraft tire pressure. Opportunities and issues arise yearly that demand immediate attention to provide significant benefit or to avert an unanticipated problem. AERMIP actively pursues these issues and opportunities and responds quickly to implement a solution. Products are a qualified material or piece of equipment and the procedures/process required for its implementation. Develop new methods of structural repair. Pursue subsystem improvements by increasing component reliability. Qualification and implementation of advanced non-chrome primers with adequate corrosion protection properties.				

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENT	PROJECT NUMBER AND NAME 1041, ACFT EQ REPL/MAINT PROG																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">SE REVITALIZATION</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;"></td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;"></td> <td style="padding: 5px;">0.923</td> <td style="padding: 5px;">0.951</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>					SE REVITALIZATION	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost		0.923	0.951		RDT&E Articles Quantity				
SE REVITALIZATION	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost		0.923	0.951																
RDT&E Articles Quantity																			
SE REVITALIZATION (C) Incorporate systems engineering process approach to achieve satisfactory levels of reliability and maintainability (R&M), successfully demonstrate R&M levels during test and evaluation, and sustain R&M levels throughout the system's life-cycle. Improve technical execution of acquisition programs through reemphasis on systematic technical planning. Create web-based tool to enable process and policy improvement.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">NAE CORROSION IMPROVEMENT</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;"></td> </tr> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">0.287</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>					NAE CORROSION IMPROVEMENT	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost			0.287		RDT&E Articles Quantity				
NAE CORROSION IMPROVEMENT	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost			0.287																
RDT&E Articles Quantity																			
NAE CORROSION IMPROVEMENT (D) Validate and implement aircraft flight line canopy shelters. Field test and implement tape and adhesive remover, which is designed to more effectively remove radome and leading edge boots and tapes and for which current maintenance practices cause component damage and take excessive time. Design, test, and implement Controlled Solidification Investment Cast aluminum gearboxes as alternatives to magnesium alloy gearboxes. Demonstrate and validate conducting paint and sealants with less noble galvanic potential and which provide acceptable electrical performance with much lower propensity to cause corrosion of airframe and components.																			

R-1 SHOPPING LIST - Item No. 178

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-7	0205633N, AVIATION IMPROVEMENT	1041, ACFT EQ REPL/MAINT PROG	
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.			

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

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-4			0205633N, AVIATION IMPROVEMENTS			1041, ACFT EQ REPL/MAINT PROG					
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				
Sys Eng - Avionics/Wiring	WX	NAWCAD, Pax River, MD	2.080	0.927	VARIOUS	0.948	11/09				
Sys Eng - Avionics/Wiring	SSFFP	G E, Niskayuna, NY	1.004								
Sys Eng - Avionics/Wiring	SSFFP	Raytheon, Indianapolis, IN	0.300								
Sys Eng - Avionics/Wiring	CFFP	TBD				0.040	03/10				
Sys Eng - Air Vehicle	WX	NAWCAD, Pax River, MD	3.031	1.243	VARIOUS	1.067	11/09				
Sys Eng - Air Vehicle	WX	FRC, San Diego, CA	0.383	0.075	11/08						
Sys Eng - Air Vehicle	WX	FRC, Cherry Point, NC	0.318								
Sys Eng - Air Vehicle	WX	FRC, Jacksonville, FL	0.322								
Sys Eng - Air Vehicle	CFFP	TBD		0.275	VARIOUS	0.560	04/10				
Sys Eng - Air Vehicle	CFFP	EMA, Lexington Park, MD	0.200								
Sys Eng - SE Revitalization	WX	NAWCAD, Pax River, MD		0.732	12/08	0.768	12/09				
Sys Eng - SE Revitalization	CFFP	TBD		0.184	04/09	0.185	04/10				
Sys Eng - NAE Corrosion	WX	NAWCAD, Pax River, MD				0.262	12/09				
Sys Eng - NAE Corrosion	WX	FRC, San Diego, CA									
Sys Eng - NAE Corrosion	WX	FRC, Cherry Point, NC									
Sys Eng - NAE Corrosion	WX	FRC, Jacksonville, FL									
Subtotal Product Development			7.638	3.436		3.830					
Remarks:											
Studies & Analyses	WX	NADEP, SAN DIEGO CA	0.193								
Studies & Analyses	WX	NAWCAD, Pax River, MD	12.171								
Studies & Analyses - NAE Corrosion	WX	NAWCAD, Pax River, MD				0.025	12/09				
Configuration Management											
Technical Data											
Studies & Analyses											
GFE											
Award Fees											
Subtotal Support			12.364	0.000		0.025					

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-4			0205633N, AVIATION IMPROVEMENTS				1041, ACFT EQ REPL/MAINT PROG						
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	SSFFP	Various	1.859										
Government Engineering Support													
Program Management Support	WX	NAWCAD, Pax River, MD	0.461	0.244	11/08	0.245	11/09						
Travel	WX	NAWCAD, Pax River, MD	0.050	0.010	11/08	0.005	11/09						
Transportation													
SBIR Assessment													
Subtotal Management			2.370	0.254		0.250							
Remarks:													
Total Cost			22.372	3.690		4.105							
Remarks:													

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE:
APPROPRIATION/BUDGET ACTIVITY													May 2009
RDT&E,N / BA-7													
PROGRAM ELEMENT NUMBER AND NAME													
0205633N, AVIATION IMPROVEMENT													
PROJECT NUMBER AND NAME													
1041, ACFT EQ REPL/MAINT PROG													
Fiscal Year	FY 2008				FY 2009				FY 2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Avionics and Wiring:													
Smart Wire													
Arc Fault Circuit Breaker													
ASW-25 Logic Stack													
High-Speed Bus Switching													
A/C Battery Diagnostic & Prognostic System													
Generator System Diagnostics & Health													
Investigate High Value Return on Investment													
Wiring Diagnostics and Prognostics													
Avionics Reliability Enhancement													
Air Vehicle:													
Advanced Non-Chrome Primers													
Imbedded Fire Bottle Condition Sensor													
Improved Corrosion Preventative Compounds													
Corrosion Prevention Control													
Advanced Methods of Structural Repair													
Subsystem Improvement Initiatives													
Sand & Erosion Resistance of APU Impeller													
Electric Bomb Fuze System													
Titanium Tubing for Hydraulic Systems													
Integrated In-Service Reliability Prog													
Investigate High Value Return on Investment													
SE Revitalization:													
Improved Tech Execution of Acq. Programs													
NAE Corrosion Improvement:													
Flight Line Canopy Shelters													
Tape and Adhesive Remover													
Aluminum Gearboxes													
Conducting Paint & Sealants													
Investigate High Value Return on Investment													
Deliveries													

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0205633N, AVIATION IMPROVEMENTS				1041, ACFT EQ REPL/MAINT PROG			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Avionics & Wiring								
Smart Wire	1Q-4Q	1Q-4Q						
Arc Fault Circuit Breaker	1Q-4Q	1Q-4Q						
ASW-25 Logic Stack	1Q-4Q							
High-Speed Bus Switching			1Q-4Q					
Aircraft Battery Diagnostic & Prognostic System			1Q-4Q					
Generator System Diagnostics & Health			1Q-4Q					
Investigate High Value Return on Investment	1Q-4Q	1Q-4Q	1Q-4Q					
Avionics Reliability Enhancements			1Q-4Q					
Wiring and Diagnostics			1Q-4Q					
Air Vehicle								
Advanced Non-Chrome Primers	1Q-4Q							
Imbedded Fire Bottle Condition Sensor	1Q-2Q							
Improved Corrosion Preventative Compounds	1Q-4Q	1Q-4Q	1Q-4Q					
Corrosion Prevention and Control		1Q-4Q	1Q-4Q					
Advanced Methods of Structural Repair		1Q-4Q	1Q-4Q					
Subsystem Improvement Initiatives		1Q-4Q	1Q-4Q					
Sand & Erosion Resistance of APU Impeller			1Q-4Q					
Electric Bomb Fuze System			1Q-4Q					
Titanium Tubing for Hydraulic Systems			1Q-4Q					
Integrated In-Service Reliability Program	1Q-4Q							
Investigate High Value Return on Investment	1Q-4Q	1Q-4Q	1Q-4Q					
SE Revitalization								
Improved Technical Execution of Acq. Programs		1Q-4Q	1Q-4Q					
NAE Corrosion Improvement								
Flight Line Canopy Shelters			1Q-4Q					
Tape and Adhesive Remover			1Q-4Q					
Aluminum Gearboxes			1Q-4Q					
Conducting Paint & Sealants			1Q-4Q					
Investigate High Value Return on Investment			1Q-4Q					

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
1355 A/C ENG COMP IMP (CIP)	56.277	59.421	78.340					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical design and development engineering support to resolve safety, reliability and maintainability deficiencies of in-service Navy aircraft propulsion systems. The highest priority issues CIP addresses concern safety-of-flight deficiencies which account for approximately 80% of CIP efforts. The program also corrects service-revealed deficiencies, improves Operational Readiness (OR) and Reliability and Maintainability (R&M), and reduces platform Life Cycle Cost (LCC). Budgets are allocated across platform-specific teams and multi-platform product support teams based upon long term strategies to achieve safety and affordable readiness goals; the R-3 exhibit details annual portions of those long-term plans. CIP tasks have reduced the rate of in-flight aborts, safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance work hours, and overall cost of ownership. This is accomplished through the maintenance and validation of specification performance, testing to qualify engineering changes, verifying life limits, and improving the inherent reliability of the propulsion system as an integral part of Reliability Centered Maintenance (RCM) initiatives. Historically, the missions, tactics, and environmental exposure of military aircraft systems change to meet new threats or operational demands, and often result in unforeseen problems, which if not corrected, can cause critical safety/readiness degradation, such as those experienced during DESERT SHIELD/DESERT STORM operations due to sand erosion. In addition, new problems arise through actual use during deployment of the aircraft. Development programs, while geared to resolve as many problems as possible before deployment, cannot duplicate actual operations or account for the vast array of environmental and usage variables, particularly when aircraft missions vary from those the aircraft was designed to perform. Therefore, it has been found that CIP can provide an immediate engineering response to these flight-critical problems and accelerated engine testing can avoid potential problems. CIP starts after development and Navy acceptance of the first production article and addresses usage and life problems not covered by warranties. CIP addresses engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, and fuel and lubricant systems. CIP efforts continue over the system's life, gradually decreasing to a minimum level sufficient to maintain the reliability, and decrease the operating costs, of older inventory. CIP is a highly leveraged and cooperative tri-service program with Foreign Military Sales participation.								

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">P3, E2, C2, C130 (T56)</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>6.820</td> <td>6.055</td> <td>5.880</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> P3, E2, C2, C130,(T56) Implement the Engine Monitory System version 7.0 upgrade. Maintain safety margins by investigating turbine coatings and develop new designs, propeller integration efforts with potential propeller designs, perform engine hot section corrosion and fatigue analysis, and bearing improvements. Analysis of redesign for first stage turbine blades on T56-A427 engines. Qualification and verification testing of redesigned first stage turbine blades. Resolve service revealed problem. Work on resolving fuel nozzle choking issue. Resolve design problems in the areas of safety coupling, compressor leakage, generator problems, and electrical wiring problems. Mission updates and life analysis of critical components.					P3, E2, C2, C130 (T56)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	6.820	6.055	5.880		RDT&E Articles Quantity				
P3, E2, C2, C130 (T56)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	6.820	6.055	5.880																
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">E2/C2/C130/P3 (Props)</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>1.863</td> <td>1.646</td> <td>1.500</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> E2/C2/C130/P3 (Props) Incorporate improved blade heaters. Develop improved propeller control system.					E2/C2/C130/P3 (Props)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	1.863	1.646	1.500		RDT&E Articles Quantity				
E2/C2/C130/P3 (Props)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	1.863	1.646	1.500																
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Mature Aircraft (J52)</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>4.111</td> <td>3.500</td> <td>3.400</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> Mature Aircraft (J52) Address the top readiness degraders and AVDLR costs; implement efforts on the J52 engine (EA-6B) ASMET test, perform annual maintenance awareness brief and annual P-408A major engine inspection program. Study and implement solutions to aging aircraft issues and future obsolescence problems. Redesign of diffuser case for increased life. Design and analysis efforts on 4.5 bearing problem on J52 engine (EA-6B). Efforts on life analysis and mission verification for critical components. Evaluate new coatings and seals for turbine areas. Begin ASMET of Pratt Whitney Associates.					Mature Aircraft (J52)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	4.111	3.500	3.400		RDT&E Articles Quantity				
Mature Aircraft (J52)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	4.111	3.500	3.400																
RDT&E Articles Quantity																			

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)																	
B. Accomplishments/Planned Program (Cont.)																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Mature Aircraft (J85)</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>0.998</td> <td>0.910</td> <td>0.890</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Mature Aircraft (J85)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.998	0.910	0.890		RDT&E Articles Quantity				
Mature Aircraft (J85)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.998	0.910	0.890																
RDT&E Articles Quantity																			
Mature Aircraft (J85) Address the top readiness degraders and AVDLR costs; implement efforts on the J85 engine (F-5) ASMET test, perform annual maintenance awareness brief and annual P-408A major engine inspection program. Study and implement solutions to aging aircraft issues and future obsolescence problems.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">H1/H60 (T700)</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>3.891</td> <td>3.363</td> <td>3.900</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					H1/H60 (T700)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	3.891	3.363	3.900		RDT&E Articles Quantity				
H1/H60 (T700)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	3.891	3.363	3.900																
RDT&E Articles Quantity																			
H1/H60 (T700) Advanced Helicopter Transmission Lubricant Program, extended transmission component lives, increased readiness by reducing corrosion, Mission Profile Data Collection and Dynamic Component Life Limit efforts. Time on wing and Mean Time Between Removals (MTBR) cost drivers initiatives including compressor durability, Titanium Nitrates (TiN) coating and three-stage turbine. Efforts in the area of engine power loss, secondary power and wiring issues.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">UH1N (T400)</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>0.674</td> <td>0.500</td> <td>0.380</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					UH1N (T400)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.674	0.500	0.380		RDT&E Articles Quantity				
UH1N (T400)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.674	0.500	0.380																
RDT&E Articles Quantity																			
UH1N (T400) Address top safety concerns as ranked by the OAG and System Safety Working Group, continue to update Navy maintenance manuals, continue to improve time-between-overhaul and reduced impact of high-time parts; T400 Improved Compressor Turbine Stub Shaft, T400 Improved Gas Generator Case Diffuser Inlet, T400 Improved Compressor Coating, T400 Life Management, Study T400 Parts Obsolescence.																			

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)		
B. Accomplishments/Planned Program				
AV-8B (F402)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.073	5.853	5.500	
RDT&E Articles Quantity				
AV-8B (F402) Address top readiness degraders and AVDLR costs; safety of flight issues, engine removal and mission failure drivers, assess life management program issues for engine components. Project included but not limited to: ASMET testing, support of a Fleet Leader Program, Analytical Condition Inspection (ACI), Engine Life Management Program (ELMP) execution and design fixes for any service revealed deficiencies. LPC 1 vane cracking problems and FMU mod problems. Analysis of ASMET engine test.				
H-53/H-46/H-3 (T58/T64)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	8.549	8.262	8.500	
RDT&E Articles Quantity				
H-53/H-46/H-3 (T58/T64) Bleed valve redesign. Working engine design efforts on top cause for engine removals; improve on wing times; addressed top safety concerns as ranked by the Operational Advisory Group (OAG); reliability-centered maintenance program; improve compressor blade retention design; and develop corrosion resistant bearing designs. Improve the mean time between engine removal based upon continued implementation of reliability center maintenance initiatives. Conduct life management analysis to resolve critical rotating component issues based upon engine structural integrity assessments and the master life management plan.				
F-18 C/D/E/F (F414/F404)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	14.852	14.533	16.310	
RDT&E Articles Quantity				
F-18 C/D/E/F (F414/F404) Address top safety issues, readiness degraders, and AVDLR costs; safety of flight issues; engine removal and mission failure drivers; assess life management program issues for engine components. Analysis and redesign of fuel nozzles and control system to resolve sub idle flameout issues. Analysis of combustion linear to determine cause for durability problems. Analysis and redesign of components with service revealed deficiencies.				

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)		
B. Accomplishments/Planned Program				
T-45 (F405)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.785	1.838	2.500	
RDT&E Articles Quantity				
T-45 (F405) Address top safety issues reported from fleet. Analysis and redesign components with service revealed deficiencies.				
V-22 (T406)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.760	1.500	5.200	
RDT&E Articles Quantity				
V-22 (T406) Review safety ECPs and support incorporation safety requirements.				
F-16 (F100)	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	
RDT&E Articles Quantity				
F-16 (F100) RDT&E effort covered under USAF Performance Based Logistics Contract.				

R-1 SHOPPING LIST - Item No. 178

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Multi-Platform Product Support Teams</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>8.901</td> <td>11.461</td> <td>11.889</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Multi-Platform Product Support Teams	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	8.901	11.461	11.889		RDT&E Articles Quantity				
Multi-Platform Product Support Teams	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	8.901	11.461	11.889																
RDT&E Articles Quantity																			
Multi-Platform Product Support Teams Projects designed to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; improve blade and vane repair processes and life cycle support; and improve electrical system product support, wiring, and battery systems. Includes funding for GFE fuel provided in support of engine developmental and qualification testing.																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">F-35 (F135)</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>0.000</td> <td>12.491</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					F-35 (F135)	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	0.000	0.000	12.491		RDT&E Articles Quantity				
F-35 (F135)	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost	0.000	0.000	12.491																
RDT&E Articles Quantity																			
Address safety issues, readiness degraders, and AVDLR costs; safety of flight issues; engine removal and mission failure drivers; assess life management program issues for engine components.																			

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)								
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 colspan="4">Not Applicable</td></tr></tbody></table> D. ACQUISITION STRATEGY: Not Applicable			<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>							
Not Applicable										

R-1 SHOPPING LIST-Item No. 178

UNCLASSIFIED

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-7			0205633N, AVIATION IMPROVEMENTS			1355, A/C ENG COMP IMP (CIP)							
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													
Sys Eng F110 Engine Program	SS-CPAF	GE - OHIO	17.992										
Sys Eng F402 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	5.396	1.814	10/1/2008	1.705	10/1/2009						
Sys Eng F402 Engine Program	SS-CPFF	ROLLS ROYCE - UK	43.084	4.039	12/1/2008	3.795	12/1/2009						
Sys Eng T58/T64 Engine Program	SS-CPFF	GE - MASS	61.425	5.122	10/1/2008	5.270	10/1/2009						
Sys Eng T58/T64 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	15.162	3.140	10/1/2008	3.230	10/1/2009						
Sys Eng J52 Engine Program	SS-CPFF	P & W - FLORIDA	32.292	1.890	10/1/2008	1.836	10/1/2009						
Sys Eng J52 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	7.166	1.610	10/1/2008	1.564	10/1/2009						
Sys Eng T56 Engine Program	SS-CPFF	ROLLS ROYCE - IN	26.274	4.238	2/1/2009	4.116	2/1/2010						
Sys Eng T56 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	18.366	1.817	10/1/2008	1.764	10/1/2009						
Sys Eng F405 Engine Program	SS-CPFF	ROLLS ROYCE - UK	22.183	1.838	12/1/2008	2.500	12/1/2009						
Sys Eng F414 /F404 Engine Program	SS-CPFF	GE - MASS	58.201	10.900	12/1/2008	12.232	12/1/2009						
Sys Eng F414 /F404 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	3.613	3.633	10/1/2008	4.078	10/1/2009						
Sys Eng T700 Engine Program	SS-CPFF	GE - MASS	17.869	2.354	1/1/2009	2.730	1/1/2010						
Sys Eng T700 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	6.747	1.009	10/1/2008	1.170	10/1/2009						
Sys Eng TF34 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	.338										
Sys Eng TF34 Engine Program	SS-CPFF	G.E. OHIO	7.845										
Sys Eng T406 Engine Program	SS-CPFF	ROLLS ROYCE - IN				3.400	12/1/2009						
Sys Eng T406 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	1.600	1.500	10/1/2008	1.800	10/1/2009						
Sys Eng T400 Engine Program	SS-CPFF	P & W - FLORIDA	3.911	.500	12/1/2008	.380	12/1/2009						
Sys Eng J85 Engine Program	SS-CPFF	GE -OK	4.095	.910	11/1/2008	.890	11/1/2009						
Sys Eng F100 Engine Program	VARIOUS	NAWCAD, PAX RIVER MD	.200										
Sys Eng Props Program	SS-CPFF	HAM SUNSTRAND - CON	9.194	1.646	12/1/2008	1.500	12/1/2009						
Sys Eng Contracts under 1.0M	VARIOUS	VARIOUS	16.114										
Sys Eng Lab Fld Activity-1.0 or more	WX	NAWCAD, PAX RIVER MD	160.258	9.424	10/1/2008	9.545	10/1/2009						
Sys Eng Other In-House Spt	VARIOUS	VARIOUS	18.615	.313	10/1/2008	.315	10/1/2009						
GFE*	MILSTRIP	DES/DLA	7.146	1.200	10/1/2008	1.500	10/1/2009						
Sys Eng F135 Engine Program	SS-CPFF	P&W - CONN				12.491	10/1/2009						
Award Fees	SS-CPFF		1.305										
Subtotal Product Development			566.391	58.897		77.811							
GFE includes expected cost of fuel necessary to support engine developmental and qualification testing. Remarks: Total may be off due to rounding.													

R-1SHOPPING LIST-Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1SHOPPING LIST-Item No.178

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N, AVIATION IMPROVEMENTS			1355, A/C ENG COMP IMP (CIP)						
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	3.120	0.053	VARIOUS	0.053	VARIOUS					
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			3.120	0.053		0.053						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	1.447	0.109	VARIOUS	0.112	VARIOUS					
Travel	VARIOUS	NAVAIR, PAX RIVER, MD	0.433	0.055	VARIOUS	0.057	VARIOUS					
Transportation												
SBIR Assessment												
Subtotal Management			1.880	0.164		0.169						
Remarks:												
Total Cost			578.093	59.421		78.340						
Remarks:												

R-1SHOPPING LIST-Item No.178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME 3189, DIGITAL I-TER			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
3189, DIGITAL I-TER	5.078							
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (I-TER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons such as Joint Direct Attack Munition (JDAM). Using existing I-TERs as Government Furnished Material, the electronics tray will be replaced with a more capable electronics package allowing for smart weapons capability. The FY08 funding supports full development of Digital I-TER. FY09 and FY10 funds realigned to PE 0604214N, Project Unit 2634. These funds were realigned to meet the appropriate intent and strategy of upgrading the AV-8B software to ensure the aircraft receives an increased capability while utilizing an upgraded BRU-42 Improved Triple Ejector Rack (I-TER).								

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
3190, MULTI-PURPOSE BOMB RACKS	3.323	11.845	22.422				
RDT&E Articles Qty							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3190- Multi-Purpose Bomb Racks (MPBR): The MPBR will replace the BRU-41 / 42 / 33 / 55 and provide for the use of both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18E / F as part of this project.							

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS													
B. Accomplishments/Planned Program															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">MULTI-PURPOSE BOMB RACK DEVELOPMENT</td> <td style="padding: 2px;">FY 08</td> <td style="padding: 2px;">FY 09</td> <td style="padding: 2px;">FY 10</td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px;">3.323</td> <td style="padding: 2px;">10.213</td> <td style="padding: 2px;">15.440</td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>				MULTI-PURPOSE BOMB RACK DEVELOPMENT	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	3.323	10.213	15.440	RDT&E Articles Quantity			
MULTI-PURPOSE BOMB RACK DEVELOPMENT	FY 08	FY 09	FY 10												
Accomplishments/Effort/Subtotal Cost	3.323	10.213	15.440												
RDT&E Articles Quantity															
Contracts documentation (Statement of Objectives and supplemental guidance, rack specification, engineering verification matrix) is being finalized to support the release of a competitive RFP. Once source selection is complete, the selected vendor will design the MPBR to include all electrical and mechanical interfaces. Rack prototypes will be fabricated and intergration testing will be performed. The vendor will also design and/or modify existing Support Equipment for test the new rack design.															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">MULTI-PURPOSE BOMB RACK SOFTWARE DEV.</td> <td style="padding: 2px;">FY 08</td> <td style="padding: 2px;">FY 09</td> <td style="padding: 2px;">FY 10</td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px;">0.000</td> <td style="padding: 2px;">1.632</td> <td style="padding: 2px;">4.102</td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>				MULTI-PURPOSE BOMB RACK SOFTWARE DEV.	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	0.000	1.632	4.102	RDT&E Articles Quantity			
MULTI-PURPOSE BOMB RACK SOFTWARE DEV.	FY 08	FY 09	FY 10												
Accomplishments/Effort/Subtotal Cost	0.000	1.632	4.102												
RDT&E Articles Quantity															
Begin software development and aircraft integration.															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">MULTI-PURPOSE BOMB RACK TESTING</td> <td style="padding: 2px;">FY 08</td> <td style="padding: 2px;">FY 09</td> <td style="padding: 2px;">FY 10</td> </tr> <tr> <td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 2px;">0.000</td> <td style="padding: 2px;">0.000</td> <td style="padding: 2px;">2.880</td> </tr> <tr> <td style="padding: 2px;">RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>				MULTI-PURPOSE BOMB RACK TESTING	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.880	RDT&E Articles Quantity			
MULTI-PURPOSE BOMB RACK TESTING	FY 08	FY 09	FY 10												
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.880												
RDT&E Articles Quantity															
Provide systems engineering support and begin Developmental Test and Evaluation.															

R-1 SHOPPING LIST - Item No. 178

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-7	0205633N, AVIATION IMPROVEMENTS	3190, MULTI-PURPOSE BOMB RACKS								
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>Not Applicable</td><td></td><td></td><td></td></tr></tbody></table> D. ACQUISITION STRATEGY: The design and development of the MPBR will be a Cost Plus Incentive Fee (CPIF) competitive contract. The aircraft software integration will be done by the F/A-18 Advanced Weapons Laboratory at NAWC WD China Lake and through a Cost Type contract with Boeing, the F/A-18E/F Prime Aircraft Contractor.			<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>							
Not Applicable										

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

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-7			0205633N, AVIATION IMPROVEMENTS			3190, MULTI-PURPOSE BOMB RACKS		
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	CPIF	TBD		5.700	09/09	11.207	12/09	
Subtotal Product Development				5.700		11.207		
Remarks:								
Software Development								
China Lake AWL (Software Build H8)	WX	NAWCWD, CHINA LAKE CA		1.632	05/09	4.102	12/09	
Subtotal Support				1.632		4.102		
Remarks:								

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS		
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	NAWCAD, PATUXENT RIVER MD				0.204	12/09	
Operational Test	WX	COMOPTEVFOR				2.676	12/09	
Subtotal T&E				0.000		2.880		
Remarks:								
Government System Engineering and Support								
Contractor Engineering Support	VARIOUS	VARIOUS		0.376	02/09	0.500	12/09	
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	1.526	1.298	12/08	0.893	12/09	
Government Engineering Support	WX	NSWC, CRANE IN	0.997	2.000	12/08	2.000	12/09	
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	0.800	0.639	12/08	0.640	12/09	
Travel	TO	NAVAIR, PATUXENT RIVER MD		0.200	10/08	0.200	10/09	
Subtotal Management			3.323	4.513		4.233		
Remarks:								
Total Cost								
			3.323	11.845		22.422		
Remarks:								

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7						PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS						PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones					AS	RFP	MS B					
Development											SFR	
											PDR	
Delivery of Test Units												
Test & Evaluation Milestones												
Development Test												
Operational Test												
Production Milestones												
Production Deliveries												

R-1 SHOPPING LIST - Item No. 178

UNCLASSIFIED

UNCLASSIFIED

CLASS Q

[illegible]

R-1 SHOPPING LIST - Item No.	178

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
9999, CONGRESSIONAL ADDS	18.754	12.326						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CONGRESSIONAL ADDS

UNCLASSIFIED

CLASSIFICATION:				
EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS		
B. Accomplishments/Planned Program				
9752A Real-time Weight and Balance System for C-130s	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.100			
RDT&E Articles Quantity				
Real-time Weight and Balance System: This effort is to develop and qualify a real-time measurement weight and balance system for the C-130 to improve safety and speed of dispatch and to reduce costs associated with man-hours and delays.				
9A76A Advance Avionics Miniaturization Program	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.969			
RDT&E Articles Quantity				
Advance Avionics Miniaturization Program: This is a continuation of 9856: This effort is to study and evaluate advanced cooling technologies for integration into existing avionics systems. To develop and demonstrate the capability to take existing avionics capability and re-engineer them into smaller "miniaturized" packages. Capability being addressed is a Detect, See, and Avoid capability for unmanned aerial vehicle autonomous operations.				
9A77A Age Exploration Model Extension	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.936			
RDT&E Articles Quantity				
Age Exploration Model extension program is a continuation of congressional add 9109N: this effort is to develop an Age Exploration Model for Naval aircraft platforms. The model will use existing Naval aircraft data to establish connections between age and reliability, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions and for mitigating risks associated with these decisions. A long-term add that has included many items such as the development and evolution of Knowledge Management System and maintenance data analysis and trending tools for reliability tracking. Efforts in FY07 and FY08 have focused on developing sensor fusion capabilities to allow better utilization of existing Health Usage Monitoring System (HUMS) data.				

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 / BA7	0205633N, AVIATION IMPROVEMENTS	9999, CONGRESSIONAL ADDS		

B. Accomplishments/Planned Program (Cont.)

9A79A Arc Fault Circuit Breaker	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.776	0.997		
RDT&E Articles Quantity				

Arc Fault Circuit Breaker with Arc Location System: This effort is to demonstrate a wireless fault sensor to detect location of wire faults that result in the tripping of the arc fault circuit breaker. To develop and demonstrate the capability to locate the position on the wire of an arcing incident that is sufficient to trip the Arc Fault Circuit Breaker. Miniaturize the capability to be small enough to fit within the existing Arc Fault Circuit Breaker package without impacting the performance of the existing Arc Fault Breaker.

9A80A F/A 18 Avionics Ground Support System	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.552	2.393		
RDT&E Articles Quantity				

This congressional add supports the F/A 18 Avionics Ground Support System.

9A84A Rotor Blade Protection	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.775	0.798		
RDT&E Articles Quantity				

Rotor Blade Protection: The add supports the Joint Aeronautical Logistics Commanders (JALC) initiatives to develop an industry standard for sand and water erosion testing and the ability to model coating designs for desirable erosion properties. This program will provide the first standard for sand and water erosion testing, tools for numerical investigation of protective coatings and adhesives, and transition of repair and overhaul technology to the depots. To develop a model of sand damage to helicopter rotor blades that can be used to improve protection schemes of blades in rework or future developments.

9A85A Sacrificial Film Laminate	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		0.957		
RDT&E Articles Quantity				

Sacrificial Film Laminate: The add supports development of single- and multi-layered sacrificial film laminates for Navy and Marine Corps helicopter windscreens. The effort focuses on the characterization of current windscreens with respect to light transmission and electrostatic properties. An installation technique will be developed that reduces film failure due to installation errors.

CLASSIFICATION:				
EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS		
B. Accomplishments/Planned Program (Cont.)				
9A86A Wireless Sensors for Navy Aircraft	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.544	2.394		
RDT&E Articles Quantity				
The purpose of the add is to perform full scale development and test of a prototype wireless strain sensor primarily for rotorcraft applications. This full scale testing supports a Joint Aeronautical Logistics Commanders (JALC) initiative to benchmark best Condition Based Maintenance (CBM) practices and transition a suite of sensors to airborne applications. Demonstrate the usage of an energy scavenging wireless sensor for structural monitoring within a Navy environment. Effort requires that the wireless data transmission can meet all Information Assurance requirements and still be used for the intended application. A smaller effort with the contractor is part of this project where these sensors are to be demonstrated as radio frequency identification tags usage during F/A-18 manufacturing. Long term plan would be for the contractor to apply sensor during manufacturing and leave in place for Navy usage as structural monitors.				
9C64A Aviation Improvements-Low Observable Aircraft	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.549			
RDT&E Articles Quantity				
Aviation Improvements - Low Observable Aircraft Sealants: Effort to develop aircraft sealants of sufficient strength that are electrically conductive yet resist radar detection. Further develop, optimize, and scale up processing of an electrically conductive sealant that is lighter weight and has improved mechanical properties over existing conductive sealants, but which retains required electrical and mechanical performance capabilities and has the necessary properties including extended shelf life (carrier operation), viscosity (for application) and corrosion protection (saltwater) to make it usable in Naval Aviation environments.				
9C65A Lightweight Composite Structure Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.161	0.798		
RDT&E Articles Quantity				
Lightweight Composite Structures Development for Aerospace Vehicles: The qualification and deployment of complex composite materials for manned and unmanned ground and air vehicles leading to affordable, lightweight composite structures.				

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 / BA7	0205633N, AVIATION IMPROVEMENTS	9999, CONGRESSIONAL ADDS		

B. Accomplishments/Planned Program (Cont.)

9C66A Rapid Repair UV Curable Structural Adhes	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.850	2.393		
RDT&E Articles Quantity				

Rapid Repair Ultraviolet (UV) Curable structural adhesives: Effort to develop structural adhesives that cure in the presence of UV light reducing required maintenance equipment while retaining required adhesive strength.

9C67A Structural Life Tracking	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.542			
RDT&E Articles Quantity				

Structural Life Tracking of Navy and Marine Corps Helicopter Aircraft: Developing and validating a high fidelity customized data collection and analysis protocol for helicopter components that is fully automated. Demonstrate the capability for parts fatigue tracking for military rotary-wing aircraft through structural life tracking of Navy and Marine Corps helicopters.

9E18 Vet Biz Initiative	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		1.596		
RDT&E Articles Quantity				

Vet Biz Initiative: Effort intended to develop service-disabled veteran-owned small businesses so that they can address parts obsolescence and anticipated inventory shortage problems by providing the funding for the non-recurring engineering and qualification required for them to be acceptable manufacturing sources.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0205658N
PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
Total PE	5.843	3.609	3.716

0834 LABORATORY FLEET SUPPORT			
	5.843	3.609	3.716

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Science Advisor Program ensures that the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T), develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. Science Advisors facilitate and disseminate Joint Capabilities Integration and Development System (JCIDS) requirements provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. As a result, Science Advisors provide insight into issues associated with Naval Warfighting Capabilities that influence S&T program decision making. The program develops leaders among civilian scientists and engineers in the Naval Research Enterprise (NRE). Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Naval Science Advisor Program enables continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0205658N
PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

B. PROGRAM CHANGE SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
President's Budget 2009	3.451	3.625	3.748
Congressional Program Reductions	0.000	-0.010	0.000
Program Adjustments	0.000	0.000	-0.034
Rate/Misc Adjustments	0.000	-0.006	0.002
Total Reprogrammings	2.392	0.000	0.000
President's Budget 2010	5.843	3.609	3.716

PROGRAM CHANGE SUMMARY EXPLANATION:

Technical: FY 2008 and out program funds Science Advisors. Execution adjustments fund Science and Technology programs, management, execution and support costs for FY 2008 initiatives.

Schedule: Not applicable.

C. OTHER PROGRAM FUNDING SUMMARY:

Not applicable.

D. ACQUISITION STRATEGY:

Not applicable.

E. PERFORMANCE METRICS:

Goal: Provide leadership with timely S&T advice on issues.

Metric: Monthly reports by Science Advisors to the Office of Naval Research and senior leadership within their assigned commands.

Goal: Provide the optimum technological solutions to achieve Fleet/Force capability requirements.

Metric: Number of capability gaps reduced to technology gaps.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
0834 LABORATORY FLEET SUPPORT	5.843	3.609	3.716

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Science Advisor Program ensures that the F/F helps shape the DoN investment in S&T, develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. Science Advisors facilitate and disseminate JCIDS requirements provided by the F/F Commanders to the OPNAV N091. Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. As a result, Science Advisors provide insight into issues associated with Naval Warfighting Capabilities that influence S&T program decision making. The program develops leaders among civilian scientists and engineers in the NRE. Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Naval Science Advisor Program enables continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
NAVAL SCIENCE ADVISOR PROGRAM	5.843	3.609	3.716

The Science Advisors are a conduit between the Fleet/Force, the Office of Naval Research (ONR) and the Naval Research Enterprise (NRE): Specific Fleet Accomplishments were:

- Science Advisor, Commander Seventh Fleet (COMSEVENTHFLT) (C7F), continued engagement with the Naval Research Enterprise (NRE) and at Sea Shield, Basing, and Strike Symposia on 7th Fleet warfighting gaps. Coordinated discussions and briefings between C7F, ONR, the Navy Research Lab (NRL), and other Navy Labs in the areas of Electronic Warfare (EW), Information Operations (IO), and Anti Submarine Warfare (ASW). Two TechSolutions in the areas of EW and ASW were submitted. Requirements push was initiated to Program Executive Office C4I, Naval Network Warfare Command (NNWC), and US Pacific Command (PACOM) for areas of experimentation during the Trident Warrior and Talisman Saber exercises in the areas of C4I Systems, IO, Coalition Networks, Expeditionary Operations, and Intelligence, Surveillance and Reconnaissance (ISR). Technology and experiment prioritization was provided to higher headquarters for Future Naval Capabilities (FNC), Rapid Technology Transitions (RTT), and Joint Capability Technology Demonstrations (JCTD).
- Science Advisor, Commander United States Fleet Forces Command (CUSFFC), facilitated integration and articulation of fleet warfighter and readiness requirements influencing Naval and Department of Defense Research Development Test and Evaluation (DDR&E) resourcing as follows: Led team from Operational Fleets, Force Providers and Naval Component Commands in articulation of fleet requirements to Science and Technology community. Managed prioritization of proposed technical capabilities including Future Naval Capabilities Program, Rapid Technology Transfer Program, Rapid Development and Deployment Program supporting Navy Urgent Operational needs, and Joint Concept Technology Demonstrator. Programs were prioritized in accordance with overarching Defense, Naval, and Fleet guidance (Combatant Command Integrated Priority List, Naval Strategic Plan, Warfighter Capability Plan, Integrated Capability Plan, etc.) and supported USFF Flag Officer/Senior Executive Service (SES) voting member.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander U. S. Naval Forces Central Command (COMUSNAVCENT), developed, prioritized, and socialized COMUSNAVCENT Technology gaps based on prioritized threat with Chief of Naval Operations (CNO), Acquisition Managers, Defense Advanced Research Projects Agency (DARPA), Office of the Secretary of Defense (OSD), and ONR. Developed and issued four Urgent Operational Needs (UON) establishing critical warfighter requirements: 1) Counter Fast Attack Craft recommending Medusa Joint Capability Technology Demonstration (JCTD) resulting in direct influence of Medusa JCTD ranked number one by Navy in FY 2007 and Joint Requirements Oversight Council (JROC) approved for FY 2008 start; 2) Supported Maritime Security Operations (MSO) and Maritime interdiction Operation (MIO) which resulted in Green Water Boat; 3) Ballistic Missile Defense results are pending; 4) Navy Helicopter Loudspeaker results are pending. Provided oversight to two previously issued UONs: 1) Chemical, Biological, Radiological, Nuclear, Explosive and Drug Detection which resulted in a one man portable detection suite of technology being developed and acquired for USN by Naval Innovation Laboratory (NaIL); 2) Speech Translator for MSO/MIO missions which resulted in S&T work sustained. Endorsed two Rapid Technology Transitions (Seabee Ballistic Protection and Riverine Craft Rocket Propelled Grenade (RPG) Protection) resulting in FY08 funding and project initiation. Secured endorsement for High Frequency Surface Wave Radar and Active Denial System technology insertion. Provided oversight, networking, and consulting for NAVCENT S&T issues to the Naval Research Establishment.
- Science Advisor, Commander Submarine Forces Atlantic Fleet (COMSUBFOR), influenced ONR investments to improve alignment with Undersea Enterprise (USE) S&T needs. Four Future Naval Capability (FNC) proposals jointly shaped, developed and advocated by ONR and USE were subsequently approved: Corrosion, Photonics, Laser Communications, and Intelligence. Achieved projects under the Capable Manpower FNC Program for Decision Making, Displays and Manning; received FNC shift by ONR for Photonics; obtained Submerged Communications Development and Implementation (D&I) investments; stimulated ONR investment in JASONS study for submerged optical communications; influenced Rapid Technology Transition (RTT) and TechSolutions investments in submerged launch and control of Unmanned Aerial Systems and improvements to simulator/trainers; influenced Submarine CO2 scrubber investment, Submarine Battery replacement and more. Influenced Defense Advanced Research Projects Agency (DARPA), Office of the Chief of Naval Operations (OPNAV), Tactical Exploitation of National Capabilities (TENCAP) and DoD High Performance Computer (HPC) investments in areas of interest to USE, as well as focused Naval Research Providers and Industry investments.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander Naval Surface Forces (SURFOR), elevated surface force input for coordinating installation, evaluation and transition of a Defense Advance Research Project Agency (DARPA)/Program Executive Office Ships (PEO-SHIPS) high efficiency lighting project. Principal in Surface Ship Technology process (SURFTECH), providing the Command's perspective to the Flag Integrated Product Team (IPT). SURFOR's advocate for Anti-Submarine Warfare (ASW) Improvement Program (ASWIP) and Surface Warfare Improvement (SUWIP). Supported commander, Naval Surface Forces for Littoral Combat Ship, Fleet requirements, and evaluation of candidate concepts of naval relevance. Managed and coordinated the Scientist at Sea Program.
- Science Advisor, Commander Third Fleet (COMTHIRDFLT) (C3F), coordinated and participated in S&T cell for Valiant Shield 07 exercise. Actively participated as C3F's SeaShieldpillar initiatives including Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Anti-Terrorism/Force Protection (AT/FP), and Ballistic Missile Group (BMG). Supported development of Joint Multi-Mission Electro Optic System (JMMES) and Joint Technology Capability Demonstration (JCTD). Coordinated C3F Sea Trial/Sea Shield Experimentation efforts for the C3F Operational Agent.
- Science Advisor, Commander Sixth Fleet (COMSIXTHFLT) (C6F)/Commander Naval Forces Europe (CNE), established ongoing dialogs with international partners, the United States Government Interagency, System Commands (SYSCOM) principals on Maritime Domain Awareness issues for the U.S. Naval Forces, Europe (NAVEUR) operational area, emphasizing the importance of incorporating "disadvantaged" users where "low barriers to entry" are required (primarily in the developing world). These initiatives not only promote nation building but have greatly improved our Command and Control operational picture by incorporating white shipping. The Maritime Security and Safety Information System (MSSIS) now has widespread participation in Europe and Africa; over 40 countries, along with US and NATO ships, airplanes, and submarines, now contributed to Automated Identification System (AIS) feeds resulting in the most comprehensive unclassified operational picture in history.
- Science Advisor, Commanding General 1st Marine Expeditionary Force (CG I MEF), assisted in establishing the Infantry Immersion Trainer (IIT). The IIT is an initial training capability providing small unit infantry with the sensory inputs and stresses of the battle field in coordination with the need to make sound moral, ethical, and tactical decisions. Also established quarterly Warfighter S&T Seminars at which major supporting commands were able to interact directly with the S&T community.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Chief of Naval Operations (CNO) Strategic Studies Group (SSG) contributed to SSG XXVI team efforts to develop revolutionary warfighting concepts for "Convergence of Sea Power & Cyber Power." Facilitated broad technical exchanges among a variety of organizations and the SSG. Proactively identified potential sources of information sought by the Group's Concept Teams (CTs) and played an important role in the development of the introductory program by SSG. Established and expanded links with a broad spectrum of government, scientific, academic, and industrial organizations across the nation so that the SSG could benefit from an understanding of their endeavors as they might apply to naval warfare.
- Science Advisor, Commander, U.S. Marine Corps Forces Command (COMMARFORCOM), developed a cohesive and close teaming relationship with ONR Global Science Advisors at I MEF, II MEF, and MARFORPAC that coordinated USMC operating force's voice on S&T matters. Performed continuous communication and collaboration with USJFCOM and USFFC capability development communities to ensure development of technology-based capabilities are optimal to support naval forces. Facilitated command prioritization of Joint Capabilities Technology Demonstration (JCTD), Rapid Technology Transition (RTT), and Future Naval Capabilities. Performed continuing coordination with Marine Corps Combat Development Command (MCCDC) and Marine Corps Warfighting Lab (MCWL) to ensure operating force needs are represented in future naval expeditionary warfare capabilities. Reviewing USMC Urgent Needs Statement (UNS) requests for applicability to ONR S&T programs.
- Science Advisor, Commander, Naval Air Forces (COMNAVAIRFOR), completed the design, development, and installation (CVN-73) of the CVN Surveillance System (Watch Stander) for detection and identification of small boat threats to aircraft carrier strike groups. Watch Stander was initiated by the ONR TechSolutions program that provides perimeter day/night surveillance. Continued the design and development of the Advanced Shipboard Acoustical Communications System (ASACS), a program for Anti-Terrorism/Force Protection (AT/FP) close-in perimeter surveillance, communications, and warning system onboard Navy Ships. Scheduled ASACS installation on CVN-69 for July 08. Developed Naval Aviation Enterprise (NAE) S&T challenges to address Naval Aviation Force needs and socialized them with OPNAV, NAVAIR, Fleet, and ONR Leaders. Active member of the NAE Science & Technology Objectives (STOs) development team. NAE STOs provide goals for the NAE by facilitating the alignment of the Navy's applicable S&T investments to the technology requirements of Naval Aviation. Initiated four TechSolutions addressing: a) Helicopter Control Officer Trainer deficiencies, b) Helicopter decoy system, c) CVN navigation needs during underway replenishment operations, and d) Search and Rescue need for a flameless smoke for helicopter hover and landing maneuvers.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Chief of Naval Operations (CNO) Executive Panel (CEP), performed direct support activities to the CEP subcommittees on Latin America and the Navy's Role in Missile Defense, including technology discussions with PMR-51. Led Principal Staff on Defense of the Sea Bed subcommittee, including Federal Advisory Committee Activity (FACA) requirements, integration and liaison with OPNAV N81 (Assessments), Office of the Secretary of Defense (OSD)/Net Assessment, OPNAV N25 and various intelligence agencies. Coordinating technology and strategic level briefings from Defense Advance Research Project Agency (DARPA), U.S. Strategic Command (STRATCOM) and U.S. Northern Command (NORTHCOM). Organized presenters for an Intelligence Day with topics of Anti Satellite (ASAT), Anti Ship Counter Measures (ASCM), and adversary submarine operations and technologies. Coordinated and monitored the CEP Panel Member's mentoring of the CNO's Strategic Studies Group Cyberspace research.
- Science Advisor, Commanding General 2nd Marine Expeditionary Force (CG II MEF) supported II MEF CG vision to improve II MEF ability to evaluate and introduce S&T products. Coordinated Individual Force Protection System (IFPS) User Evaluation. Assisted in establishing Town Hall Meetings to allow Marines who were recently returned from theater to exchange current information on Marine Corps and enemy Tactics, Techniques and Procedures (TTP). Met with CG II MEF and Marine Corps Warfighting Lab to plan way ahead for the Infantry Immersion Trainer and the Infantry Skills Simulation Working Group. Submitted request for a small vehicle which would carry explosive ordnance disposal (EOD) technicians to the device in a prone position. Submitted proposal on small pulse detonation engine tuned to mimic the infrared (IR) and Acoustic signatures of a helicopter. Worked with Marine Special Operations Command (MARSOC) to identify technology opportunities to enhance their operational portfolio.
- Science Advisor, Commander, U.S. Marine Corps, Pacific (COMMARFORPAC), worked with the operating forces and Research and Development community to improve warfighting capabilities in mission areas unique to the Pacific Area of Responsibility (AOR). Initiated a project to develop a graphic operations order (OPORD) which has become the catalyst for development of MARFORPAC's C2 vision as well as shape a major investment the USMC is preparing to make in the C2 systems. Worked to bring S&T alternate energy efforts into MARFORPAC's strategy for achieving energy and water security at installations throughout the Pacific. Effort is significant in USMC's move of forces from Okinawa to Guam. Instrumental in bringing new hyperspectral imaging technologies to bear on development of USMC training ranges in the Northern Marianas Islands. Contributed to renewed ONR development of new generations of counter-sniper technologies.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander Pacific Fleet (COMPACFLT), improved capabilities across the Pacific Fleet Area of Responsibility (AOR) through rapid technology pull in various mission areas including Maritime Security Operations, Anti-Submarine Warfare (ASW) and Counter-Intelligence Surveillance Reconnaissance (ISR). Engaged S&T, Acquisition, Industry, University, Other Government Agencies and Coalition Partners to emphasize our warfighting gaps and identify possible long-term solutions and collaborative efforts. Submitted three Techsolution requests to address a critical warfighting gap associated with 1) Maritime Security Operations (MSO) to provide an Enhanced Maritime Intercept Operations (E-MIO) capability to support intelligent collection, dissemination, analysis and reachback, 2) Real-time assessment of ASW operational performance during exercises to enhance operator training and 3) threat surveillance situational awareness tool. The E-MIO capability was tested during Talisman Sabre and results were transitioned into PEO C4I's E-MIO program of record. Acted as Operational Manager and project oversight lead at COMPACFLT for a JCTD. Worked with the Navy's S&T and Acquisition communities to identify advanced technologies for PACFLT's Maritime Operations Center (MOC) to improve our capability to Command and Control associated with Joint Task Force responsibilities. In support of Shipyard Innovation, formulated a project regarding application of Nanotechnologies for coatings and paints in an effort to reduce maintenance of shipboard equipment and possibly improve anti-fouling bottom coatings. Continued to engage leadership involved in improving ASW and Surface Warfare capabilities to support Pacific Area of Responsibility (AOR) wartime contingency plans. Emphasis has been in non-traditional ASW technologies, Fleet Synthetic Training and Distributed Netted Sensors for ASW and Over-the-horizon targeting and improve weapons for Surface Warfare. Naval Post Graduate School (NPGS) established significant research proposals/experiments, in support of PACFLT, focused on Cooperative Operations and Applied Science & Technologies Study (COASTS), Littoral Combat Ship (LCS) Platform Logistics support and asymmetric Ballistic Missile Defense concepts.

- Science Advisor, Naval Supply Systems Command (NAVSUP), executed two Technology Insertion Program for Savings (TIPS) funded project one for Modified Atmosphere Packaging System (MAPS) that will extend shelf life for Fresh Fruits and Vegetables (FFV); other for Wireless Blade Monitoring System (WBMS) to evaluate rotor blade strain gauges wirelessly. Managed Navy Logistics Program (NLP) projects to include, Collaborative Logistics Program (CLP), Aviation Pack-up Kits (A-PUK), Naval Operational Logistics Innovation (NOLI), Defense Integrated Technical Data Center (D-ITDC) and Lead Free Solder. Managed NAVSUP's Small Business Innovation Research (SBIR) projects. Served as the NAVSUP representative to Virtual SYSCOM (VS) Systems Engineering and Technical Authority working group. Served as coordinator for NAVSUP Technical Authority Board and as manager of internal SYSCOM documentation necessary to implement Technical Authority within the command. Continued working collaboratively with Navy Automated Identification Technology (AIT) Office to enable and expand use of AIT applications.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROJECT NUMBER: 0834

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Naval Criminal Investigation Service/OPNAV (NCIS/N34), created Research, Development Test and Evaluation (RDT&E) and transition roadmaps for Navy Physical Security systems; led efforts to rapidly create and deploy Joint Expeditionary Forensic Facilities to theater, in response to an urgent warfighting capability gap identified by the Central Command; secured resources from the Office of Secretary of Defense to rapidly develop and deploy wireless communication capability for Expanded Maritime Interdiction Operation; completed comparative testing and evaluation of commercially available desktop trace explosive detectors; hosted the third Navy BioMetrics Information Exchange Forum to coordinate Navy activities and identify leveraging/collaboration opportunities in Biometrics.
- Science Advisor, U. S. Pacific Command (USPACOM), developed strategic plan for Command engagement with the DoD wide S&T community. Developed and executed the outreach program with senior government leadership to explain priority Command operational shortfalls. Established and operated first ever S&T advisory cell to the Deputy Commander consisting of representatives from all Services and DARPA. Cell participated in the strategic exercise "Terminal Fury" and demonstrated the value of closer ties between the Command and the S&T community in solving near term operational problems. Conducted the Pacific Theater Operational Science and Technology Conference that brought together technical and warfighting participants from all over the world to build the relationship between warfighters and researchers. Developed cooperative technology activities with Singapore, Australia, Korea, Malaysia, and Thailand. Established bi-lateral Capabilities development Working Group with Singapore to stimulate cooperative projects. Facilitated approval of two new technical efforts with US Forces Korea that will enable precise counterfire response to indirect fire and rapid detection of biological agents. Developed new proposal with Singapore to weaponize an unmanned surface vessel. Initiated new relationship with Department of Energy (DOE) lab to help solve Command problems.
- Science Advisor, Chief of Naval Operations Code N81 (OPNAV N81), focused on disseminating the Navy's warfighting capability analysis products to the broader Science and Technology (S&T) community, resulting in an increased influence on S&T. In addition the N81 Science Advisor led the development of a comprehensive set of warfighting capability gaps which formed the basis for Future Naval Capabilities (FNC) refresh. On an ongoing basis, the N81 Science Advisor synthesized products from think tanks, defense policy experts, intelligence analysts, warfighter, technologists and scientists, to frame S&T in the context of emergent warfighting capability issues, while advising N81 leadership on programmatic S&T issues of particular interest. Finally, the N81 Science Advisor led broad-based special studies focused on Directed Energy Weapons and on Unmanned Vehicles.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander Submarine Forces Pacific Fleet (COMSUBPAC), developed a summary of Science and Technology needs specific to the missions and likely operational scenarios associated with the Pacific Submarine Command. The plan begins with demonstrating technical challenges and performance short-falls associated with a stressing Western Pacific (WESTPAC) campaign with an attack center crew in a simulated environment provided by the Naval Submarine Training Center Pacific (NSTCP). Submitted two requests to TechSolutions, Over the horizon target identification for submarines and Improved submarine hull mounted sensors for anti-submarine warfare (ASW) operations. Continued to evaluate the feasibility of potential implementation approaches for these solutions and coordinated with ONR and Naval Sea Systems Command (NAVSEA) program managers to develop prototypes for submarine experimentation. Other efforts have been focused upon completing projects which included installation of new bridge radios capable of Digital Selective Calling, distribution of new commercial radar reflectors for enhanced ship safety during surface transits, and monitoring the development of a custom radar reflector prototype as part of an on-going TechSolutions effort.
- Science Advisor, Naval Mine and Anti-Submarine Warfare Command (NMAWC), served as a key member of the anti-submarine warfare (ASW) and Mine Warfare (MIW) Fleet Collaborative Teams which annually developed the Integrated Prioritized Capabilities List (IPCL) for the Navy's ASW and MIW capability gaps. Directly involved in developing the Executive Information Board-CNO (EIBC) brief given by the Commander Third Fleet to report the Navy's ASW status to its leadership. Worked closely with ONR personnel to provide essential information for the Future Naval Capabilities process to ensure the best technology options were selected. Submitted four important technology support, requests to ONR-Global TechSolutions to solve Fleet issues that otherwise would continue to be unsupported hurting operational readiness. Represented the Fleet and NMAWC at several technical forums including Littoral Combat Ship (LCS) development, Multi-static Active coordination and planning, and Technology Independent Critical Recommendation Team (ICRT) meetings providing necessary perspective to ensure Fleet issues were considered in these Navy decisions. Provided direct input to the NMAWC End to End ASW Assessment for the Chief of Naval Operations (CNO) which was developed to provide him a clear picture of what action is needed to meet ASW requirements.
- Science Advisor, Deputy Chief of Naval Operations for Communications Networks (OPNAV N6) established the position of Science Advisor in December of 2007 and began advising the N6 and his staff on decisions regarding critical technology issues addressed through Science and Technology (S&T) and Research, Development, Test, and Evaluation (RDT&E) initiatives. Efforts focused on the development of S&T investments that increased capability and reduced costs across the Navy Information Technology (IT) Enterprise have resulted in the establishment of nine Enterprise IT pilots to shape the future Naval Network Environment (NNE). In conjunction with these efforts, the N6 Science Advisor worked across the Naval Network FORCENET Enterprise to

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

develop the Navy's C4ISR vision and provided the framework for future strategic, operational, and financial decisions within the NNE for the next decade and beyond.

- Science Advisor, Commander, Navy Expeditionary Combat Command (COMNECC). Newly established position provided the linkage between the Command needs and the Science and Technology communities' ongoing efforts to satisfy an underserved warfighting capability. Developed strategic partnerships with Navy Special Warfare and the USMC requirements efforts to provide common approaches to shared gaps. Established communications networks to ensure that the NECC mission set, which differs from traditional concepts, is addressed currently planned S&T effort that can be transitioned to more focused efforts.
- Science Advisor, Commander Naval Network Warfare Command (NNWC), led study to identify top five Science and Technology issues for the Command, participated in NNWC prioritization for Future Naval Capabilities (FNCs) proposals. Led effort to adapt Joint Test and Evaluation methods to measure non-material contributions from Naval experimentation efforts. Participated in Pacific Command (PACOM) Electronic Warfare workshop and Electronic Warfare Science and Technology Program Review to help bring Navy wide fleet perspective to this critical warfighting capability area. Coordinated and led investigations into maritime requirements for space based laser communication and sensing capabilities.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: 0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

C. OTHER PROGRAM FUNDING SUMMARY - NAVY RELATED RDT&E:

PE 0601152N In-House Laboratory Independent Research
PE 0601153N Defense Research Sciences
PE 0602114N Power Projection Applied Research
PE 0602123N Force Protection Applied Research
PE 0602131M Marine Corps Landing Force Technology
PE 0602235N Common Picture Applied Research
PE 0602236N Warfighter Sustainment Applied Research
PE 0602271N Electromagnetic Systems Applied Research
PE 0602435N Ocean Warfighting Environment Applied Research
PE 0602747N Undersea Warfare Applied Research
PE 0602782N Mine and Expeditionary Warfare Applied Research
PE 0603114N Power Projection Advanced Technology
PE 0603123N Force Protection Advanced Technology
PE 0603235N Common Picture Advanced Technology
PE 0603236N Warfighter Sustainment Advanced Technology
PE 0603271N Electromagnetic Systems Advanced Technology
PE 0603640M USMC Advanced Technology Demonstration (ATD)
PE 0603729N Warfighter Protection Advanced Technology
PE 0603747N Undersea Warfare Advanced Technology
PE 0603758N Navy Warfighting Experiments and Demonstrations
PE 0603782N Mine and Expeditionary Warfare Advanced Technology

OTHER PROGRAM FUNDING SUMMARY - NON-NAVY RELATED RDT&E:

Not applicable.

D. ACQUISITION STRATEGY:

Not applicable.

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT (PE) NAME AND NO. 0206313M Marine Corps Communications Systems						
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO	FY10 Total			
Total PE Cost	347.524	288.714	287.348	0.000	287.348			
C2270 Expeditionary Indirect General Support Weapon Systems	22.043	55.044	25.826	0.000	25.826			
*C2272 Intelligence C2 Systems	13.897	17.712	0.000	0.000	0.000			
**C2273 Air Operations C2 Systems	62.476	46.422	71.432	0.000	71.432			
C2274 Command & Control Wargare Systems	51.250	17.603	19.887	0.000	19.887			
C2275 Joint Tactical Radio Systems	5.944	11.822	8.790	0.000	8.790			
C2276 Communications Switching and Control Systems	3.637	2.580	2.954	0.000	2.954			
C2277 System Engineering & Integration	9.321	6.922	6.988	0.000	6.988			
C2278 Air Defense Weapons Systems	2.386	4.601	7.754	0.000	7.754			
C2510 MAGTF CSSE & SE	62.717	15.191	62.063	0.000	62.063			
C3099 Radar Systems	103.731	103.118	17.729	0.000	17.729			
C9C89 Marine Ground-Air Radar	0.000	0.000	63.925	0.000	63.925			
C9999 Congressional Adds	10.122	7.699	0.000	0.000	0.000			
Quantity of RDT&E Articles								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program element provides funding to develop the command and control (C2) support and information infrastructures for the Fleet Marine Force and supporting establishment. Doctrinally, the C2 support system and the information infrastructure form two parts of a triad of capabilities which permits command and control systems to be transformed into a complete operating system. The third element of the triad is command and control organization and is not covered in this program element. USMC command and control is divided into seven functional areas and one supporting functional area as follows: intelligence C2, fire support C2, air operations C2, radio systems C2, combat service support C2, warfare C2, radar systems C2, and C2 support (information processing and communications).

Within this program element, subprojects have been grouped by C2 functional area for more efficient planning. Air defense weapons systems have been added to facilitate planning and a separate project is used for systems assigned to the supporting establishment. Subprojects which support the commander's decision processes have been collected into the Command Post Systems project since these systems must work in close cooperation to ensure effective C2 of Marine Air Ground Task Forces.

Note:

*Funds for Project C2272 were realigned to PEs 0206625M/0305232M/0305234M in FY10.

**Reflects correction that moved funds from C2273, PE 0206313M to C2272, PE 0206625M (approved/processed by FMB/PBIS)

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
		May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT (PE) NAME AND NO.		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems		
B. PROGRAM CHANGE SUMMARY			
	FY2008	FY2009	FY2010
Funding:			
FY 2009 President's Budget:	260.719	273.696	189.912
FY 2010 President's Budget:	347.524	288.714	287.348
Total Adjustments:	86.805	15.018	97.436
Summary of Adjustments:			
a. Congressional Adjustments:		-0.762	
- FY08 OCO:	51.144		
b. SBIR/STTR Transfer:	-3.289		
c. Program Adjustments:	38.950	15.780	100.768
d. Rate/Misc Adjustments:			-3.332
Subtotal	86.805	15.018	97.436

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-7 Operational Systems Development		0206313M Marine Corps Communications Systems					C2270 Exp Indirect Fire Gen Supt Wpn Sys			
COST (\$ in Millions)										
		Prior Years	FY 2008	FY 2009	FY2010	FY 2010 OCO	FY 2010 TOTAL			
Project Cost										
		35.509	22.043	55.044	25.826	0.000	25.826			
RDT&E Articles Qty -NA										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Systems assigned to this project are to be used by commanders and their staffs to process, fuse, and tailor information to assist decision-making and enhance situational awareness. They will integrate and share information from sources both internal and external to the Marine Air-Ground Task Force (MAGTF) to provide a shared understanding of the battle space. Maneuver Command and Control (C2) is the executive layer of decision support that retrieves and fuses information from functional areas. It provides an integrated representation of the battle space or a specific area of concern. The subprojects below develop systems that report unit status and location to the Tactical Combat Operations (TCO) System, and disseminate maneuver information throughout the battle space. Advanced Field Artillery Tactical Data System (AFATDS)- Consists of fire support Command and Control C2 software fielded on Marine Corps common hardware. AFATDS provides the MAGTF with the ability to rapidly integrate all supporting arms assets into maneuver plans via a digital link utilizing currently fielded communications equipment. AFATDS automates the fire planning, tactical fire direction, and fire support coordination required to support maneuvers from the sea and subsequent operations ashore. The AFATDS program includes AFATDS software and hardware, the Effects Management Tool (EMT) (a C2PC injector), the Back-up Computer System (BUCS), and the Battery Mobile Tactical Shelter (MTS). Command and Control Personal Computer (C2PC) - C2PC is the core client and gateway for the Joint Tactical Common Operating Picture Workstation. It is the authoritative data source for the ground common operating picture within the Marine Air Ground Task Force (MAGTF). Tactical Command Operations System (TCO) - TCO is the principal tool within the Marine Air Ground Task Force (MAGTF) for situational awareness through distribution of the Common Tactical Picture (CTP). It supports tactical operations providing information via high speed computer systems in a timely manner and includes the Intel Operations Workstations/Servers. R&D funds provide science and technology advanced concepts to be applied to the system for an increase in functional capabilities to the warfighter. Tactical Locator Designation and Handoff System (TLDHS) - Hand-Off System - Provides the ability for Forward Observers (FOs) and Forward Air Controllers (FACs) to: observe their area of interest, quickly and accurately locate ground targets, receive and display Blue Force Situational Awareness information and Fire Support Coordination Measures (FSCMs) on map displays interfaced with C2PC. TLDHS can digitally request and provide digital terminal control for target engagements by field artillery (FA) through AFATDS, close air support (CAS) aircraft, and naval surface fire support (NSFS), and the machine-to-machine interface of the system reduces the potential for fratricide due to human error and by displaying friendly positions and target locations to the terminal controller. TLDHS Block II also provides the capability to designate targets for laser-guided munitions and laser spot trackers. TLDHS Block II is comprised of and integrates two major subsystems: the Targeting Subsystem and the Target Hand-Off Subsystem. USMC Milestone C for TLDHS Block II was June 2005 and Fielding and Full rate Production Decisions were October 2006. Fluctuations of R&D across the FYDP are due to the nature of a spiral development approach. Marine Air Ground Task Force (MAGTF) Command and Control (C2) Systems Applications - MAGTF C2 SA merges the development, integration and testing of 45 existing C2 systems and applications into one common enterprise capability. They reside in all Combat Operations Centers (COCs) and related USMC C2 platforms. This effort provides greater economies of scale/affordability with system developers, technical design agents, integration agents and individual program offices. MAGTF C2 SA efforts are in alignment with MCCDC's requirements for: Net-Centric systems, Service Oriented Architecture, Open Architecture components, Maximize C2 capabilities, Enhance the war-fighter's Situational Awareness, Increase/Maximize the Commander's decision space.										

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-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2270 Exp Indirect Fire Gen Supt Wpn Sys
Joint Battle Command - Platform (JBC-P) - will provide a single integrated Joint Blue Force Situational Awareness (JBFSa) capability solution for C2, Position Location Information (PLI), Mapping, Messaging, Overlays, and Routes, as required by Joint Requirements Oversight Council Memoranda 163-04, and 161-03. JBC-P will replace, DDACT, MRC, and BFT family of systems. Blue Force Situational Awareness (BFSA) - is the Marine Corps' Situational Awareness family of systems comprised of the Mounted and Dismounted variants of terrestrial (EPLRS/SINCGARS) systems, and the mounted celestial (SATCOM) system. Data Automated Communications Terminal (DACT) (BFSA) - is the Marine Corps' Blue Force Tracking Program of Record. It is the primary source of all tactical ground tracks below the Marine battalion, and is the primary provider of Position Location Information (PLI) into the Combat Operations Center (COC) and to Joint forces viewing the Common Operational Picture (COP). DACT is one tool in the Joint Combat ID toolbox that the Marine Commander uses to reduce the potential for fratricide. The Mounted Refresh Computer (MRC) (BFSA) - MRC is the replacement for the Mounted DACT and consists of a militarized central processing unit with Command and Control Compact Edition (C2CE) software integrated with various tactical vehicle platforms and communications systems through the use of a Vehicle Modification (VM) kit. It is mounted in vehicles from the battalion to the mechanized platoon (HMMWV, AAV, LAV and tanks). The Dismounted Data Automated Communications Terminal (D-DACT) (BFSA) - The Dismounted DACT is a smaller, lighter handheld device having greater battery life, consisting of the Rugged Personal Digital Assistant (R-PDA) with Windows Command and Control CE (C2CE) software. The Dismounted DACT is intended for the dismounted user at the platoon level. Future DACT improved capabilities for replacement systems will meet stipulated Operational Requirements and OIF-derived Requirements to provide Blue Force Tracking and automated communications support for commander in tactical operations. New capabilities will include Non Line of Sight (NLOS) and enhanced communication paths; improved Graphic User Interface (GUI) software, a larger screen, and Selective Availability Anti-Spoofing Module (SAASM) GPS integration. Blue Force Tracker (BFT) (BFSA) System is a satellite-based Tracking and Communication System. BFT provides the capability to identify position, track progress, and communicate with the operators of tactical vehicles in OIF/OEF. The BFT is employed at the battalion level below to provide operational commanders with USMC/Army Position Location Information within the area of operations. It is mounted in vehicles at the Battalion level and below down to the individual vehicle (HMMWV, AAV, LAV and tanks). Identity Dominance System (IDS) - will provide a user friendly biometric authentication technology that will be employed to deny the enemy freedom of movement within the populace and positively identify known insurgents within an Area of Responsibility (AOR). It will enable Marine Corps and host-nation security personnel to detain, apprehend or deny entry to unwanted individuals in critical areas. The capability will enhance overall Force Protection and High-Value Target Identification by providing a means to rapidly ascertain whether or not a detained individual is wanted for criminal or terrorist activity, badge local workers and support post incident investigation by allowing collected evidence to be compared to available biometrics to identify likely suspects. Specifically, these items will enable enhanced perimeter security for high-visibility events such as national elections on foreign soil; high profile dignitary meetings between U.S. military officials and host nation political and military leaders; and U.S. military demonstrations. This capability will also enable enhanced prisoner management for the efficient administration of detainees, and improve Civil Action of DoD personnel by providing a means to track payments to host-nation workers and managed local lab where military/Marines are located. Finally, this capability will enhance available intelligence by allowing "link analysis" on individuals to reveal criminal or terrorist associations not readily apparent when records are reviewed individually.		

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems		PROJECT NUMBER AND NAME C2270 Exp Indirect Fire Gen Supt Wpn Sys	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.500	0.213	0.354	0.000
RDT&E Articles Qty				
TLDHS: Software Development, New Functionality and Sustainment				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.577	1.300	3.722	0.000
RDT&E Articles Qty				
TLDHS: Test Development and Integration Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.207	0.587	0.232	0.000
RDT&E Articles Qty				
AFATDS: Development of BackUp Computer System (BUCS) & Software (SW)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.000	1.000	1.168	0.000
RDT&E Articles Qty				
AFATDS: Software Development, Testing, and Integration				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.597	3.308	2.971	0.000
RDT&E Articles Qty				
AFATDS: Program Management, engineering support and hardware development.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.313	0.500	0.000
RDT&E Articles Qty				
AFATDS: MCTSSA tested new Software (SW) and Federation of Systems (FEDOS)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.300	0.300	0.000
RDT&E Articles Qty - Not Applicable				
AFATDS: Development of improved interoperability with USMC and Joint Systems. Enhancement to EMT and C2PC interface.				

EXHIBIT R-2a, RDT&E Project Justification			UNCLASSIFIED		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2270 Exp Indirect Fire Gen Supt Wpn Sys	
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.309	0.000	0.000
RDT&E Articles Qty					
C2PC: Planned Engineer Change Proposals of the client and gateway					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		4.586	9.630	2.000	0.000
RDT&E Articles Qty					
MAGTF C2: Engineering, research, development, integration and testing support for 2010 MAGTF release					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		4.669	26.117	6.000	0.000
RDT&E Articles Qty - Not Applicable					
MAGTF C2: Engineering, research, and development support. This research includes analysis of alternatives such as the Future Combat Systems C2 capabilities and Net Enabled Command and Control. FY09 RDT&E funding is significantly higher to enable front end investment in the development of USMC net centric C2 capabilities.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		7.530	0.000	0.000	0.000
RDT&E Articles Qty					
MAGTF C2: Software Development. FY09 RDT&E funding is significantly higher to enable front end investment in the development of USMC unique services in support of the transition to a Net Centric Environment.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		1.800	7.414	2.468	0.000
RDT&E Articles Qty					
MAGTF C2: Program Support. System engineering, programmatic, and logistics program support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.190	0.921	0.074	0.000
RDT&E Articles Qty					
BFSA: Test support					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.091	0.100	1.234	0.000
RDT&E Articles Qty					
BFSA: Increased Capabilities.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.211	2.579	0.871	0.000
RDT&E Articles Qty					
BFSA: Software Integration.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	1.630	0.000
RDT&E Articles Qty					
JBC-P: Software Development/Integration.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.529	0.000
RDT&E Articles Qty					
JBC-P: Training Development.					

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-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2270 Exp Indirect Fire Gen Supt Wpn Sys	
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.085	0.263	0.230	0.000
RDT&E Articles Qty - Not Applicable					
TCO: System testing and integration to develop additional functional capabilities.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.450	0.356	0.000
RDT&E Articles Qty					
TCO: Integrate software changes into new system and perform testing.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.240	0.128	0.000
RDT&E Articles Qty					
TCO: Testing and validations of advanced concepts and technologies.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	1.059	0.000
RDT&E Articles Qty					
IDS: Concept and Technology Development					
(U) Total \$		22.043	55.044	25.826	0.000

EXHIBIT R-2a, RDT&E Project Justification

DATE: May 2009

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N /BA-7 Operational Systems Development

PROGRAM ELEMENT NUMBER AND NAME
0206313M Marine Corps Communications Systems

PROJECT NUMBER AND NAME
C2270 Exp Indirect Fire Gen Supt Wpn Sys

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
PMC BLI 463100 MCIOC	0.000	0.548	0.336	0.000	0.336
PMC BLI 463100 AFATDS	6.653	0.859	13.877	2.460	16.337
PMC BLI 463100 BFSa	53.174	130.873	19.389	18.474	37.863
PMC BLI 463100 GCCS	4.750	4.672	7.356	0.000	7.356
PMC BLI 463100 TCO	1.320	0.843	0.772	0.000	0.772
PMC BLI 463100 TLDHS	9.340	1.039	8.090	2.107	10.197
PMC BLI 463100 CAPSET I COC	0.000	2.500	0.000	0.000	0.000

(U) D. ACQUISITION STRATEGY:

TLDHS: The acquisition of components (software/hardware) for the TLDHS initiative will maximize the use of existing COTS, GOTS, NDI and GFE. Software development is conducted utilizing a sole source small-business contract. Software must maintain compatibility with 5 POR and 7 Operational Flight Programs (OFP).

AFATDS: AFATDS is a Cost Plus Award Fee contract through Army CECOM, Ft. Monmouth, NJ. R&D efforts will be a combined effort between the software developer (Raytheon), the Army PM and the USMC of software enhancements for the next planned versions of AFATDS.

TCO: Contracting is done with various vendors for software test and integration, COTS evaluation and documentation to develop advanced concepts and additional functional capabilities. The PMO conducts quarterly performance reviews. In POM 10, the requirement for R&D decreases, as the requirement for PMC increases.

MAGTF C2 SA: MAGTF C2 SA is a spiraled development of capabilities. The spiral development cycle is 2 years. Spiral 1 Initial Operational Capability (IOC) in 2010 has the following capabilities/attributes: Single integrated air and ground picture; full real time to near real time, and non real time data exchange; integrated fire control. Each spiral will be accepted as an integrated whole, running on the target hardware, following a contractor development test.

DACT: The Program develops software and hardware for two operational domains. The Mounted Refresh Computer (MRC) (IOC for MRC is planned for May 2009) is the replacement for the Mounted DACT and consists of militarized central processing unit with Command and Control Compact Edition (C2CE) software integrated with various tactical vehicle platforms and communications systems through the use of a Vehicle Modification (VM) Kit. It is mounted in vehicles from the battalion to the mechanized platoon (HMMWV, AAV, LAV, and Tanks). AAO of 1905 systems has been procured. The Dismounted DACT (D-DACT) (IOC 2nd Qtr FY05) is a smaller, lighter handheld device having greater battery life, consisting of the Rugged Personal Digital Assistant (R-PDA) with Windows Command and Control CE (C2CE) software. The Dismounted DACT is intended for the dismounted user at the platoon level. 1,108 systems of the acquisition objective of 1,944 have been procured.

JBC-P: Currently, PM FBCB2/BFT is using a broadly defined projected schedule for JBC-P. The Marine Corps' program office will continue to work with the FBCB2 program office in the development of a detailed program schedule. PM FBCB2/BFT will fund research and development for JBC-P unless there are Service unique requirements, which the Marine Corps program office will fund. The Marine Corps' program office will participate in all design and readiness reviews and a joint IOT&E will be conducted.

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-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2270 Exp Indirect Fire Gen Supt Wpn Sys	
(U) E. MAJOR PERFORMERS:					
TARGET LOCATION DESIGNATION AND HAND-OFF SYSTEM (TLDHS)					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>FY2008 Award Date</u>	<u>FY2009 Award Date</u>	<u>FY2010 Award Date</u>
Stauder Technologies	St. Louis, MI	Test and Evaluation	10/07	10/08	10/09
ADVANCED FIELD ARTILLERY TACTICAL DATA SYSTEMS (AFATDS)					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>Award Date</u>	<u>Award Date</u>	<u>Award Date</u>
Raytheon	Fort Wayne, IN	Develop and Test Software	10/07	05/09	10/09
Raytheon	Fort Wayne, IN	MCTSSA, Software Testing	10/07	05/09	10/09
Raytheon	Fort Wayne, IN	Program Management	03/08	03/09	03/10
TACTICAL COMBAT OPERATIONS (TCO)					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>Award Date</u>	<u>Award Date</u>	<u>Award Date</u>
SPAWAR	Charleston, SC	Provide funds to EMA, and SRC for testing of new workstation concept, integration of new software, and final acceptance testing.	11/07	11/08	11/09
MAGTF C2 SA					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>Award Date</u>	<u>Award Date</u>	<u>Award Date</u>
NGMS	San Diego, CA	Product Software Development	11/07		
SPAWAR	Charleston, SC	Product Software Development	10/07	04/09	10/09
DATA AUTOMATED COMMERCIAL TERMINAL (DACT)					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>Award Date</u>	<u>Award Date</u>	<u>Award Date</u>
NSWC SPAWAR	Charleston, SC	Integration and Program Support	01/08	01/09	01/10
North America	Carlsbad, CA	Training Development	01/08	01/09	01/10
QinetiQ	Stafford, VA	Program Support	01/08	01/09	01/10
BLUE FORCE SITUATIONAL AWARENESS (BFSA)			<u>Award Date</u>	<u>Award Date</u>	<u>Award Date</u>
<u>Performer</u>	<u>Location</u>	<u>Description</u>			
DRS Tech	Melbourne, FL	Hardware	01/08	01/09	01/10
NGMS	California (SD,LA)	Software	01/08	01/09	01/10

Exhibit R-3 Cost Analysis									DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT						PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Systems Development			0206313M Marine Corps Communications Systems						C2270 Exp Indirect Fire Gen Supt Wpn Sys					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
TLDHS	RCP	STAUDER, STL, MO	6.666	1.077	10/07	1.513	03/09	4.076	10/09					
AFATDS	WR	MCTSSA QUANTICO VA	0.600			0.300	05/09	0.300	10/09					
AFATDS	MPR	RAYTHEON FT MONMOUTH	10.583	1.804	10/07	4.408	05/09	4.371	10/09					
AFATDS	MPR	SPAWAR Charleston				0.300	03/09							
AFATDS	RCP	CEOSS CTQ MCSC	1.000			0.500	03/09	0.500	03/10					
C2PC	RCP	NGMS, San Diego	2.420			0.309	12/08							
MAGTF C2	RCP	NGMS, San Diego	0.000	8.814	10/07	1.455	10/08							
MAGTF C2	MIPR	SPAWAR Charleston	0.000	7.077	10/07	13.750	04/09	3.506	10/09					
MAGTF C2	RCP	NSWC Panama City	0.000	0.133	11/07	0.327	12/08							
MAGTF C2	RCP	GD, Scottsdale, AZ	0.000	1.000	11/07	19.943	04/09	3.212	10/09					
MAGTF C2	RCP	Viecore, NJ	0.000	0.402	07/08									
MAGTF C2	RCP	MCSC QUANTICO VA	0.000			6.854	02/09	2.400	02/10					
BFSA	WR/RCP	SPAWAR. Charleston, SC	1.090	0.064	01/08	1.511	10/08	0.905	10/09					
BFSA	RCP	CEOSS CTQ MCSC	0.790			1.068	03/09	1.086	02/10					
BFSA	MPR/FFP	CECOM FT MONMOUTH	0.755	0.210	12/07	0.100	03/09	0.114	11/09					
BFSA	RCP	MCOTEA	0.000	0.140	10/07	0.921	10/08	0.074	10/09					
TCO	MIPR	SPAWAR. Charleston, SC	3.504	0.085	11/07	0.953	11/08	0.714	11/09					
JBC-P	WR/RCP	SPAWAR. Charleston, SC	0.000					1.500	10/09					
JBC-P	RCP	CEOSS CTQ MCSC	0.000					0.159	02/10					
JBC-P	MPR/FFP	CECOM FT MONMOUTH	0.000					0.500	10/09					
JBC-P	MPR	DISA	0.000											
IDS	MPR	SPAWAR. Charleston, SC	0.000					1.059	11/09					
Subtotal Product Dev			27.408	20.806		54.212		24.476						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
MAGTF C2	RCP	MCSC QUANTICO VA	0.000	0.025	11/07									
MAGTF C2	WR/RCP	MCTSSA	0.000	0.050	11/07			0.250	10/09					
Subtotal Support			0.000	0.075		0.000		0.250						
Remarks:														

Exhibit R-3 Cost Analysis								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME					
RDTE&E, N /BA-7 Operational Systems Development			0206313M Marine Corps Communications Systems					C2270 Exp Indirect Fire Gen Supt Wpn Sys					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
MAGTF C2	WR/RCP	MCOTEA TESTING	0.000	0.250	10/07	0.282	10/08	0.250	10/09				
MAGTF C2	WR/RCP	MCTSSA	0.000	0.834	11/07	0.550	04/09	0.850	10/09				
BFSA	WR	FMF, MCB Camp Pendleton/MCTSSA	0.196	0.078	01/08								
DACT	RCP	MCOTEA TESTING	0.468										
Subtotal T&E			0.664	1.162		0.832		1.100					
Remarks:													
Total Cost			28.072	22.043		55.044		25.826					

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2270 Exp Indirect Fire Gen Supt Wpn Sys

ADVANCED FIELD ARTILLERY TACTICAL DATA SYSTEM (AFATDS)

FISCAL YEARS	FY08	FY09	FY10	
Milestones/Decision Reviews				
Milestone I/II Aug 89				
Milestone III Dec 95				
Initial Fielding Decision Dec 99				
IOC Jul 00				
FOC Jun 03				
Development and Testing				
V6.4 Test and Cert.				
V6.4 Fielding				
SWB2 Development & Testing				
SWB2+ Development & Testing				
SWB3 Development & Testing				
SWB3+ Development & Testing				
Battery Mobile Tactical Shelter				
Research and Development				
Procurement & Fielding				
Refresh (UNIX Laptop Unit)				
Follow on Refresh (Phase 1)				
Follow on Refresh (Phase 2)				
Windows Laptop				
Procurement & Fielding				

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N, C2270, AFATDS	1.804	5.508	5.171
(U) PMC BLI, 463100, AFATDS	6.653	0.859	16.337

AFATDS SCHEDULE DETAILS

AFATDS DELIVERY DETAILS	FY 2008	FY 2009	FY 2010
AFATDS Software Block 2 Delivery		2nd Qtr	
AFATDS Software Block 3 Delivery			3rd Qtr
EMT Software Delivery	4th Qtr	3rd Qtr	
BUCS V2.0 Delivery	2nd Qtr		
BUCS follow on Software Delivery		1st Qtr	

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2270 Exp Indirect Fire Gen Supt Wpn Sys

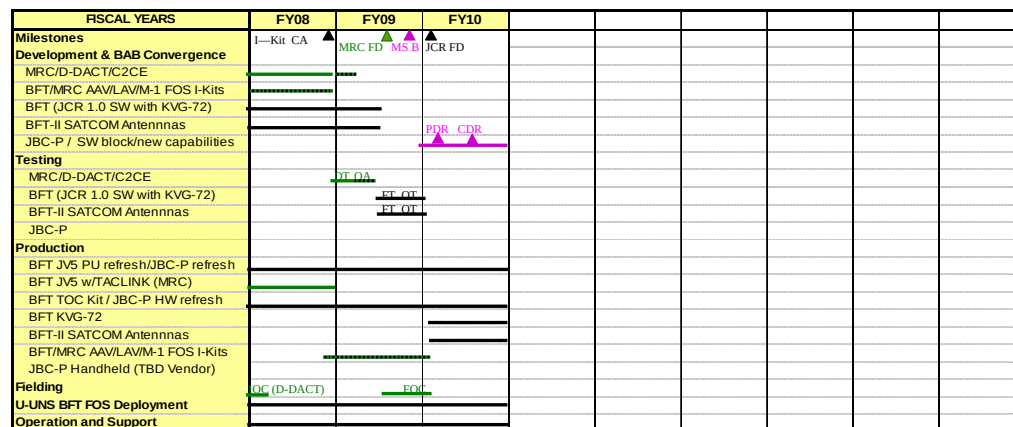
MAGTF C2 Systems and Applications

Program Funding Summary

(APPN, BLI #, NOMEN)	FY 2008	FY 2009	FY 2010
(U) RDT&E,N, C2270, MAGTF C2	18.585	43.161	10.468
(U) RDT&E,N, C2270, C2PC	0.000	0.309	0.000

MAGTF C2 SA SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010
JTCW 1.0 Release	4rd Qtr		
Capability Block 2010 Release			3rd Qtr

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2270 Exp Indirect Fire Gen Supt Wpn Sys

BFSA/DACT SCHEDULE**Program Funding Summary**

FY 2008 FY 2009 FY 2010

(APPN, BLI #, NOMEN)

(U) RDT&E,N, C2270, BFSA

0.492 3.600 2.179

(U) PMC BLI, 463100, BFSA

53.174 130.873 37.863

BFSA/DACT SCHEDULE DETAIL

BFSA Schedule Detail	FY 2008	FY 2009	FY 2010
MRC/D-DACT/C2CE Test		2 QTR	
JCR FT		3 QTR	
JCR OT			1 QTR
JCR MFD			2 QTR
JCR IOC (USMC/USA tactical interoperability & COP)			4 QTR

Exhibit R-4-4a Project Schedule/Detail			DATE:
			May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2270 Exp Indirect Fire Gen Supt Wpn Sys	

TLDHS SCHEDULE

TLDHS - Hand-Off System								
	FY08	FY09	FY10					
Milestones								
Life Cycle Cost Estimate								
DT								
LRIP								
OT								
Fielding								
IOC								
FOC								
Spiral Development								

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N C2270 TLDHS	1.077	1.513	4.076
(U) PMC BLI 4631000 TLDHS	9.340	1.039	10.197

TLDHS SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010
Initial Operating Capability	2nd Qtr		
Full Operational Capability			3rd Qtr
Spiral Development 1.1.3		1st Qtr	
Spiral Development 1.1.4			4th Qtr

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems		PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Project Cost	13.897	17.712	0.000	0.000			
RDT&E Articles Qty							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination. Global Command and Control System Integrated Imagery and Intelligence (GCCS I3) is a joint program that is designed to enhance the operational Commander's situation awareness and track management through the use of a standard set of integrated, linked tools and services that maximize commonality and interoperability across the tactical theater, and national communities. GCCS-I3 operates in joint and service specific battlespace and is interoperable, transportable, and compliant with the DoD mandated Common Operating Environment (COE). Distributed Common Ground/Surface System-Marine Corps (DCGS - MC) - formerly known as Distributed Common Ground/Surface-Integration (DCGS-I), is a collection of Service Systems that will contribute to joint and combined warfighter needs for ISR support, with the Global Information Grid (GIG) providing unconstrained communications circa 2010 to support the Department of Defense (DoD) Intelligence, Sureveillance and Reconnaissance (ISR) Enterprise end-state. The DCGS Integrated Backbone (DIB) is the architecture that will tie the Service DCGS systems together into one Family of Systems (FOS). The DIB will provide the tools, standards, architecture, and documentation for the DCGS community to achieve a Multi-Intelligence (Multi-INT) (e.g. Imagery Intelligence (IMINT), Signal Intelligence (SIGINT), Measurement/Measuring and Signature Intelligence (MASINT), Counterintelligence/Human Intelligence (CI/HUMINT)), network centric environment with the interoperability to afford individual nodes' access to the information needed to execute their respective missions to include Irregular Warfare. The Marine Corps will conduct DIB integration reseach and development to meet a congressionally mandated implementation deadline. Trojan Spirit II - is an SHF multi-band satellite communications terminal, available in either HMMWV-mounted or transit case configuration, that provides dedicated tactical communications capability at the TS/SCI and Secret Collateral levels to USMC intelligence units. TROJAN SPIRIT terminals provide connectivity into JWICSS, NSANET and SIPRNET via the TROJAN Network Control Center. Technical Control Analysis Center (TCAC). The primary mission of the TCAC is to provide the Radio Battalions (RadBn) with an automated Signals Intelligence (SIGINT) processing, analysis, and reporting capability. The TCAC system is designed to receive collected intelligence from tactical, theater and National level producers and provide a multi-source fused intelligence production capability to support the Marine Air Ground Task Force (MAGTF) commander via the Intelligence Analysis System (IAS), as well as the National Security Agency (NSA) and other National consumers. Joint Surveillance Target Attack Radar (JSTARS) connectivity program will research and integrate a client software connectivity solution which will allow the JSTARS Moving Target Indicator (MTI), Fixed Target Indication (FTI) and Synthetic Aperture Radar (SAR) data to be passed from the JSTARS Common Ground Station (CGS) to lower echelons within the MAGTF. Additionally, The Marine Corps will continue future MTI, CDL and MTI sensor capabilities research and development . Tactical Remote Sensor System (TRSS-PIP) - TRSS is a suite of hand emplaced and air-delivered unattended sensors, ground relays, and sensor monitoring stations, which are used by the Intelligence Battalions, Ground Sensor Platoons (GSPs). It provides the MEF/MAGTF Commander with an organic capability to conduct unattended, all-weather, semi-covert, ground surveillance of distant areas within his Area of Operations (AO). Through the use of seismic, acoustic, magnetic, infra-red, and imaging sensors, this suite provides an additional surveillance capability of personnel and/or vehicular activity, during tactical pre-assault, assault and post assault operations. TRSS covers gaps in the overall intelligence collection effort and reduces the requirement to employ Marines behind enemy lines for extended periods of time.							

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
Team Portable Collection System - Multi-Platform Capable (TPCS-MPC) - is a semi-automated, man/team portable system providing intercept, collection, direction-finding, reporting and collection management to MAGTF commander. It provides special signals intercept, and DF capability for each system and is modular, lightweight and team transportable. The next upgrades will be the multi-platform capability and will allow the system to exploit information from more technically advanced target sets and will provide the MAGTF commander with a modular and scalable carry on/carry off suite of equipment. Topographic Production Capability (TPC) is an integrated, independently deployed, self-contained terrain analysis system designed for data acquisition, manipulation, analysis and output, providing commanders and staff with geospatial intelligence (GEOINT) support at the Marine Expeditionary Force (MEF) and the Marine Expeditionary Wing (MEW) levels. The TPC configurations consist of Commercial-off-the-Shelf (COTS)/Government-off-the-Shelf(GOTS) software packages, servers, workstations, large-format printing/plotting devices and large-format scanning devices, all mounted in transit cases. The TPC provides critical, timely, and accurate digital and hardcopy geospatial information to support mission planning and execution. The TPC provides the capability to collect, process, exploit, analyze, produce, disseminate, and use all-source geospatial information as a foundation for a Common Operational Picture (COP) for the Marine Air Ground Task Force (MAGTF) Commander. The TPC is used by the Topographic Platoon of the MEF and provides deployable modules down to the Major Subordinate Command (MSC) and the Marine Expeditionary Unit (MEU). It supports the Commander, Joint Task Force or Marine Component Commander. The TPC provides the frame work for the Common Tactical Tactical Exploitation Group (TEG) - The TEG System is the only tactical imagery exploitation system in the United States Marine Corps (USMC) and is one of the five systems comprising the Distributed Common Ground\Surface System-Marine Corp (DCGS-MC). The modular and scaleable TEG employs a tiered approach comprised of two echelon-tailored configurations: the TEG-Main (TEG-M) and the TEG Remote Workstation (TEG-RWS). The TEG-M receives and processes national, theater, and tactical imagery and supplies the commander and subordinate commanders with exploitation reports and secondary imagery products for tactical operations, strike planning, precision targeting, detection and location of targets of opportunity, and battle damage assessment for restrike planning and intelligence assessment. The TEG-RWS provides imagery support to subordinate units within the MEF that do not require full TEG-M support. The RWS is a portable, deployable stand alone imagery workstation capable of supporting a multitude of mission within the Marine Air Ground Task Force (MAGTF). Wide Field of View Persistent Surveillance (WFVPS) (formerly ANGEL FIRE) - is a capability that supports persistent Intelligence, Surveillance and Reconnaissance (ISR), Improvised Explosive Device (IED) mitigation, and actionable intelligence in urban and other operations (e.g. disaster relief, security, etc). It delivers broad area, near real time, geo-registered imagery down to the tactical level of execution. Consisting of airborne and ground components such as the Airborne payload consists of an imager sensor (currently Electro-Optical (EO), on-board processors, and an air-to-ground communication link. Ground distribution network consist of the ground receive station, servers, storage and viewer client stations. AF is hosted on manned platforms, currently the King Air A-90p pilots fly the plane while the sensors can be controlled from the ground ythrough autonomous software. The USMC objective EFVPS system will reside on an UAS. MAGTF Secondary Imagery Dissemination System (MSIDS) is the only ground prospective Family of Systems (FoS) that provides organic tactical digital imagery collection, transmission and receiving capability to the MAGTF Commander. MSIDS is comprised of components necessary to enable Marines to capture, manipulate, annotate, transmit or receive images in Near Real Time (NRT), internally with subordinate commands that are widely separated throughout the area of operations and externally with higher adjacent commands. MSIDS capability resides with the MAGTF G/S-2 sections and Ground Reconnaissance Battalions, Light Armored Reconnaissance Battalions, Infantry Battalion Scout Sniper Platoons and Marine Special Operations Command. The MSIDS FoS extends the digital imaging capability to all echelons within the MEF, down to and including battalions and squadrons. Captured images are capable of being forwarded throughout the MAGTF through the use of Base Station Workstation/Communication Interface (BW/CI), Out Station Workstation/Communication Interface (OW/CI) or existing C4ISR architecture. MSIDS FoS is currently employed in every location world-wide where the Marine Corps participates in military operations to include Irregular Warfare. MSIDS is currently, or has re Intelligence Equipment Readiness (IER) - The IER provides a responsive capability to alleviate Marine Corps intelligence systems shortfalls created by the rapidly evolving missions, threats and command relationships associated with the Overseas Cintingency Operations (OCO) and 21st Century expeditionary military operations. IER provides for rapid technology insertion, as well as quick reaction training and logistics, to meeting the time sensitive intelligence infrastructure requirements of Marine Corps Operatng Forces and the theater and service intelligence organizations supporting those forces. IER rapidly mitigates intelligence infrastructure shortfalls through exploitation of COTS, GOTS and Non-Developmental Item technology to the greatest extent practical. IER also centralizes support for Marine Corps intelligence infrastructure items and systems that are not separately identified within the program funding lines. IER provides the capability to address requirements that span across the entire Marine Coprs intelligence systems architecture.		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems		PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
Intelligence Analysis Systems (IAS) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence; it ensures that tactical intelligence is tailored to meet specific mission requirements to include Irregular Warfare. Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) provides the MAGTF with integrated, standardized, and interoperable information (automated data processing), communication, and specialized equipment to conduct the full spectrum of tactical CI/Force Protection to include Irregular Warfare, HUMINT, and technical collection operations in accordance with (IAW) applicable national oversight directives. CIHEP provides each CI/HUMINT Company (CIHCo) with a suite of state-of-the-market equipment comprised of commercial-off-the-shelf, government-off-the-shelf, and non-developmental items (COTS/GOTS/NDI). It integrates audio, video, imagery, communications, technical surveillance and computer equipment into lightweight, modular, scalable, deployable packages. CIHEP enhances the capability to collect, receive, process, and disseminate CI/HUMINT information from overt, sensitive, technical, tactical, and Force Protection, in the service, joint, and combined forces area of operations. Intelligence Broadcast Receiver (IBR) provides Marine tactical commanders access to National level Near Real-Time intelligence data provided over the Integrated Broadcast Service. IBR is employed across the MAGTF echelons through the following Host Systems; Intelligence Analysis System; Tactical Air Operations Center; Technical Control and Analysis Center; Tactical Air Command Center; Joint STARS Common Ground Station; Tactical Electronic Reconnaissance Processing and Evaluation System and Common Air Command and Control Systems and Joint Stars Work Station. Tactical Exploitation of National Capabilities (TENCAP) is a program designed to enhance the ability of tactical Marine Corps forces to exploit the capabilities of national intelligence-gathering systems. Congressionally directed, it requires close liaison with the intelligence community and involves complex and highly-sensitive activities.				
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.041	0.434	0.000	0.000
RDT&E Articles Qty				
GCCS-I3: Program Support, Integration and Software Engineering				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.612	0.000	0.000
RDT&E Articles Qty				
GCCS-I3: Software Engineering Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.080	0.000	0.000
RDT&E Articles Qty				
GCCS-I3: Engineering/Aca Logistics Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.100	0.000	0.000
RDT&E Articles Qty				
GCCS-I3: Program Testing				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.086	0.000	0.000
RDT&E Articles Qty				
DCGS-MC - USMC DCGS Testing and Evaluation Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.262	0.290	0.000	0.000
RDT&E Articles Qty				
DCGS-MC - Research and Development and Integration Efforts.				

UNCLASSIFIED

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-7 Operational Sys Dev	0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.300	0.290	0.000	0.000
RDT&E Articles Qty				
DCGS-MC - Engineering and Technical Services.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	3.384	3.625	0.000	0.000
RDT&E Articles Qty				
DCGS-MC - Design and Development of Hardware and Enterprise Services and test and development support to include Studies, analysis and evaluation.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.264	0.431	0.000	0.000
RDT&E Articles Qty				
TROJAN SPIRIT: Engineering and Technical Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.000	1.389	0.000	0.000
RDT&E Articles Qty				
TCAC: Software development, integration and testing for TCAC with COE 4.X and future releases.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.053	0.058	0.000	0.000
RDT&E Articles Qty				
TCAC: Program Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.092	0.186	0.000	0.000
RDT&E Articles Qty				
JSTARS: Engineering and Technical, Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.050	0.000	0.000
RDT&E Articles Qty				
JSTARS: Future MTI capability into JSTARS ground elements.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.451	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Software development of HHPM and Low Cost Imager; Improved Air Delivered Sensor (IADS) II; Encoder Transmitter Unit (ETU); Windows 2000 migration; and RSMS ver				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.129	0.020	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Management support - MCSC				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.360	0.135	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of Imaging Processor Board II				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of Urban Sensor Sets				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.103	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Support IOT&E and Increment II efforts.				

UNCLASSIFIED

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-7 Operational Sys Dev		0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS-MPC: EDM Design.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS-MPC: System development.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.450	0.000	0.000
RDT&E Articles Qty				
TPCS-MPC: Training development and test support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.167	0.567	0.000	0.000
RDT&E Articles Qty				
TPCS-MPC: Program support and management.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.260	0.318	0.000	0.000
RDT&E Articles Qty				
TPC: Integration of Hardware and Software of Spiral Development Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.033	0.049	0.000	0.000
RDT&E Articles Qty				
TPC: Contractor Support for Integration and Re-engineering Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.345	0.320	0.000	0.000
RDT&E Articles Qty				
TEG: Engineering, development, integration, test and security accreditation and integrated logistics support for Enhanced and TEG-RWS functionality.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.075	0.227	0.000	0.000
RDT&E Articles Qty				
TEG: Development and integration of required upgrades/interfaces to accommodate emerging airborne imagery sensor.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.313	0.339	0.000	0.000
RDT&E Articles Qty				
TEG: Program Management and Technical support for T&E of program refresh.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.061	0.063	0.000	0.000
RDT&E Articles Qty				
TEG: Development and integration of video capture and exploitation capability.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.214	0.116	0.000	0.000
RDT&E Articles Qty				
TEG: Development and integration of mandated DCGS/DIB interfaces and communication architectures.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.083	0.234	0.000	0.000
RDT&E Articles Qty				
TEG: Development of man-portable and reduced form-factor Common Data Link (CDL) capability.				

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-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.591	0.329	0.000	0.000
RDT&E Articles Qty				
TEG: Engineering/technical management and Infrastructure/Team IMINT shared costs.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.164	0.156	0.000	0.000
RDT&E Articles Qty				
TEG: Development and integration of mandated Joint interoperability and architectures to include IPv6, GIG and others.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.106	0.000	0.000
RDT&E Articles Qty				
WVPS (ANGEL FIRE): Engineering and Technical Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.104	0.216	0.000	0.000
RDT&E Articles Qty				
MSIDS: Program Management and technical support for product development of program hardware and software refresh.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.023	0.047	0.000	0.000
RDT&E Articles Qty				
MSIDS: Engineering support for program engineering group.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.016	0.207	0.000	0.000
RDT&E Articles Qty				
IER: Program Management and Technical Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.269	0.430	0.000	0.000
RDT&E Articles Qty				
IAS MOD KIT: Software Engineering and Management Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.517	0.633	0.000	0.000
RDT&E Articles Qty				
IAS MOD KIT: Program Logistic and Admin Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.037	0.039	0.000	0.000
RDT&E Articles Qty				
CIHEP: Engineering, Integration and Technical support for technical refresh and update of program hardware/software upgrades.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.067	0.091	0.000	0.000
RDT&E Articles Qty				
CIHEP: Program Management Support for the technical refresh and update of program hardware/software upgrades.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.084	0.000	0.000
RDT&E Articles Qty				
IBR: Engineering and technical service support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.250	0.000	0.000
RDT&E Articles Qty				
IBR: Test and Evaluation of USB ENTR.				

UNCLASSIFIED

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-7 Operational Sys Dev	0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.150	0.000	0.000
RDT&E Articles Qty				
IBR: Contract and Program Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	2.719	3.800	0.000	0.000
RDT&E Articles Qty				
TENCAP: Program support and management: evaluate national intelligence data systems for MAGTF applicability.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.804	0.151	0.000	0.000
RDT&E Articles Qty				
TENCAP: Technical assessments of emerging national data dissemination capabilities.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.150	0.000	0.000	0.000
RDT&E Articles Qty				
TENCAP: Evaluate the utility of emerging exploitation, automated and manual target recognition and detection tools.				
(U) Total \$	13.897	17.712	0.000	0.000
(U) C. OTHER PROGRAM FUNDING SUMMARY:				
		FY 2010		
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>OCO</u>
PMC BLI 474700 Intel Support Eq DCGSI	0.000	0.115		
PMC BLI 474700 Intel Support Eq TROJAN SPIRIT	11.629	6.498		
PMC BLI 465200 Mod Kit TCAC	9.065	0.000		
PMC BLI 465200 Mod Kit JSTARS	6.286	0.000		
PMC BLI 474700 Mod Kit TCAC	0.000	4.007		
PMC BLI 474700 Mod Kit JSTARS	0.000	2.381		
PMC BLI 474700 Intel Support Eq TRSS-PIP	62.265	12.307		
PMC BLI 474700 Intel Support Eq TPCS	8.723	9.294		
PMC BLI 474700 Intel Support Eq TPC	19.081	3.200		
PMC BLI 474700 Intel Support Eq JSIPS - TEG	19.567	1.359		
PMC BLI 474700 Intel Support Eq WFVPS	16.189	0.000		
PMC BLI 474700 Intel Support Eq MSIDS	1.580	5.340		
PMC BLI 465200 Mod Kit IER	5.876	0.000		
PMC BLI 465200 Mod Kits IAS MOD Kit	15.286	0.000		
PMC BLI 474700 Mod Kit IER	4.331	1.740		
PMC BLI 474700 Mod Kits IAS MOD Kit	0.000	1.059		
PMC BLI 474700 Intel Support Eq RREP	1.907	7.245		
PMC BLI 474700 Intel Support Eq CIHEP	18.622	5.091		
PMC BLI 474700 Intel Support Eq IBR	0.441	3.148		
PMC BLI 474700 Intel Support Eq TSCM	2.339	0.000		
(U) Related RDT&E:				
(U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II)				
(U) PE 0604270A (Intelligence and Electronic Warfare Common Sensor (IEWCS), TACJAM-A)				
(U) PE 0305885G (Tactical Cryptologic Program)				
(U) PE 0603730A (Tactical Surveillance System - Advanced Development), Army TENCAP, Project D560				
(U) PE 0603766A (Tactical Electronic Surveillance System - Advanced Development), Army TENCAP, Project D907				
(U) PE 0604740A (Tactical Surveillance System - Engineering Development), OSD TENCAP, Project D662				
(U) PE 0902398M (United States Special Operations Command), Chariot Program				
(U) PE 0605867N (SEW Surveillance/Reconnaissance Support), Project Z1034				

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
(D) ACQUISITION STRATEGY: (U) ACQUISITION STRATEGY GCCS-I3: This program promotes and ensures interoperability among USMC Intelligence Systems. Engineering and technical support is provided to PM Intel systems integration efforts for incorporation of the Common Operating Environment (COE) and GCCS-I3 software baseline. An Intelligence Integration Facility has been established at the Integrated Team Solution Facility. As such, this facility will be used as the hub for the entire integration effort of the GCCS-I3 initiative. (U) ACQUISITION STRATEGY DCGS-MC: The Marine Corps DCGS-MC project officer will leverage off of the USAF DCGS 10.2 Research, Development Test and Evaluation (RDT&E) effort and focus on the development of the DCGS Integrated Backbone (DIB) for the DCGS-MC. Additionally, the DCGS-MC will leverage off of MAGTF Legacy system DIB compliancy efforts. (U) ACQUISITION STRATEGY TROJAN SPIRIT: Procure and continuously improve USMC TROJAN SPIRIT systems to meet evolving Marine Corps operational needs while maintaining interoperability with the Army TROJAN Network and maintaining, as closely as practical, configuration common to the Army TROJAN SPIRIT systems. (U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements. (U) ACQUISITION STRATEGY JSTARS: JSTARS will utilize ongoing Army and Navy JSTARS contracts for development of client software, future CDL, MTI and MTI Sensor capabilities. IPv6 research was conducted in conjunction with other services and agencies. Incremental Development Plan (IDP) efforts will continue to the JSTARS software baseline. SPAWAR-Charleston, SC will oversee the integration and testing of these development efforts, ensuring USMC Command, Control, Communications, Computers and Intelligence (C4I) architecture capability. On-site contractor logistical support will be provided through the General Dynamics Intelligence, Information Command and Control, Equipment and Enhancements (ICE2) Equipment Logistics Support Contract out of Warner-Robbins Air Force Base, GA. Post Deployment Software Support (PDSS) will be provided through the Communications-Electronics Command (CECOM), Ft Monmouth, NJ and SPAWAR-Charleston, SC. Surveillance Control Data Link (SCDL) antenna and Ground Data Terminal (GDT) support will be through Cubic Defense Systems, San Diego, CA, via a General Dynamics support contract. (U) ACQUISITION STRATEGY TRSS: The TRSS are typically Non-Developmental Item (NDI) integration efforts, making maximum use of the efforts of hardware and software initially developed by other DoD organizations and programs. The initial phases of each Increments are cost-plus fixed-fee efforts, while the production phase, which encompasses the production, fielding, training and initial support of the systems, are firm-fixed price efforts. (U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities. (U) ACQUISITION STRATEGY TPC: The TPC program will reach Full Operational Capability in FY06 with the fielding of TPC to the Marine Corp Intelligence Activity. The TPC will refresh and upgrade the existing TPC equipment as technology advances. As new technology emerges, the current fielded systems will need incremental hardware and software refreshes to sustain operational requirements and to meet the ORD requirement of compliance with the NGA US Imagery and Geospatial Information System. The TPC program uses existing Government contracts for hardware/software development and integration. Full-time contractor support is provided through the Commercial Enterprise Omnibus Support Services (CEOss) contract. Additional full time engineering and integration support is provided by Northrop Grumman Information Technology TASC through the Information Technology Omnibus Procurement II (ITOP II) contract under the auspices of the MCSC Information Technology Modernization 2000 (ITM2K) Project Office.		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
(U) ACQUISITION STRATEGY TEG: The TEG Program Office leverages the advantages of its multi-service common software baseline and inherent Joint service interoperability. Development, integration, interoperability, security certification and accreditation and acquisition is divided between three prime contractors: Northrop Grumman Electronic Systems, Baltimore, MD (NGB) (through a classified contract); Space and Naval Warfare Systems Center, Charleston, SC (SSCC), and MTC Services Corporation. An incremental refresh is currently ongoing for the TEG Main. A subsequent spiral refresh will occur in FY09 for the TEG-RWS in order to keep systems modern and modular to meet emerging technologies. (U) ACQUISITION STRATEGY ANGEL FIRE: MCCDC maintains sponsorship of the Angel Fire UUNS. Marine Corps funds Air Force Research Lab to support the United States Air Force (USAF) in the development of subsequent sensor spirals as a technology demonstration supporting Marines operating in the CENTCOM AOR. In keeping with the Program Decision Memorandum (PDM) of November 2007. Development, integration, interoperability and testing are divided between AFRL, Los Alamos National Laboratory (LANL) and the NRL. (U) ACQUISITION STRATEGY MSIDS: A complete refresh of systems commenced in 3QTR FY02 and reached Full Operational Capability (FOC) in 2QTR FY03. Subsequent "increment refreshes" are under way in order to keep the systems from becoming unreliable and unsupportable. The increment refresh approach will effectively leverage technological advances. Each increment of upgrades will refresh 1/3 of the fielded components. (U) ACQUISITION STRATEGY IER: This program seeks to support a wide range of technology solutions based on the requests received from the Operating Forces and/or PM Intelligence Program of Record. The request must require solution evaluation beyond merely acquisition to be recommended as an ISR candidate. Each request will be validated by the ISR team and approved by the Project Officer and PM Intel before solution evaluation begins. The ISR program will use COTS/GOTS/NDI solutions to the greatest extent possible. (U) ACQUISITION STRATEGY IAS: The IAS program uses existing Government contracts for hardware and software development and integration. The system is comprised primarily of Commercial Off-the-Shelf (COTS) and Government Off-The-Shelf (GOTS) equipment. The IAS FoS utilizes an evolutionary strategy to ensure periodic incorporation of state-of-the-art technology that meets both current and future Marine Corps intelligence requirements while maintaining system readiness and reliability. (U) ACQUISITION STRATEGY CIHEP: CIHEP will use the Integrated Team Solutions Facility for hardware and software upgrades as necessary. CIHEP will coordinate acquisition of communications equipment with the Program Manager Communications section for planned upgrades to the Communications Module. SPAWAR, Charleston will be utilized for the technology dictates. (U) ACQUISITION STRATEGY IBR: In house contracts will be used to conduct engineering studies and test and evaluation activities associated with the Marine Corps implementation of the Integrated Broadcast Service, Common Message Format, ENTR integration and test and evaluation. (U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts. (U) E. MAJOR PERFORMERS: GLOBAL COMMAND AND CONTROL SYSTEM INTEGRATED IMAGERY AND INTELLIGENCE (GCCS I3) FY 08 Navy Systems Management Activity (NSMA),MTC Stafford, VA. Provides funds for Engineering and Program support services. SPAWAR, CHARLESTON, SC. Provides development, upgrades, integration, research and analysis for system refresh. FY 09 Navy Systems Management Activity (NSMA),MTC Stafford, VA. Continue to provide funds for Engineering and Program support services. SPAWAR, Charleston, SC. Continue development, upgrades, integration, research and analysis for system refresh. DCGS-I FY08 NSMA, MTC, Stafford, VA Integrated Teams Solution Facility, Stafford, VA Provided funds for Engineering & technical services, for DIB integration, and integration support. MARCORSYSCOM, (MCSC), Quantico, VA Provided funds for studies and analysis for the DIB integration. FY09 NSMA, MTC, Stafford, VA Integrated Teams Solution Facility, Stafford, VA Continue to provide Engineering & technical services, studies, analysis and evaluation for DIB integration, and integration support.		

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		May 2009
RDTE&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
TROJAN SPIRIT FY08 NSMA, MTC Stafford, VA - Provides funds for P3I prototype, technical and Engineering support to include EOA, DT and OT. FY09 NSMA, MTC Stafford, VA - Continue to provide funds for P3I prototype, technical and Engineering support. TACTICAL CONTROL AND ANALYSIS CENTER (TCAC) FY 08 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA) (MTC, Stafford, VA) Software development, integration and testing NAWC, Provided program management support. MCOTEA. Provided testing support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Provides funds for Engineering Support. FY 09 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA) (MTC, Stafford, VA) Continue to provide software development, integration and testing for future releases. MCOTEA. Continue to provide testing support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Continue to provide funds for Engineering Support. JOINT SURVEILLANCE TARGET ATTACK RADAR (JSTARS) FY 08 MARCORSYSCOM, (MCSC), Quantico, VA Provides funds for engineering support. SPAWAR, Charleston, S.C. Provides funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities research and development NSMA, (MTC, Stafford, VA), Provides engineering and technical support for development of software dissemination capability. FY 09 SPAWAR, Charleston, S.C. Continue to provide funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities research and development. NSMA, VA, Continue to provide engineering and technical support. TACTICAL REMOTE SENSOR SYSTEM (TRSS) FY08 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Provided for engineering and integration support. FY09 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Continue to provided for engineering and integration support. TEAM PORTABLE COLLECTION SYSTEM - MULTI-PLATFORM CAPABLE (TPCS-MPC) FY08 SPAWAR, CHARLESTON, S.C. Provided funds for prime systems integrator for TPCS-MPC EDM. NSMA (MTC), Stafford, VA, Provides funds for program management and engineering support services FY09 SPAWAR, CHARLESTON, S.C. Continue to provide funds for prime systems integrator for TPCS-MPC EDM. NSMA (MTC), Stafford, VA, Continue to provide funds for program management and engineering support services MCOTEA. Provided Testing Support. TOPOGRAPHIC PRODUCTION CAPABILITY (TPC) FY 08 MARCORSYSCOM, (MCSC), Quantico, VA Provided funds to TBD for continues integration and re-engineering support in support of modernization and technology refresh. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), (MTC, Stafford, VA), Provided funds for engineering & technical management support. FY 09 MARCORSYSCOM, (MCSC), Quantico, VA Continue to provide funds to TBD for continues integration and re-engineering support in support of modernization and technology refresh. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), (MTC, Stafford, VA), Continue to provide funds for engineering & technical management support.		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
TACTICAL EXPLOITATION GROUP (TEG) FY08 ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), (MTC, Stafford, VA), Provided funds for engineering & technical management support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Provided funds for Program and technical support. MARCORSYSCOM, (MCSC), Quantico, VA MCOTEA Provided funds for Testing and support. Office of Naval Research (ONR), Arlington, VA - Provided funds for Program and technical support. FY09 ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), (MTC, Stafford, VA), Continue to provide funds for engineering & technical management support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) - Continue to provide funds for Program and technical support. MARCORSYSCOM, (MCSC), Quantico, VA MCOTEA - Continue to provide funds for Testing and support. Office of Naval Research (ONR), Arlington, VA - Continue to provide funds for Program and technical support.		
ANGEL FIRE MANPACK SIDS (MP SIDS) FY 08 Navy Systems Management Activity (MTC, Stafford, VA). Provides funds for engineering and program management support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Provides funds for Engineering Support. FY 09 Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for engineering and program management support.		
INTELLIGENCE EQUIPMENT READINESS (IER) FY08 SPAWAR, CHARLESTON, S.C. Provides funds for engineering, testing, evaluation and training support. FY09 SPAWAR, CHARLESTON, S.C. Continue to provide funds for engineering, testing, evaluation and training support.		
INTELLIGENCE ANALYSIS SYSTEM (IAS) FY08 SPAWAR, CHARLESTON, S.C. Provides funds for development, upgrades, integration, research and analysis of hardware for system refresh. Navy Systems Management Activity (MTC, Stafford, VA). Provides funds for Integration and hardware upgrade study. FY09 SPAWAR, CHARLESTON, S.C. Continue to provide funds for development, upgrades, integration, research and analysis of hardware for system refresh. Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for Integration and hardware upgrade study.		
INTELLIGENCE BROADCAST RECEIVER (IBR) FY 09 NSMA, MTC, Stafford, VA - Provides for Program Management support for tech refresh and upgrade of program hardware and software. MCOTEA - Provide funds for testing and evaluation support.		
COUNTERINTELLIGENCE AND HUMAN INTELLIGENCE (HUMINT) EQUIPMENT PROGRAM (CIHEP) FY08 NSMA, MTC, Stafford, VA - Provides for Pgm Mgmt support for tech refresh and upgrade of program hardware and software. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Provides funds for Program and technical support. FY09 NSMA, MTC, Stafford, VA - Continue to provide for Pgm Mgmt support for tech refresh and upgrade of program hardware and software. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Continue to provide funds for Program and technical support.		

UNCLASSIFIED

Exhibit R-3 Cost Analysis					DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME			
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Systems					C2272 Intelligence C2 Systems			
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date		
TENCAP	Various	Titan	25.055	3.673	12/07	3.951	12/08				
TPCS	RCP	SPAWAR	5.793	0.000		0.300	12/08				
TRSS-PIP	RCP	VARIOUS	2.668	0.053	03/08	0.451	12/08				
JSTARS	WR/MPR	SPAWAR	0.000	0.019	12/07	0.115	12/08				
DCGSI	RCP	NSMA (MTC)	8.731	2.835	11/07	3.371	11/08				
JSIPS - TEG	MPR	VARIOUS	12.452	1.533	02/08	1.445	02/09				
Subtotal Product Development			54.699	8.113		9.633					
Remarks:											
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date		
TRSS-PIP	RCP	VARIOUS	11.071	0.436	01/08	0.155	01/09				
DCGS	RCP	VARIOUS	0.000	0.843	11/07	0.620	11/08				
MSIDS	RCP	VARIOUS	0.000	0.127	10/07	0.263	11/08				
TPC	RCP	VARIOUS	1.955	0.293	12/07	0.367	12/08				
TROJAN SPIRIT	RCP	NSMA (MTC)	0.794	0.264	12/07	0.431	12/08				
TPCS	RCP	NSMA (MTC)	7.916	1.167	12/07	0.567	12/08				
CIHEP	RCP	VARIOUS	0.125	0.104	01/08	0.130	01/09				
IAS MOD KIT	RC/WR	VARIOUS	3.818	0.786	01/08	1.063	01/09				
GCCS I3	RCP	VARIOUS	5.325	0.041	02/08	1.146	02/09				
TCAC	RCP	VARIOUS	3.418	0.871	12/07	1.322	12/08				
IBR	RCP	VARIOUS	0.286	0.000		0.484	01/09				
IER	WR	SPAWAR, Charleston	1.536	0.016	01/08	0.207	01/09				
ANGEL FIRE	RCP	VARIOUS	16.600	0.000		0.106	VAR				
JSTARS	RCP	VARIOUS	0.101	0.073	VAR	0.121	VAR				
Subtotal Support			52.945	5.021		6.982					
Remarks:											
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date		
TRSS-PIP	RCP	MCOTEA	0.452	0.000		0.103	01/09				
DCGS	RCP	MCOTEA	0.000	0.268	12/07	0.300	12/08				
TCAC	RCP	MCOTEA	0.060	0.025	11/07	0.125	11/08				
GCCS I3	MPR	JITC	0.199	0.000	10/07	0.080	10/08				
TPCS	MIPR	MCOTEA	1.137	0.000	02/08	0.150	10/08				
TEG	MIPR	MCOTEA	0.338	0.313	02/08	0.339	02/09				
Subtotal T&E			2.186	0.606		1.097					
Remarks:											
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date		
DCGS	RCP	MCSC	2.280	0.000		0.000					
TCAC	WR	NAWC	0.506	0.157	11/07	0.000					
Subtotal Management			2.786	0.157		0.000					
Remarks:											
Total Cost			112.616	13.897		17.712					

Exhibit R-4/4a Schedule Profile/Detail												DATE: May 2009																						
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT								PROJECT NUMBER AND NAME																						
RDT&E, N /BA 7 Operational Sys Dev				0206313M Marine Corps Communications Systems								C2272 Intelligence C2 Systems																						
GCCS-I3 MILESTONE CHART																																		
ID	Task Name	Duration	Start	Finish	Qtr 4, 2007		Qtr 1, 2008		Qtr 2, 2008		Qtr 3, 2008		Qtr 4, 2008		Qtr 1, 2009		Qtr 2, 2009		Qtr 3, 2009		Qtr 4, 2009		Qtr 1, 2010											
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	GCCS - I3	500 days?	Tue 4/1/08	Mon 3/1/10	GCCS - I3																													
2	FY-08	142 days?	Tue 4/1/08	Wed 10/15/08	FY-08																													
3	Documentation	1 day?	Fri 5/30/08	Fri 5/30/08	Documentation																													
4	SEP Update	1 day?	Fri 5/30/08	Fri 5/30/08	5/30																													
5	Contracting & Technical	1 day?	Wed 10/15/08	Wed 10/15/08	Contracting & Technical																													
6	PDR	1 day?	Wed 10/15/08	Wed 10/15/08	10/15																													
7	Test & Evaluation	88 days?	Tue 4/1/08	Thu 7/31/08	Test & Evaluation																													
8	TRR	1 day?	Tue 4/1/08	Tue 4/1/08	4/1																													
9	C & A Process	65 days?	Tue 4/1/08	Mon 6/30/08																														
10	IOT & E PII	66 days?	Thu 5/1/08	Thu 7/31/08																														
11	FY-09	173 days?	Mon 2/2/09	Wed 9/30/09	FY-09																													
12	Documentation	32 days?	Mon 2/16/09	Tue 3/31/09	Documentation																													
13	SEP Update	1 day?	Mon 2/16/09	Mon 2/16/09	2/16																													
14	Temp Review	1 day?	Tue 3/31/09	Tue 3/31/09	3/31																													
15	Contracting & Testing	75 days?	Mon 2/2/09	Fri 5/15/09	Contracting & Testing																													
16	CDR	11 days?	Mon 2/2/09	Fri 5/15/09	2/2																													
17	Test & Evaluation	131 days?	Wed 4/1/09	Wed 9/30/09	Test & Evaluation																													
18	TRR	1 day?	Wed 4/1/09	Wed 4/1/09	4/1																													
19	C & A Process	66 days?	Fri 5/15/09	Fri 8/14/09																														
20	IOT & E PI	63 days?	Wed 4/1/09	Fri 6/26/09																														
21	IOT & E PII	56 days?	Wed 7/15/09	Wed 9/30/09																														
22	FY-10	1 day?	Mon 3/1/10	Mon 3/1/10	FY-10																													
23	Documentation	1 day?	Mon 3/1/10	Mon 3/1/10	Documentati																													
24	SEP Update	1 day?	Mon 3/1/10	Mon 3/1/10	3/1																													
25	Test & Evaluation	1 day?	Mon 3/1/10	Mon 3/1/10	Test & Evaluati																													
26	TRR	1 day?	Mon 3/1/10	Mon 3/1/10	3/1																													

Line Item No. & Name	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N 0206313M/0206625M, C2272	0.041	1.226	

Line Item No. & Name

(APPN, BLI #, NOMEN)

(U) RDT&E,N 0206313M/0206625M, C2272

FY 2008

FY 2009

FY 2010

0.041

1.226

Exhibit R-4/4a Schedule Profile/Detail		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	May 2009
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

GCCS-I3	2008	2009	
Documentation	3Q		
SEP Upgrade	3Q		
Contracting and Technical	4Q		
PDR		1Q	
Test & Evaluation	3Q		
TRR	3Q		
C & A Process	3Q		
IOT & E PII	3Q		
Documentation		2Q	
SEP Upgrade		2Q	
Temp Review		3Q	
Contracting and Technical		2Q	
CDR		2Q	
Test & Evaluation		3Q	
TRR		3Q	
C & A Process		3Q	
IOT & E PII			

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

DCGS MILESTONE CHART

EVENTS	FY08	FY09	FY10
MILESTONES	A		B
CDD Approved			△
CPD			
Testing & Reviews			
DT			1
FAT			
Test Readiness Review			
IOT&E			
Contracts			
Contract Award	▲		
Production and Fielding			
Limited Deployment			
Full Deployment			
Fielding			

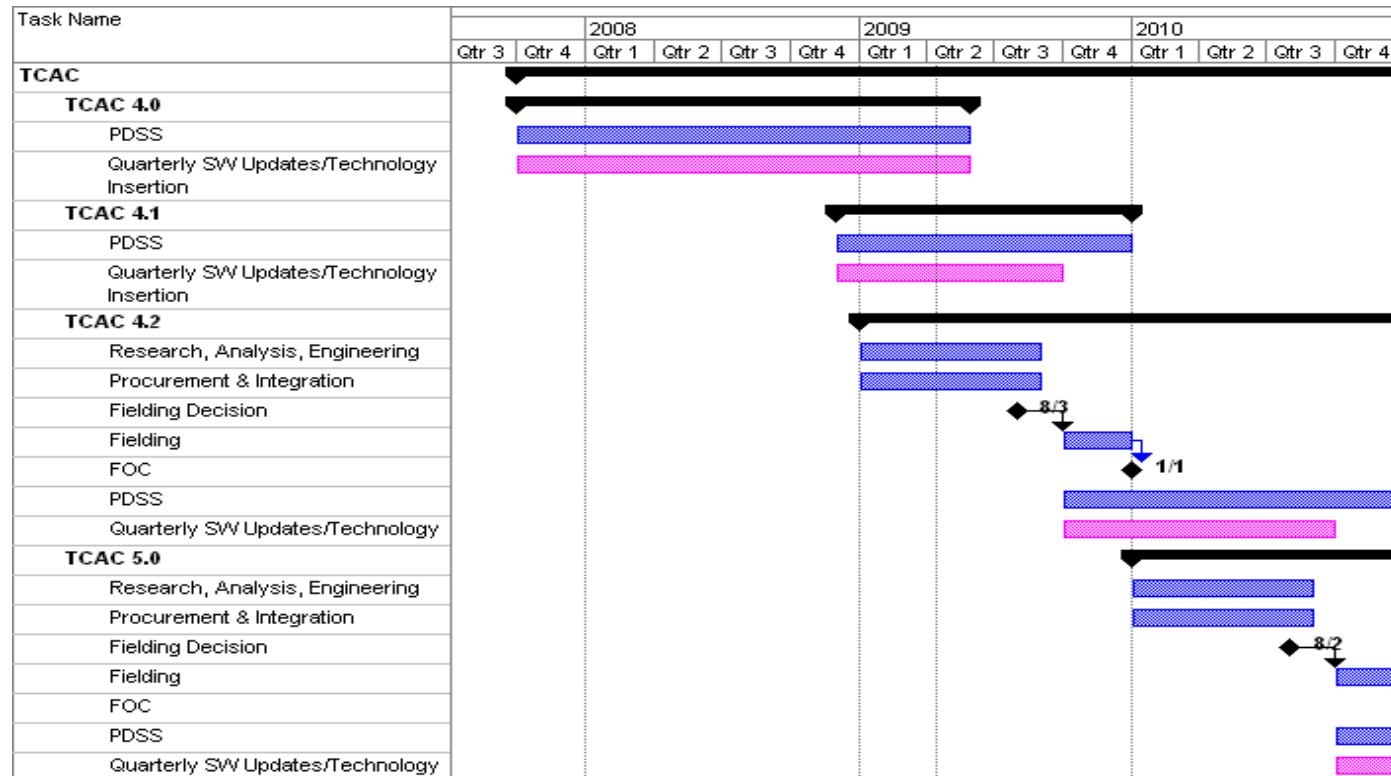
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(APPN, BLI #, NOMEN)			
(U) RDT&E,N (0206313M/0206625M)	3.946	4.291	
(U) PMC BLI 474700 Intell Supp Equip DCGS	0.000	0.115	-

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

DCGS	2008	2009	2010
MILESTONES A	A		B
CDD Approved			2Q
CPD			
Testing & Reveiws			
DT			1Q
FAT			
Test Readiness Review			
IOT&E			
Contracts			
Contract Award	1Q		
Production and Fielding			
Limited Deployment			
Full Deployment			
Fielding			

Exhibit R-4/4a Schedule Profile/Detail			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME		
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems		

TCAC MILESTONE CHART



Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N (0206313M/0206625M)

(U) PMC BLI 465200 Mod Kits TCAC

(U) PMC BLI 474700 Intel Support Equip TCAC

FY 2008

FY 2009

FY 2010

1.053

1.447

9.065

0.000

4.007

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

TCAC SCHEDULE DETAIL	2008	2009	2010		
TCAC 4.0	10-----20				
PC00	10-----20				
Quarterly SW Updates/Technology Insertion	10-----20				
TCAC 4.1	40-----40	40-----40			
PC00	40-----40	40-----40			
Quarterly SW Updates/Technology Insertion	40-----40	40-----40			
TCAC 4.2	40-----40				
Research, Analyt, Engineering		10-----20			
Procurement & Integration		10-----20			
Fidding Decision		30			
Fidding		30-40			
FOC		30-40			
PC00		30-----40			
Quarterly SW Updates/Technology Insertion		30-----40			
TCAC 6.0			20-----20		
Research, Analyt, Engineering			20-----20		
Procurement & Integration			20-----20		
Fidding Decision			30		
Fidding			30-----30		
PC00			30-----30		
Quarterly SW Updates/Technology Insertion			30-----30		

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

TPCS

Task Name	2008	2009	2010
Block 0			
FRP MS-C			
Team/Ground Production		May 07 - Oct 08	
FAT			
Team/Ground IOC			
MEWSS PIK Development		MEWSS PIK Development	
Production		Production	
MEWSS PIK Delivery		Feb 08 - Jun 08	
Block I			
SIGINT Suite Upgrades		Apr 08 - Mar 10	
IOT&E			May 10
MS C			Aug 10
Production			
Blk 1 IOC			
Block II			
Follow-on G-PIK Development			
Follow-on G-PIK OT&E			
Follow-on G-PIK MS-C			
Production			
Block III			
SIGINT Suite Upgrades			
Future PIK OT&E			
Future PIK MS-C			
Future PIK Production			
FOC (FY20)			

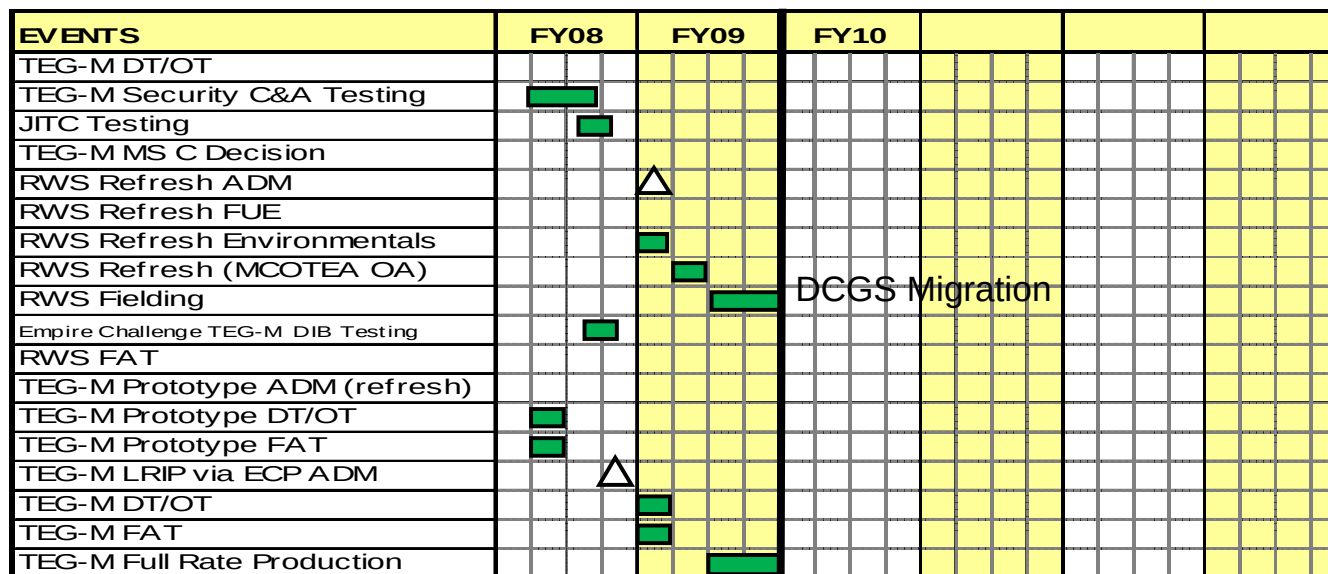
Program Funding Summary	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N (0206313M/0206625M)	1.167	1.017	
(U) PMC BLI 474700 Intel Support Equip TPCS	8.723	9.294	

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

TPCS-MPC SCHEDULE DETAIL	2008	2009	2010
Team Ground Production			
FAT			
Team/Ground IOC			
MEWSS PIK Development			
Production	2Q		
MEWSS Delivery PIK	2Q		
Block 1	3Q		
SIGINT Suite Upgrades	3Q		
IOT&E			3Q
MS C			4Q
Production			
Block 1 IOC			
Block 2			
Follow-on G-PIK Development			
Follow-on G-PIK OT&E			
Follow-on G-PIK MS C			

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems

TEG MILESTONE CHART

Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N (0206313M/0206625M)

(U) PMC BLI 474700 Intel Support Equip TEG

FY 2008 FY 2009 FY 2010

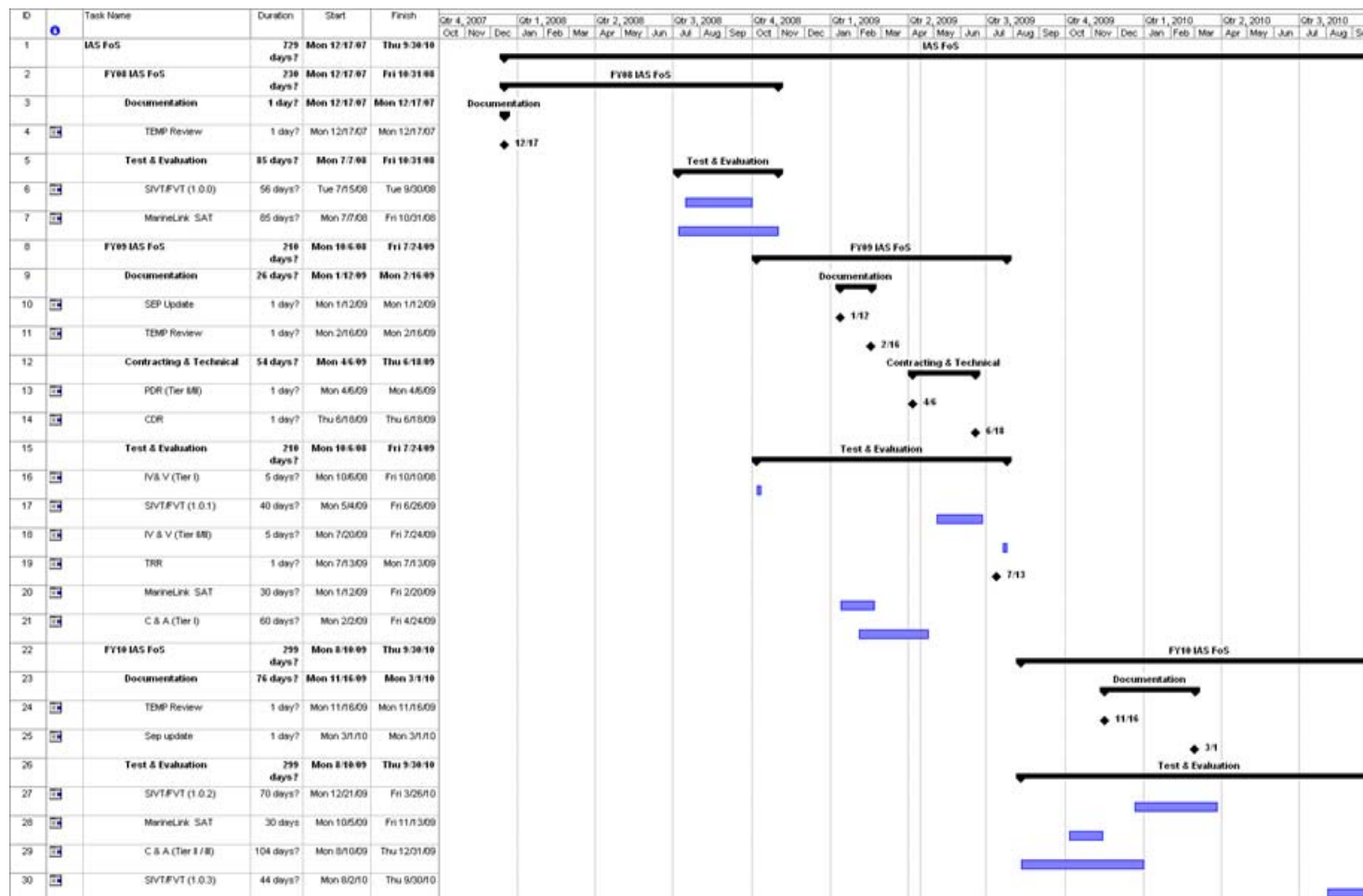
1.846 1.784

19.567 1.359

Exhibit R-4/4a Schedule Profile/Detail							DATE:
APPROPRIATION/BUDGET ACTIVITY							May 2009
PROGRAM ELEMENT							PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev							C2272 Intelligence C2 Systems
TEG FoS		2008	2009	2010			
TEG-M DT/OT							
TEG-M Security C&A Testing	2Q---3Q						
JITC Testing	3Q---4Q						
TEG-M MS C Decision							
RWS Refresh ADM			1Q				
RWS Refresh FUE							
RWS Refresh Environmentals			1Q				
RWS Refresh (MCOTEA OA)			2Q				
RWS Fielding			3Q---4Q				
Empire Challenge TEG-M DIB Testing	3Q---4Q						
RWS FAT			3Q				
TEG-M Prototype ADM (refresh)							
TEG-M Prototype DT/OT	2Q						
TEG-M Prototype FAT	2Q						
TEG-M LRIP via ECP ADM			4Q				
TEG-M DT/OT			1Q				
TEG-M FAT			1Q				
TEG-M Full Rate Production			3Q---4Q				

Exhibit R-4/4a Schedule Profile/Detail			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C2272 Intelligence C2 Systems	

IAS MILESTONE CHART



Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N (0206313M/0206625M)	0.786	1.063	
(U) PMC BLI 474700 Intel Support Equip IAS	0.000	1.059	
(U) PMC BLI 465200 Mod Kits IAS	15.286		

Exhibit R-4/4a Schedule Profile/Detail						DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev		0206313M Marine Corps Communications Systems				C2272 Intelligence C2 Systems	
IAS FOS SCHEDULE DETAIL	2008	2009	2010				
IOS Fos							
Documentation	1Q						
Temp Review	1Q						
Test & Evaluation	1Q						
S/W Integration & Test - 1.0	4Q						
MarineLink SAT		1Q					
FY09-IOS Refresh (IOSv2A)							
Documentation		2Q					
SEP Update		2Q					
Temp Review		2Q					
Contracting and Technical		3Q					
PDR		3Q					
CDR		3Q					
Test & Evaluation							
IV&V (Tier I)		1Q					
SWFVT (1.0.1)		2Q					
IV&V (TIER II)		3Q					
TRR		3Q					
MarineLink SAT		4Q					
C&A (Tier I)		2Q					
FY10 - IAS FoS							
Documentation							
SEP Update			1Q				
Temp Review			1Q				
Test & Evaluation			2Q				
S/W Integration & Test - 2.0							
MarineLink SAT			1Q				
C&A (Tier I)			1Q				
SWFVT (1.0.3)			1Q				

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems					PROJECT NUMBER AND NAME C2273 Air Operations C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL		
Project Cost	62.476	46.422	71.432	0.000	71.432		
RDT&E Articles Qty Not Applicable							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
The Composite Tracking Network (CTN) - will provide the Marine Air Ground Task Force (MAGTF) Commander a ground based sensor netting solution that significantly improves situational awareness by correlating sensor measurement data (target position, speed, heading, Identification Friend and Foe (IFF), etc.) from local and remote radars in the Cooperative Engagement Capability (CEC) network, which is then provided to the warfighter in the form of composite, real-time, air surveillance tracks. The Marine Air Command and Control System (MACCS) Sustainment - consists of various command and control agencies designed to provide the Aviation Combat Element (ACE) commander with the ability to monitor, supervise and influence the application of Marine aviation assets in support of MAGTF operations. The MACCS Sustainment provides funding to keep these fielded systems ready, relevant and capable until their functions are replaced by the Common Aviation Command and Control System (CAC2S). Single Integrated Air Picture (SIAP) - is the product of fused, common, continual, unambiguous tracks of airborne objects within the surveillance area. A SIAP will be achieved through the use of a model-based architecture computerized specification (the Integrated Architecture Behavior Model, or IABM). The IABM provides the common architectural standard (Platform-Independent Model, or PIM) for systems that make up the joint SIAP SoS. Each of the Services, through their respective SIAP program offices, develops Platform-Specific Models (PSM) of the IABM that are used to develop SIAP solutions for incorporation into Service-designated platforms. Theater Battle Management Core Systems (TBMCS) - provides the commander the automated tools necessary to generate, disseminate, and execute the Air Tasking Order (ATO), as mandated by the Chairman, Joint Chiefs of Staff in July 1993. It is an evolutionary acquisition, allowing for the rapid development/fielding of hardware and software to meet today's rapidly advancing technology. It is fielded to all four Marine Tactical Air Command Squadrons (MTACS) and the supporting establishment. Battlefield Target Identification Device (BTID) - In FY08 and beyond - will be a cooperative battlefield target identification device that employs encrypted, Ka band, millimeter wave, question and answer technology. It will consist of interrogator and transponder antennae, transceiver, and communications/electrical interface unit. It will be fielded as three variants: interrogator/transponder system for Expeditionary Fighting Vehicle (EFVs), Light Amphibious Vehicles (LAVs), and M1A1s; interrogator-only for Heavy Machine Gun (HMG), Anti-Tank Guided Missile (ATGM), and Target Location Data Hand-off System (TLDHS); and transponder-only system for combat support and combat service support vehicles. When fielded, mounted weapon systems will have the capability to identify targets as friendly or unknown, at ranges to 6 km, before engaging them. They and all other designated vehicles will also possess the capability to rapidly identify themselves as friendly to weapon systems equipped with comparable systems prior to being engaged. As a result, incidents of fratricide and collateral damage will decline, while the range at which targets may be engaged without fear of misidentification will increase dramatically. The system will be interoperable with Joint, Allied, and Coalition forces' cooperative target sharing. TIER I UAS - This program procures a capability for unmanned aircraft systems (UAS) to provide the company/detachment level with airborne reconnaissance to aid in detecting, identifying and engaging or avoiding enemy units. The UAS gather and transmit imagery of the tactical situation in near-real time at a range of up to ten kilometers. The Dragon Eye (DE) UAS was selected as the material solution for the SURSS Block 0 requirement and the Raven B UAS was selected as the solution for SURSS Block 1 requirement. Raven B is a five pound, hand launched, reusable vehicle with a wing span of 55 inches. As with the DE System, the air vehicle flies at an altitude of 300-500 feet above ground at a speed of approximately 35 knots. This system has a maximum duration of 90 minutes. A SURSS Block 1 Acquisition (RSTA) Kit, one Field Repair Kit (FRK), and one Initial Spares Package (ISP). The RSTA kit is used for mission planning, autonomous flight operations and mission product archiving. This is a joint US ARMY/USSOCOM Program. Funding moved to Program Element 0206625M, 2272 in FY10 and beyond. Combat Operations Center (COC) AN/TSQ-239 (V)2/3/4 is a deployable, self-contained, modular, scalable and centralized facility which provides digital, shared Command and Control/Situational Awareness functionalities to enhance the Common Operational Picture (COP) for the Command Element, Ground Command Element, Air Combat Element, and Logistics Combat Element. It is a commercial-off-the-shelf integrated hardware solution using unit provided radios, re-hosted tactical data systems, and available Marine Corps prime movers to transport the system. FY10 funds required for H/W refresh for Golf model 2010 upgrades. Funding also supports 2 MEB Urgent Universal Needs Statement (UUNS) (Mar 09) to include OEF supplemental kits of various configurations, Tactical Collaboration Work Station (TCWS) integration (MCCDC) LOC and OIF Force retrograde. TIER II UAS - This is a combined Navy (PE#0305204N) and Marine Corps (PEs#0206313M/#0206625M) budget submission. The Tier II UAS is a new start program that will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore in the GWOT and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE# 0305204N. This program was moved to Program Element 0206625M in FY10 and beyond. Remote Video Viewing Terminal (RVVT) - Provides warfighter with video connectivity to multiple types of aerial platforms (Pioneer, Dragon Eye, Raven B, Shadow, Predator, Fire Scout, and Litening Pod on P-3, AV8-B, and F/A-18). Data is displayed to Regimental Combat Teams and Forward Air Controller operators who coordinate with higher headquarters for fires. Program Office is pursuing a MS B in FY10. Common Aviation Command and Control System (CAC2S) is a coordinated modernization effort to replace the existing aviation command and control equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate aviation operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules to support the Marine Air Ground Task Force (MAGTF), Joint, and Coalition Forces. The CAC2S integrates the functions of aviation command and control into an interoperable system that will support the core competencies of all Marine Corps warfighting concepts. The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenets of Expeditionary Maneuver Warfare and fosters joint interoperability. CAC2S Increment I will replace legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC). Joint Interface Control Office (JICO) Support System (JSS) - will provide net-centric services through a transformational management system to enable internet protocol-based networks of the future to operate efficiently with current tactical networks. It will manage complex tactical networks through an automated toolset and information repository that enables planning, management and analysis of communications before, during and after operations.							

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-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2273 Air Operations C2 Systems	
B. Accomplishments/Planned Program					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		2.184	0.200	0.665	0.000
RDT&E Articles Qty					
CTN: Engineering Development Model (EDM) hardware and software development and support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		4.289	0.000	7.975	0.000
RDT&E Articles Qty					
CTN: System and software development. Interface design development for CTN interfaces to Common Aviation Command and Control System (CAC2S) and the AN/TPS-59 long range radar, G/ATOR and FoS upgrades.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		1.019	1.137	2.530	0.000
RDT&E Articles Qty					
CTN: Testing and Evaluation: Developmental Testing, Operational assessment, and Interoperability Test and Evaluation (IOT&E) support. Certification of interfaces.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		1.001	0.174	2.160	0.000
RDT&E Articles Qty					
CTN: Program management support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		6.416	1.571	0.484	0.000
RDT&E Articles Qty					
MACCS SUSTAINMENT: Hardware obsolescence upgrades for the TAOM, SAAWF, TIU, MCIU, ADCP, CIS and CDLS.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		4.448	2.270	0.766	0.000
RDT&E Articles Qty					
MACCS SUSTAINMENT: Planned software sustainment for the TAOM, ADCP and CDLS.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.218	0.000	0.000	0.000
RDT&E Articles Qty					
MACCS SUSTAINMENT: Engineering and technical support services for government DT & OT. System engineering discrepancy report corrections, IA certification, and logistics and training development of system operation and maintenance manuals.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		2.460	0.000	3.185	0.000
RDT&E Articles Qty					
SIAP: Service portion of the System Engineering process to develop Joint SIAP capability. Includes support to engineering initiatives as well as test/evaluation of SIAP Joint Program Office products. Development of engineering products/documents and DoD Architecture Framework Products (TVs, SVs)					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.062	0.000
RDT&E Articles Qty					
JICO Support System: Planned Software Sustainment & Integration Support					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.028	0.000
RDT&E Articles Qty					
JICO Support System: Engineering and Technical Support Services for Government DT and OT					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.402	0.000
RDT&E Articles Qty					
JICO Support System: Program Management Support					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost		0.326	0.287	0.220	0.000
RDT&E Articles Qty					
TBMCS: USMC TBMCS development.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost		0.300	0.203	0.180	0.000
RDT&E Articles Qty					
TBMCS: MCTSSA TBMCS software support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost		0.343	0.260	0.366	0.000
RDT&E Articles Qty					
TBMCS: Program management support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost		0.193	0.077	0.083	0.000
RDT&E Articles Qty					
TBMCS: Test and Evaluation for TBMCS Upgrades Joint Interoperability.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.700	0.942	1.852	0.000
RDT&E Articles Qty					
BTID: Program management support.					
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost		0.890	0.920	0.500	0.000
RDT&E Articles Qty					
BTID: Joint component led SDD.					

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-7 Operational Systems Development	0206313M Marine Corps Communications Systems		C2273 Air Operations C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	2.265	0.552	0.227	0.000
RDT&E Articles Qty				
BTID: SDD Developmental Test Articles.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.080	0.080	0.100	0.000
RDT&E Articles Qty				
BTID: Life Cycle Cost Estimate.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.234	0.000	0.000	0.000
RDT&E Articles Qty				
TIER I: Frequency issues occurred in OIF. Funding was utilized to develop Video Down-Link Upgrades.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.033	0.000	0.000	0.000
RDT&E Articles Qty				
TIER I: Battery Testing.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.176	0.000	0.000
RDT&E Articles Qty				
TIER I: Mini digital data-Link development for small aircraft systems.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.200	0.200	0.000	0.000
RDT&E Articles Qty				
TIER I: Funds programmed for the ongoing ACTD to apply lessons learned from OEF/OIF to assist in the development of new concepts of operations (CONOPS) and tactics, techniques and procedures (TTP).				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.804	1.562	5.830	0.000
RDT&E Articles Qty				
COC: Continued capability solution module testing and ECP development as COC evolves into a MAGTF C2 COC in support of OEF/OIF and RWOT.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.925	0.725	1.326	0.000
RDT&E Articles Qty				
COC: Program Management Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.077	0.080	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: Integration of common UAS ground control station with Marine Corps C4I network.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.620	0.620	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: MCCDC Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.200	0.214	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: Operational Testing (OT)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: Development, testing and evaluation of Tier II UAS and payloads.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	3.763	10.772	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: Navy Program Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.771	1.843	0.000	0.000
RDT&E Articles Qty				
TIER II UAS: Program Management Support .				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	5.820	2.118	3.900	0.000
RDT&E Articles Qty				
CAC2S: Program management support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.579	1.456	2.350	0.000
RDT&E Articles Qty				
CAC2S: System development testing, operational assessment, and live interface testing in accordance with continued sensor interface/integration, communications interface/interoperability validation. Additionally, regression testing following DT & OT				

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 IBA-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2273 Air Operations C2 Systems
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		16.032	7.605	13.056
RDT&E Articles Qty				0.000
CAC2S: Design, Development and Testing of Engineering Developmental Models (EDM). Contract activities to complete System Development and Demonstration (SDD) to include Trouble Reports (TR) corrections following Gov't DT. Additionally, MROC				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		2.501	9.026	19.771
RDT&E Articles Qty				0.000
CAC2S: Data and information fusion componet hardware and software development and support, including developmental testing, field user evaluations and operational assessments.				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		0.785	1.352	2.750
RDT&E Articles Qty				0.000
CAC2S: Engineering, Management & Logistics Support				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.664
RDT&E Articles Qty				0.000
RVVT: Preparation of MS C and Full Rate Production and Fielding activities				
(U) Total Cost \$		62.476	46.422	71.432
0.000				
(U) C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO
(U) PMC, BLI #464000, CTN	10.365	15.761	24.871	24.871
(U) PMC, BLI #464000, MACCS	58.819	2.586	6.347	0.075
(U) PMC, BLI #464000, TBMCS	1.786	3.889	3.455	
(U) PMC, BLI #464000, TIER I UAS	13.444	0.000	0.000	0.000
(U) PMC, BLI #474700, TIER I UAS	0.000	15.348	0.000	0.000
(U) PMC, BLI #4757000, TIER I UAS	0.000	0.000	28.580	13.000
(U) RDT&E.N P.E. #0305232M, C2272	0.000	0.000	0.553	0.553
(U) RDT&E.N P.E. #0305234M, C2272	0.000	0.000	18.763	18.763
(U) PMC, BLI #4757000, TIER II UAS	0.000	0.000	13.823	13.823
(U) PMC, BLI #464000, BTID	0.000	6.361	0.000	0.000
(U) PMC, BLI #419000, COC	132.079	39.387	19.832	0.000
(U) PMC, BLI #464000, CAC2S	47.360	9.928	4.086	19.832
(U) APN, BLI # 044400 STUAS	0.000	0.000	10.099	10.099
(U) PMC, BLI # 464000, RVVT	0.000	0.000	6.325	6.325
(U) D. ACQUISITION STRATEGY:				
MACCS SUSTAINMENT - The family of systems that comprise the MACCS Sustainment program include all of the currently fielded Air Command and Control assets. These include the Tactical Air Operations Module (TAOM), Communications Data Link System (CDLS), Sector Anti-Air Warfare Facility (SAAWF), Air Defense Communication Platform (ADCP), Direct Air Support Central Airborne (DASCA), Direct Air Support Central Airborne System (DASCAS), TAOM Interface Unit (TIU), Multi-Channel Interface Unit (MCIU), Communication Interface System (CIS), Joint Tactical Information Distribution System (JTIDS), and Joint Range Extension (JRE).				
CTN - The USMC's CTN acquisition strategy is to participate in the USN's program procurement and testing, making necessary modifications to support the Marine Corps' requirement.				
CAC2S will employ an evolutionary acquisition strategy utilizing an incremental and phased approach for development and fielding of the CAC2S. The CPD identifies two increments to achieve the full requirements of CAC2S. This acquisition strategy addresses Increment I of the CAC2S development process and focuses on the requirements that will modernize the assault and air support, air defense and control, and ACE battle management capabilities of the MACCS. Increment I of the CAC2S will be accomplished through a two phased approach. Phase 1 will address the requirements to establish the baseline CAC2S capabilities for the MACCS and improve AC2 performance and effectiveness. Phase 2 will address the requirements for remaining ACE BMC2 requirements				
BTID - Economy of scales dictate a strategy that highly leverages Joint/coalition evolutionary development and acquisition efforts. The Coalition Combat ID Advanced Concept Technology Demonstration (CCID ACTD) completed in October 2005 resulted in a process that evaluated the Military Utility of a Standard NATO Agreement (STANAG) 4579 Compliant millimeter wave (mmW) Target Identification system and other technologies with the objective of identifying the best system to satisfy the Marine Corps requirement. The resultant analysis and action by the Army Marine Corps Board in March 2006 directed a combined Service program with the Army (PD TIMS) as the Component Lead Program. During FY07 the JFCOM sponsored Bold Quest exercise refined the BTID Ground-to-Ground requirement. In July 2008 the Army and the Marine Corps signed a Memorandum of Agreement which outlines the path to execute the program. The Army will be the lead for the Combined Program. The USMC will resource unique Marine Corps integration and programmatic requirements through the System Development and Demonstration (SDD) Program Phase. In Jan 2009, USD AT&L designated BTID as a Special Interest program.				
Single Integrated Air Picture (SIAP) - is a systems engineering effort that will be utilized to reduce risk and increase interoperability for legacy and future USMC Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems. A SIAP capability will be achieved through Service implementation of the Integrated Architecture Behavior Model (IABM) into their C4ISR systems. The IABM is an executable specification that unambiguously defines the functions needed to process, store, and update aerospace tracks and associated data over both existing tactical data links and emerging higher performance IP-routed packet-switched networks to support tactical engagements in a Joint and Coalition warfighting environment.				
Theater Battle Management Core Systems (TBMCS) - TBMCS is an ACAT 1AC, USAF Program with joint interest/oversight. It was mandated by the Chairman, Joint Chiefs of Staff in July 93 for Air Tasking Order (ATO) Interoperability among all services. The USMC will not be letting any competitive contracts for TBMCS, but following the USAF lead, utilizing USAF TBMCS contracts and fielding only the joint modules of TBMCS. As USMC unique requirements are identified and funded, they will be provided to the USAF (to include funding) for inclusion within TBMCS utilizing the USAF delivery order (fixed price) contract. Over the course of the FYDP, the USMC will leverage USAF software support activities vice funding strictly USMC software support.				
TIER I UAS , formerly known as Small Remote Scouting System(SURSS) - The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired SURSS requirements. The SURSS Block 0, Dragon Eye, was the first increment and is currently fielded to deployed units. For the Block 1 increment the USMC adopted the USSOCOM Rucksack Portable UAV (RPUAV) ORD, which meets the USMC's requirement and began migrating to the joint materiel solution, the Raven B. The Army Program Manager for Unmanned Aircraft Systems is the program manager of record. By leveraging off of this joint program already in the production phase, the USMC is able to rapidly field systems to deployed warfighters.				
TIER II UAS - The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements.				
RVVT - Program initiation in FY10 with entrance into the acquisition process at MS C. Anticipate MS C and initial contract award in late FY10. The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements				
COC - The Combat Operations Center (COC) AN/TSQ-239 (V)2/3/4 is the foundation of USMC C2, meeting near term communications and network requirements in OEF, OIF and RWOT. There is a continuing developmental effort to evolve the COC into a fully integrated MAGTF C2 capability.				

EXHIBIT R-2a, RDT&E Project Justification			DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		May 2009	
RDT&E, N /BA-7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2273 Air Operations C2 Systems	
(U) E. Major Performers:					
Performer	Location	Description	FY 2008 Award Date	FY 2009 Award Date	FY 2010 Award Date
COC					
General Dynamics	Scottsdale, AZ	System Development	Jan 2008	Jan 2009	Jan 2010
SPAWAR	Charleston, SC	Support Services	Jan 2008	Jan 2009	Jan 2010
Coherent Systems	Lexington Park, MD	System Development	Jan 2008		
BTID					
NSWC	Crane, IN	Engineering Services	Jan 2008	Nov 2008	Nov 2009
GDIT	Stafford, VA	MCSC/MCCDC Spt	Jan 2008	Dec 2008	Dec 2009
SIAP					
RNB Technologies	Stafford, VA	Engineering/Analysis	May 2008	Dec 2008	
MACCS					
NGES	Woodland Hills, CA	TAOC Engineering	Jun 2008		Jun 2010
NAVSEA PEO IW	Patuxent River MD	In Service Engineering	Dec 2008	Jun 2009	
NSWC	Crane IN	Engineering services	Apr 2008		
JSS					
MCTSSA	Camp Pendelton, CA	HW and SW Test Support			Oct 2009
NSWC	Crane, IN	System Integration Support			Oct 2009
CEOss (TBD)	TBD	Program Support			
TIER I					
Wright Patterson /	WPAFB Ohio	Eng Serv - Digital Data Link	Apr 2008		
NSWC Dahlgren	Dahlgren VA	Eng Serv -Wearable Computer Ves	Dec 2007	Apr 2009	
NATICK	Redstone AL	Engineering Services	Mar 2008		
TBD	TBD	Product Development			Mar 2010
CTN					
NSWC	Crane IN	Mobility platform integ.	Jan 2008	Dec 2008	
Lockheed Martin	Syracuse NY	Radar Integration			
Science Applications	St. Petersburg, FL	Antenna development and production			
International Corporation					
Northrop	Stafford, VA	CEOss Support			
Raytheon	Raytheon	H/W and S/W Test Support			
NSWC	Dahlgren, VA	SW CM Support			
CAC2S					
NSWC	Crane IN				
NSWC	Dahlgren, VA				
General Dynamics	Scottsdale, AZ	SE Services		Jun-09	
General Dynamics	Columbia, MD	SE Services		Jun-09	
TBD		SDS Integration			Aug-10
RVVT					
MCCDC	Quantico VA	Requirements definition			Jan 2010
OEM	TBD	Engineering Services			Mar 2010

UNCLASSIFIED

Exhibit R-3 Cost Analysis						Date: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys				C2273 Air Operations C2 Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY10 Award Date						
MACCS SUSTAINMENT	RCP	NGES, Woodland Hills, CA	10.924	3.525	06/08	2.275	06/09	0.788	06/10						
MACCS SUSTAINMENT	MIPR	NSWC Crane		1.648	04/08										
MACCS SUSTAINMENT	RCP	NAVSEA PEO IWS 6		1.500	12/08										
JSS	MIPR	NSWC Crane						0.062	10/09						
SIAP	RCP	MCSC, Quantico, VA	46.146	0.935	02/08			2.699	02/10						
SIAP	RCP	IAMD, Huntsville (Tier I)	0.000	1.230	02/08										
TBMCS	MIPR	ESC, Hanscom AFB	0.723	0.275	01/08	0.205	01/09	0.205	01/10						
TBMCS	MIPR	Greater Hampton, VA	0.100	0.279	03/08	0.195	03/09	0.200	03/10						
CTN	WR	NSWC, Crane, IN	5.015	2.173	10/07	0.200	01/09	5.920							
CTN	WR	NAVSEA PEO IWS 6		3.435	01/08			2.000							
COC	WR	SPAWAR, Charleston	6.187	0.183	01/08	0.687	01/09	4.870	01/10						
COC	RCP	General Dynamics	22.199	1.975	01/08	1.600	01/09	2.186	01/10						
COC	RCP	Coherent, Johnstown, PA	0.000	0.299	01/08										
COC	WR	NSWC, Crane, IN	0.000	0.220	01/08										
TIER II	WR	MCTSSA, San Diego, CA		0.077	01/08	0.080	01/09								
BTID	WR	NSWC, Crane, IN	1.968	0.890	01/08	0.920	11/08	1.500	11/09						
BTID	WR	USMC/Army Contractor				0.552	01/10								
BTID	WR	NAVAIR, Pax River, MD		0.145	09/08										
BTID	RCP	NAVAIR, Pax River, MD		1.830	09/08										
TIER I	MIPR	Wright Patterson AFB OH		0.219	04/08										
TIER I	WR	NASW, Dahlgren VA		0.015	12/07	0.257	04/09								
TIER I	MP	NATICK RedStone AL		0.200	03/08										
CAC2S	RCP	Raytheon, San Diego, CA	156.105	15.244	10/07	0.000	n/a								
CAC2S	WR	SPAWAR (Charleston)	4.762	0.302	10/07	0.300	01/09	0.500	01/10						
CAC2S	WR	DAHLGREN	2.056	1.161	10/07	6.109	01/09	11.562	01/10						
CAC2S	WR	SPAWAR (San Diego)	56.662	0.166	10/07	0.000	n/a								
CAC2S	RCP	NCTSI	0.098	0.030	12/07	0.000	n/a	0.250	01/10						
RVVT	RCP	OEM	0.000	0.000		0.000		0.169	03/10						
Subtotal Product Development			312.945	37.956		13.380		32.911							
Remarks															

UNCLASSIFIED

Exhibit R-3 Cost Analysis											Date:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				May 2009								
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys				C2273 Air Operations C2 Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY10 Award Date						
MACCS Sustainment	WR	NGES, Woodland Hills, CA	2.697	0.126	06/08	0.363	06/09	0.127	06/10						
MACCS Sustainment	RCP	CRI, Van Nuys, CA	1.200	1.984	01/08										
MACCS Sustainment	RCP	Katmai, Van Nuys, CA		0.606	07/08	1.203	01/09	0.335	01/10						
MACCS Sustainment	WR	NSWC, Crane, IN	3.272	1.011	01/08										
JSS	WR	MCTSSA, CPndlttn,CA						0.028	10/09						
SIAP	RCP	RNB Technologies, Stafford, VA		0.165	05/08			0.486	02/10						
SIAP	MIPR	NSWC, Crane, IN		0.130	08/09										
TBMCS	WR	MCTSSA, CPndlttn,CA	0.115	0.243	11/07	0.175	11/08	0.180	11/09						
TIER I	WR	NSWC, Carderock, MD		0.000	02/08										
TIER I	RCP	MCSC, Quantico, VA		0.000		0.119	03/09								
TIER II	C/FP	Eagan Mcallister, Lexington		0.620	01/07	0.620	01/09								
BTID	RCP	MCSC, Quantico, VA		1.070	01/08	1.022	12/08	1.077	12/09						
CTN	WR	NSWC, Dahlgren, VA	0.000	0.425	11/07			0.570	11/09						
CTN	WR	NSWC, PHD		0.241	01/08										
CTN	WR	NGMS, Stafford, VA		0.300	01/08										
CTN	WR	SPAWAR		0.046	01/08										
CTN	WR	AF Cost Analysis Branch		0.084	01/08										
CAC2S	WR	MCSC, Quantico, VA	4.051												
CAC2S	WR	MCSC, Quantico, VA	2.812												
CAC2S	RCP	MCSC, Quantico, VA	4.258	0.308	10/07	3.000	06/09	1.133	08/10						
CAC2S (TAD)	RCP	MCSC, Quantico, VA						0.500	11/09						
CAC2S	WR	NSWC, Crane, IN	1.272	1.026		9.220	01/09	17.816	10/09						
CAC2S	WR	JITC	0.471	0.179		0.200	01/09	0.600	01/10						
CAC2S	RCP	Lockheed Martin	0.914												
CTN	RCP	Lockheed, Syracuse, NY	0.000	0.100	01/08										
RVVT	MIPR	MCCDC	0.000	0.000		0.000		0.200	11/09						
Subtotal Support			21.062	8.664		15.922		23.052							
Remarks:															

UNCLASSIFIED

Exhibit R-3 Cost Analysis										Date: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys				C2273 Air Operations C2 Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY10 Award Date						
CTN	WR	NWAS, Corona, CA	0.594	0.467	11/07	0.200	11/08	0.470	11/09						
CTN	WR	Aberdeen Test Center		0.079	01/08	0.110	11/09								
CTN	WR	NATICK		0.012	01/08	0.030	11/09								
CTN	WR	John Hopkins APL		0.114	01/08			0.150	02/10						
CTN	WR	JTIC						0.050	02/10						
CTN	WR	MCTSSA						0.040	02/10						
CTN	WR	NSWC Crane						0.300	02/10						
CTN	WR	NAVSEA PEO IWS 6						0.200	02/10						
CTN	WR	DT				0.197	02/09	1.000	02/10						
CTN	WR	MACS-24		0.057	01/08			0.100	02/10						
CTN	WR	MCOTEA TESTING	0.055	0.315	07/08	0.600	07/09	0.370	07/10						
COC	MIPR	MCOTEA TESTING	0.590					0.100	01/10						
TIER II	WR	MCOTEA TESTING		0.200	02/08	0.214	12/08								
BTID	WR	MCOTEA TESTING						0.102	11/09						
MACCS SUSTAINMENT	WR	NSWC, Crane, IN	0.030	0.168	01/08										
TIER I	WR	NSWC, Carderock, MD		0.033	02/08										
TBMCS	WR	MCOTEA TESTING	0.177	0.121	01/08	0.077	01/09	0.082	01/10						
CAC2S	MIPR	MITRE	2.068	0.117	10/08	0.978	01/09	1.500	11/09						
CAC2S	WR	MACCS X	0.920	0.044	10/08	0.000	n/a	0.500	01/10						
CAC2S	WR	MCTSSA, CPndltn, CA	1.356			0.500	n/a	1.000	12/09						
CAC2S		MCOTEA TESTING	2.150	1.400	10/08	0.500	01/09	0.750	03/10						
CAC2S	RCP	PAX RIVER		0.013	10/08										
CAC2S	WR	NWAS, Corona, CA	0.000	0.907		0.750	01/09	1.816	11/09						
RVVT	MIPR	MCOTEA TESTING	0.000	0.000		0.000		0.169	11/09						
Subtotal T&E			7.291	4.047		4.156		8.699							
Remarks:															

UNCLASSIFIED

Exhibit R-3 Cost Analysis				Date: May 2009										
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2273 Air Operations C2 Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY10 Award Date					
TBMCS	FFP	QNA, Stafford, VA	0.911	0.244	01/08	0.175	03/09	0.182	03/10					
CTN	WR	MCSC, Quantico, VA	0.284	0.285	10/07	0.174	10/08	2.160	10/09					
CTN	IDIQ	NGMS, Stafford, VA	2.527	0.361	11/07									
TIER II	IDIQ	QNA, Stafford, VA		0.741	03/08	1.000	12/08							
TIER II	WR	MCSC, Quantico, VA		0.030	01/08	0.636	01/09							
TIER II	WR	NSWC, Dahlgren VA				0.182	10/08							
TIER II	TBD	Navy PMA-263		3.763	01/08	10.797	01/09							
MACCS Sustainment	FFP	QNA, Stafford, VA		0.514	11/07									
JSS	WR	MCSC, Quantico, VA						0.102	10/09					
JSS	RC	TBD						0.300	03/10					
COC	IDIQ	NGMS, Stafford, VA	4.001	0.052	01/07									
CAC2S	IDIQ	NGMS, Stafford, VA	21.946											
CAC2S	IDIQ	QNA, Stafford, VA		5.596	01/08			3.900	11/09					
CAC2S	RCP	NOBLIS	4.646											
CAC2S	RCP	Booze Allen Hamilton	0.717	0.224										
RVVT	IDIQ	QNA Stafford	0.000	0.000		0.000		0.126	03/10					
Subtotal Management			35.032	11.810		12.964		6.770						
Remarks:														
Total Cost			376.330	62.476		46.422		71.432						

EXHIBIT R4/4a Project Schedule/Detail						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Development				PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence/Electronic War Sys (MIP)			PROJECT NUMBER AND NAME C2273 Air Operations C2 Systems		
TIER II UAS PROGRAM SCHEDULE									
STUAS/Tier II Integrated Test Program Schedule									
	FY09				FY10				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Milestones									
Integrated and Operational Test									
SE Technical Reviews									
Reports									
Test Articles									
System Production									
Program Funding Summary									
(APPN, BLI#, NOMEN)									
	FY 2008	FY 2009	FY 2010						
(U) PMC, BLI #475700, TIER II UAS	0.000	0.000	13.823						
(U) RDT&E,N, C2273, TIER II UAS	5.431	13.529	0.000						
(U) RDT&E,N, C2272, TIER II UAS	0.000	0.000	18.763						

EXHIBIT R4/4a Project Schedule/Detail							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RD&E, N /BA 7 Operational Sys Development				PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence/Electronic War Sys (MIP)			PROJECT NUMBER AND NAME C2273 Air Operations C2 Systems	
TIER II UAS Schedule Profile								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010			
MS B				4Q				
MS C								
Marine Corps IOC								
Navy IOC								
Solicitation				2Q				
Contract Award				4Q				
Demo System					1Q			
Test Assets					4Q			
Testing					2Q-4Q			
Milestone B Docs				3Q-4Q				
Milestone C Docs					3Q-4Q			
LRIP								
FRP								

Exhibit R-4/4a
Page 51 of 119

Exhibit R-4/4a
Page 52 of 119

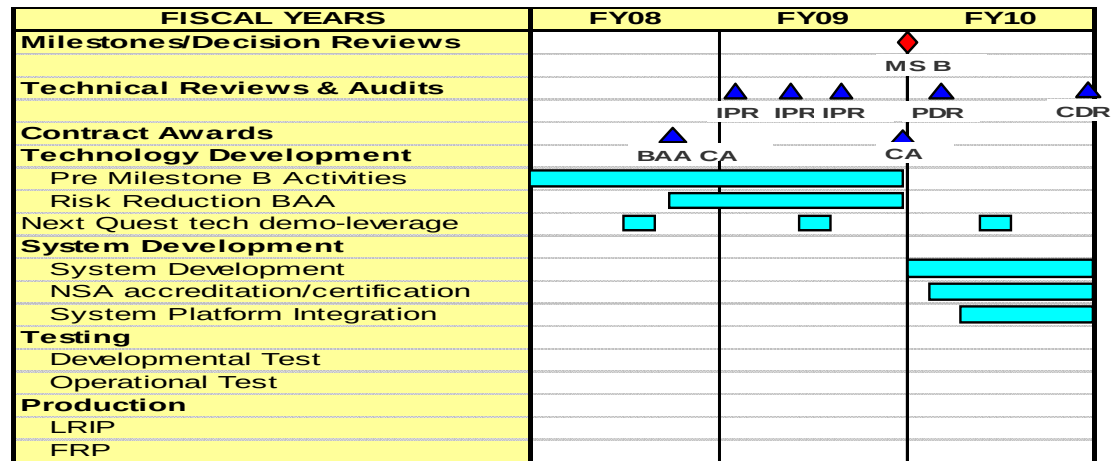
Exhibit R-4/4a Schedule Profile/Detail

Date:

May 2009

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N /BA 7 Operational Sys DevPROGRAM ELEMENT
0206313M Marine Corps Communications SysPROJECT NUMBER AND NAME
C2273 Air Operations C2 Systems

BATTLEFIELD TARGET IDENTIFICATION DEVICE PROGRAM SCHEDULE



Program Funding Summary

FY 2008

FY 2009

FY 2010

(APPN, BLI#, NOMEN)

(U) RDT&E,N, C2278, BTID	0.000	0.030	0.000
(U) RDT&E,N, C2273, BTID	3.935	2.494	2.679
(U) PMC, BLI # 464000, BTID	0.000	6.361	0.000

BTID SCHEDULE	FY 2008	FY 2009	FY 2010			
Milestone A						
Milestone B			1st Qtr			

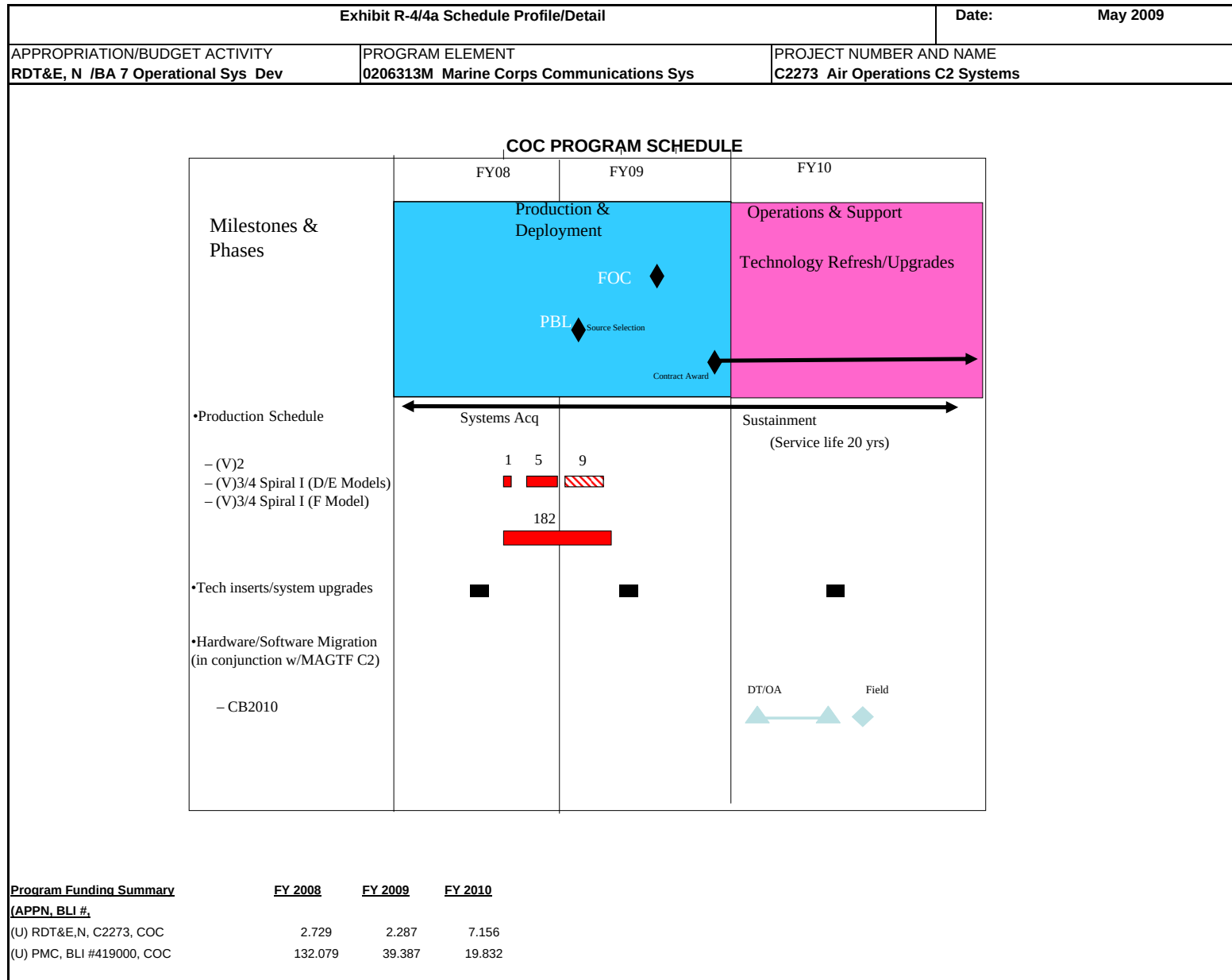


Exhibit R-4/4a
Page 55 of 119

Exhibit R-4-4a Project Schedule/Detail			DATE:	MAY 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME		
RDT&E, N /BA 7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2273 Air Operations C2 Systems		

MACCS PROGRAM SCHEDULE



Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N, C2273, MACCS

(U) PMC, BLI #464000, MACCS

FY 2008	FY 2009	FY 2010
11.082	3.846	1.272
59.376	2.586	6.422

Exhibit R-4/4a
Page 57 of 119

Exhibit R-4-4a Project Schedule/Detail			DATE: May 2009																																																																																																													
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME																																																																																																												
RDT&E, N /BA 7 Operational Systems Development		0206313M Marine Corps Communications Systems		C2273 Air Operations C2 Systems																																																																																																												
CAC2S PROGRAM SCHEDULE																																																																																																																
EVENTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4" style="background-color: #cccccc;">FY09</th> <th colspan="4" style="background-color: #cccccc;">FY10</th> </tr> <tr> <th style="background-color: #cccccc;">Q1</th> <th style="background-color: #cccccc;">Q2</th> <th style="background-color: #cccccc;">Q3</th> <th style="background-color: #cccccc;">Q4</th> <th style="background-color: #cccccc;">Q1</th> <th style="background-color: #cccccc;">Q2</th> <th style="background-color: #cccccc;">Q3</th> <th style="background-color: #cccccc;">Q4</th> </tr> <tr> <td style="text-align: center;">Phase 1 Integration</td> <td style="text-align: center;">▲</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Phase 1 Contract Award for SE Services</td> <td></td> <td style="text-align: center;">★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Phase 2 Contract Award for SDS Integration</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">★</td> <td></td> </tr> <tr> <td style="text-align: center;">Phase 2 Integration</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">▲</td> </tr> </table>				FY09				FY10				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Phase 1 Integration	▲							Phase 1 Contract Award for SE Services		★						Phase 2 Contract Award for SDS Integration						★		Phase 2 Integration							▲																																																												
FY09				FY10																																																																																																												
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																																																																																																									
Phase 1 Integration	▲																																																																																																															
Phase 1 Contract Award for SE Services		★																																																																																																														
Phase 2 Contract Award for SDS Integration						★																																																																																																										
Phase 2 Integration							▲																																																																																																									
Program Funding Summary <u>(APPN, BLI #, NOMEN)</u> (U) RDT&E,N, C2273, CAC2S (U) PMC, BLI #464000, CAC2S																																																																																																																
	FY 2008	FY 2009	FY 2010																																																																																																													
	26.717	21.557	41,827																																																																																																													
	47.360	9.928	4,086																																																																																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">CAC2S SCHEDULE DETAIL</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td>Milestone B (completed 1st Qtr FY03)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SDD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone C</td> <td>1st Qtr</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phase 1 Contract Award for SE Services</td> <td></td> <td>3rd Qtr</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phase 2 Contract Award for SDS Integration</td> <td></td> <td></td> <td>4th Qtr</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phase 2 Integration</td> <td></td> <td></td> <td>4th Qtr</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>					CAC2S SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010						Milestone B (completed 1st Qtr FY03)									SDD									Milestone C	1st Qtr								Phase 1 Contract Award for SE Services		3rd Qtr							Phase 2 Contract Award for SDS Integration			4th Qtr						Phase 2 Integration			4th Qtr																																																		
CAC2S SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010																																																																																																													
Milestone B (completed 1st Qtr FY03)																																																																																																																
SDD																																																																																																																
Milestone C	1st Qtr																																																																																																															
Phase 1 Contract Award for SE Services		3rd Qtr																																																																																																														
Phase 2 Contract Award for SDS Integration			4th Qtr																																																																																																													
Phase 2 Integration			4th Qtr																																																																																																													

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-7 Operational Sys Dev	0206313M Marine Corps Comm Systems	C2274 Command & Control Warfare Systems						
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Project Cost	51.250	8.903	19.887	0.000				
RDT&E Articles Qty	N/A	N/A	N/A	N/A				
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
(U) Command and Control (C2) Warfare Project includes the following tactical electronic intercept, direction finding, and electronic attack systems: Counter RCIED Electronic Warfare (USMC CREW) provides full spectrum protection against high and low power threats. USMC CREW systems are capable of being integrated in all Marine Corps Tactical Ground Vehicles. This program is an ongoing effort to develop new techniques, improve capabilities, enhance software and develop upgrades to counter evolving threat and prevent technology obsolescence. * Radio Reconnaissance Equipment Program (RREP) provides the Radio Battalions, Radio Reconnaissance Platoons (RRP) and the Marine Corps Forces Special Operations Command (MARSOC) Direct Support Team with mission unique Signals Intelligence/Ground Electronic Warfare (SIGINT/EW) Equipment suites. The latest suite of equipment, the SIGINT Suite 3 (SS-3) is comprised of technology and equipment necessary to prosecute advanced wireless signals. The RRP Marines are trained and equipped to support the full spectrum of Marine Expeditionary Unit Special Operations Capable (MEU SOC) mission profiles as well as provide real time, imbedded support to any special operations scenario. This provides the supported commander greater flexibility in employing his SIGINT assets when the use of conventional Radio Battalion assets are not feasible. RREP is currently maintaining the SS-3 using a spiral development approach that inserts the latest technology into the suite as it becomes mature and MARSOC. This enables the SS-3 to remain a current platform against emerging threats. Communication Emmitter Sensing and Attacking System (CESAS)/(FLAMES) The AN/ULQ-30 CESAS is an advanced Electronic Attack (EA) system that can be mounted in a variety of platforms including High Mobility Multi-Purpose Wheeled Vehicles (HMMWV), waterborne platforms, helicopters, and the MV-22. The system provides Marine Air-Ground Task Forces (MAGTFs) with the capability to detect, disrupt and deny enemy radio communications during amphibious assaults and subsequent operations ashore. The system is being integrated into existing armored vehicle assets, currently M1151s and into an MRAP vehicle by FY10. GROUND-BASED OPERATIONAL SURVEILLANCE SYSTEM (GBOSS) – This program provides persistent (24/7) tracking of objects of interest through the use of a unique, 360-degree, high resolution, day/night surveillance capability for enhanced target recognition and situational awareness, which enables timely and appropriate response options (direct air attack, indirect fire, and ground patrol/attack). Each system can operate independently and consists of five main components: elevated platform, multi-spectral sensor suite, radar sensor systems suite, as well as a ground control system (GCS) and a remote ground station (RGS). The elevated platform is a 106-foot tower. The optical sensor consists of an Electro-Optic color daytime camera, an Infrared black and white day or night camera, spotter scope, a laser range finder (LRF) and a laser pointer (LP). The radar sensor systems are modular and composed of tailorable sensor groups using multiple ground-sensing technologies (doppler, thermal, seismic, acoustic, audio) consisting of multimode sensors for detection, location and classification to perform mission tasks such as perimeter defense, surveillance and situational awareness. The Remote Ground Station allows the user to operate from a significant distance away from the system. * RREP moves to PE 0206625M, C2272, Intelligence C2 Systems in FY10 and out.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	9.824	5.244	5.581					
RDT&E Articles Qty								
USMC CREW - Product Development								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	3.945	1.121	1.276					
RDT&E Articles Qty								
USMC CREW - Support								

UNCLASSIFIED

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-7 Operational Sys Dev	0206313M Marine Corps Comm Systems	C2274 Command & Control Warfare Systems		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.223	0.575	0.575	
RDT&E Articles Qty				
USMC CREW - Test and Evaluation				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.825	0.624	0.639	
RDT&E Articles Qty				
USMC CREW - Management				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.473	0.919	0.000	
RDT&E Articles Qty				
RREP - Project Management and Technical support for Research and Testing of New Technology for System Refresh.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	2.279	0.700	0.000	
RDT&E Articles Qty				
CESAS - Training				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	2.709	1.200	0.000	
RDT&E Articles Qty				
CESAS - Testing Support				

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-7 Operational Sys Dev	0206313M Marine Corps Comm Systems	C2274 Command & Control Warfare Systems			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	2.000	3.720	0.000		
RDT&E Articles Qty					
CESAS - Enhanced Electronic Warfare Capability					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.250	1.000	0.000		
RDT&E Articles Qty					
CESAS - Develop TTPs					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	1.500	2.500	0.000		
RDT&E Articles Qty					
CESAS - Integration of the M1165					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	7.500	0.000	3.816		
RDT&E Articles Qty					
GBOSS - Product Development					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	7.200	0.000	1.000		
RDT&E Articles Qty					
GBOSS - Support					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	4.100	0.000	5.000		
RDT&E Articles Qty					
GBOSS - Test and Evaluation.					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	7.422	0.000	2.000		
RDT&E Articles Qty					
GBOSS - Management.					
(U) Total \$	51.250	14.403	19.887		
(U) C. OTHER PROGRAM FUNDING SUMMARY:					
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total
(U) PMC BLI 465200 Mod Kit FLAMES (CESAS)	10.563	0.000	0.000		0.000
(U) PMC BLI 474700 Mod Kit FLAMES (CESAS)	0.000	8.876	0.000		0.000
(U) PMC BLI 643800 Phy Sec Equip (GBOSS)	203.857	26.344	0.000	1.700	1.700
(U) PMC BLI 474700 Intel Spt Equip (RREP)	1.907	7.245	1.081		1.081
(U) PMC BLI 652000 EOD Sys (USMC CREW)	183.36	214.645	11.181		11.181
(U) Related RDT&E:					
(U) PE 0206625M, C2272 RREP	0.000	0.000	0.819		0.819

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-7 Operational Sys Dev

0206313M Marine Corps Comm Systems

C2274 Command & Control Warfare Systems

(U) D. ACQUISITION STRATEGY:

Counter RCIED Electronic Warfare (USMC CREW) Continue to develop new techniques, improve capabilities, enhance software and develop upgrades to counter evolving threat and prevent technology obsolescence. Activities include waveform development, non-recurring engineering for system enhancements and capability upgrades, integration of the enhancements and the tests/government studies required to support these changes. This will upgrade of existing systems to the next technology spiral (CREW 2.1).

RREP: The Radio Reconnaissance Equipment Program (RREP) SIGINT Suite -3 (SS-3) is the fourth generation of Radio Reconnaissance Equipment. Previous systems were developed as repackaged and hardened Commercial Off-The-Shelf (COTS) items. The Radio Reconnaissance Teams (RRT) used systems for three years and replaced the entire suite with the next generation of equipment. An equipment refresh every three years allowed the RRTs to take advantage of the newest commercial single channel scanner technology when the previous generation of equipment required replacement. The SS-3 will focus on the use of the technology and equipment necessary to prosecute advanced wireless communications devices and begin spiral development. RREP will incorporate and integrate cutting edge technologies through the use of COTS/Government off the Shelf (GOTS) and Non-Development Items (NDI) components.

CESAS: Designated an ACAT IV (T) Program (December 2006) and represents the state-of-the-art available in a tactical Electronic Warfare (EW) platform. Its components are suitable for integration into multiple ground and air platforms. It is designed to operate with other CESAS platforms to detect and attack threat emitters, as well as, being mission configured to work cooperatively with multiple ground and airborne platforms to attack target emitters. CESAS also leverages previous integration experience from the Team Portable Collection System (TPCS) program for commonality of equipment and cooperative communications capabilities.

GBOSS: The acquisition approach has been to use existing government contracts (U.S Army/U.S. Air Force) for Commercial-Off-the-Shelf (COTS) and Government-Off-the-Shelf (GOTS) material and services that meet the basic requirements of the UUNS and give priority to materials and services already integrated into an existing or similar architecture. This approach is the most expeditious to deliver equipment and services to the forces in theater.

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-7 Operational Sys Dev**0206313M Marine Corps Comm Systems****C2274 Command & Control Warfare Systems****(U) E. MAJOR PERFORMERS:****COUNTER RADIO CONTROLLED IMPROVISED EXPLOSIVE DEVICE ELECTRONIC WARFARE (USMC CREW)**

FY08 NAVSEA, (JHUAPL), Baltimore, MD Provide radio frequency engineering and test support.
 NSWC, (Dahlgren), Dahlgren, VA Provide co-site mitigation for fielded assets and test support.
 NSWC, (CRANE), Crane, IN Provide logistics, radio frequency mapping and engineering support.
 SPAWAR, Charleston, NC Provide system integration, test support, and logistics

FY09 NAVSEA, (JHUAPL), Baltimore, MD Continue to provide radio frequency engineering and test support.
 NSWC, (Dahlgren), Dahlgren, VA Continue to provide co-site mitigation for fielded assets and test support.
 NSWC, (CRANE), Crane, IN Continue to provide logistics, radio frequency mapping and engineering support.
 SPAWAR, Charleston, NC Continue to provide system integration, test support, and logistics

FY10 NAVSEA, (JHUAPL), Baltimore, MD Continue to provide radio frequency engineering and test support.
 NSWC, (Dahlgren), Dahlgren, VA Continue to provide co-site mitigation for fielded assets and test support.
 NSWC, (CRANE), Crane, IN Continue to provide logistics, radio frequency mapping and engineering support.
 SPAWAR, Charleston, NC Continue to provide system integration, test support, and logistics

RADIO RECONNAISSANCE EQUIPMENT PROGRAM (RREP)

FY08 NSMA, (MTC), ITsFAC, Stafford, VA. Provided integration facility and program management support
 NSWC, Crane, Provided System Engineering support, begin development of DAR S/W and H/W Solution

FY09 NSMA, (MTC), ITsFAC, Stafford, VA. Continue to provide integration facility and program management support
 NSWC, Crane, Continue to provide System Engineering support, begin development of DAR S/W and H/W Solution

COMMUNICATION EMMITTER SENSING AND ATTACKING SYSTEM (CESAS/FLAMES)

FY08 NSMA, (MTCSC), Stafford, VA. Provided integration facility and program management support

FY08 NAVSEA, Provides research and development of techniques, tactics and procedures
 SPAWAR, Charleston, SC Provides system integration, test support, and logistics

TEAM GROUND BASED OPERATIONAL SURVEILLANCE SYSTEM

FY08 NSWC (Crane) Provide systems integration, test support, prototype hardware
 NAVAIR UAS system integration, test support, logistics
 PM NV (Ft. Belvoir) Provide co-site mitigation for expeditionary systems integration
 NSWC (Dahlgren) Provide engineering and test support

FY10 NSWC (Crane) Provide systems integration, test support, prototype hardware
 NAVAIR UAS system integration, test support, logistics
 PM NV (Ft. Belvoir) Provide co-site mitigation for expeditionary systems integration
 NSWC (Dahlgren) Provide engineering and test support

Exhibit R-3 Cost Analysis				DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Comm Systems			C2274 Command & Control Warfare Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
USMC CREW	RCP	NAVSEA	0.000	4.249	04/08								
USMC CREW	VAR	Various	0.000	5.575	11/08	5.244	Var	5.581	Var				
RREP	RCP	NSWC, Crane	1.052	0.218	01/08	0.450	01/09						
RREP	RCP	NSMA (MTC)	0.345	0.174	12/07	0.464	12/08						
GBOSS	RCP	NSWC, Crane	0.000	7.500	10/08	0.000		3.816	Var				
CESAS	WR/RCP	NAVSEA	1.995	0.250	10/08	0.250	12/09	0.000					
CESAS	MIPR	PENN STATE	0.000	0.000		0.250	10/09						
CESAS	WR/RCP	NRL	0.000	0.000		0.135	11/09						
CESAS	VAR	Various	0.000	0.000		2.451	Var						
CESAS	RCP	GTRI	0.000	0.500	11/08	0.000		0.000					
CESAS	RCP	NPGS	0.000	0.500	11/08	0.000		0.000					
CESAS	RCP	RNB	0.000	1.000	10/08	0.000		0.000					
Subtotal Product Development			3.392	19.966		9.244		9.397					
Remarks:													
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
USMC CREW	RCP	Various	0.000	3.086	Var	1.121	Var	1.276	Var				
USMC CREW	WR	NSWC	0.000	0.652	10/08	0.000	Var	0.000	Var				
USMC CREW	RCP	SPAWARSYSCEN	0.000	0.207	10/08	0.000	Var	0.000	Var				
RREP	RCP	MCSC	0.020	0.081	Var	0.005	Var						
CESAS	WR/RCP	SPAWARSYSCEN	3.398	2.459	Var	2.715	12/09						
CESAS	MIPR	NGIT	0.000	0.000		1.214	10/09						
CESAS	VAR	Various	0.000	0.000		0.700	Var						
CESAS	RCP	RNB	0.000	1.529	10/08	0.205	Var						
GBOSS	RCP	NAVAIR	0.000	7.200	10/08	0.000		1.000	Var				
Subtotal Support			3.418	15.214		5.960		2.276					
Remarks:													
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
USMC CREW	Var	Various	0.000	0.673	Var	0.575	Var	0.575	Var				
USMC CREW	MIPR	YPG/EPG	0.000	0.500	12/08	0	Var	0	Var				
USMC CREW	wr	NSWC,DD	0.000	0.050	12/08	0		0					
GBOSS	RCP	PM NV Ft. Belvoir	0.000	4.100	09/08	0		5.000	Var				
CESAS	WR/RCP	SPAWARSYSCEN	0.000	1.250	Var	0		0.000					
CESAS	WR/RCP	NAVSEA	0.000	0.250	10/08	0		0.000					
CESAS	MIPR	IEWTD	0.000	0.500	12/08	0.500	Var	0.000					
CESAS	MIPR	ABERDEEN	0.000	0.000		0.355							
CESAS	RCP	MCOTEA	0.000	0.500	11/08	0.345	Var	0.000					
Subtotal T&E			0.000	7.823		1.775		5.575					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
USMC CREW	Var	Various	0.000	0.825	Var	0.624	Var	0.639	Var				
GBOSS	RCP	NSWC	0.000	7.422	Var	0.000		2.000	Var				
Subtotal Management			0.000	8.247		0.624		2.639					
Remarks:													
Total Cost			6.810	51.250		17.603		19.887					

Exhibit 4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys	PROGRAM ELEMENT NUMBER AND NAME 0206313M MARINE CORPS COMMUNICATIONS SYSTEMS	PROJECT NUMBER AND NAME: C2274 Command & Control Warfare Systems

COUNTER RCIED

INCREMENTS/SPIRALS	Prior	FY08	FY09	FY10
CREW 2.0	MS C			
Milestones			FOC	
Chameleon		8,947		
Hunter		1,142		
Directional Antenna			CAD 3,000	
CREW 2.1/CVRJ	MS C			
Milestones			CAD	
Contract Award				
Production Readiness Reviews				
Production and Deployment			8,000	
PSI Sustainment Contract				
Contract Award			CAD	
Implementation			CLS/PSI	
JCREW 3.3 (PMS 408)			MS B	
Milestones				
Production Readiness Reviews				
Production and Deployment				
WAVEFORM DEVELOPMENT	WAVEFORM UPDATES TO MEET FUTURE RCIED			
Source/Appr - \$M	Prior	FY08	FY09	FY10
USMC	CREW 2.0		Increment 2.1 (CVRJ)	
Procurement	234.66	183.83	214.65	11.18
RDT&E	5.00	15.82	7.57	8.07
O&MMC	50.14	87.00	85.52	44.59
OCF (MRAP/JIEDDO)				
Procurement	758.64	9.32	0.00	0.00
RDT&E	3.47	2.00	0.00	0.00
O&MMC	7.50	12.50	0.00	0.00
	1,059.41	310.46	307.73	63.84

Program Funding Summary

Program

Funding

Summary

(APPN, BLI #,

NOMEN)

(U) RDT&E PE

(U) PMC BLI

	FY 2008	FY 2009	FY 2010
(U) RDT&E PE	15.817	7.564	8.071
(U) PMC BLI	183.36	214.645	11.181

Exhibit 4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME:
RDT&E, N /BA 7 Operational Sys	0206313M MARINE CORPS COMMUNICATIONS SYSTEMS	C2274 Command & Control Warfare Systems

USMC CREW	FY 2008	FY 2009	FY 2010
CREW 2.0 Waveform Development	1Q - 4Q		
CREW 2.1 MDA Decision		2Q	
CREW 2.1 Waveform Development		1Q - 4Q	1Q - 4Q
JCREW 3.3 Milestone B	4Q		
JCREW 3.3 Milestone C			
JCREW 3.3 FOC			
JCREW 3.3 Waveform Development			
Program Support	1Q - 4Q	1Q - 4Q	1Q - 4Q
Test and Evaluation (all iterations)	1Q - 4Q	1Q - 4Q	1Q - 4Q
Program Management	1Q - 4Q	1Q - 4Q	1Q - 4Q

Exhibit 4/4a Schedule Profile/Detail		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys		PROGRAM ELEMENT NUMBER AND NAME 0206313M MARINE CORPS COMMUNICATIONS SYSTEMS	
		PROJECT NUMBER AND NAME: C2274 Command & Control Warfare Systems	

	FY06	FY07	FY08	FY09	FY10
UNUSSE	N (Theater GBOSS)				
Acquisition					
Milestones					
Requirements	UUN J SON		SON REV1	MS A CDD	MS B
System Engineering					
Design Reviews	I RAID	2nd Camera Sensor	RADAR	TBD Sensors	PDR
Configuration	I RAID		RADAR	TBD Sensors	
Testing					
Contractual					
MOA	MOA		MOA	MOA	RFP
RFP					
Sustainment Support	CLS SUPPORT				CLS TO ORGANIC

Program Funding Summary

	<u>2008</u>	<u>2009</u>	<u>2010</u>
(U) RDT&E PE			
0206313M MC	26.222	0	11.816
(U) PMC BLI	203.857	8.984	19.720

GBOSS Schedule		2008	2009	2010				
Milestone A			2Q					
Milestone B				1Q				
Milestone C								
PDR				4Q				
CDR								
DRR								
FRP								
Requirements			1Q					
Contracts								
Sustainment		1Q-4Q	1Q-4Q	1Q-4Q				
DT		1Q-4Q		1Q				
OA/OT				2Q				
FOT				1Q				

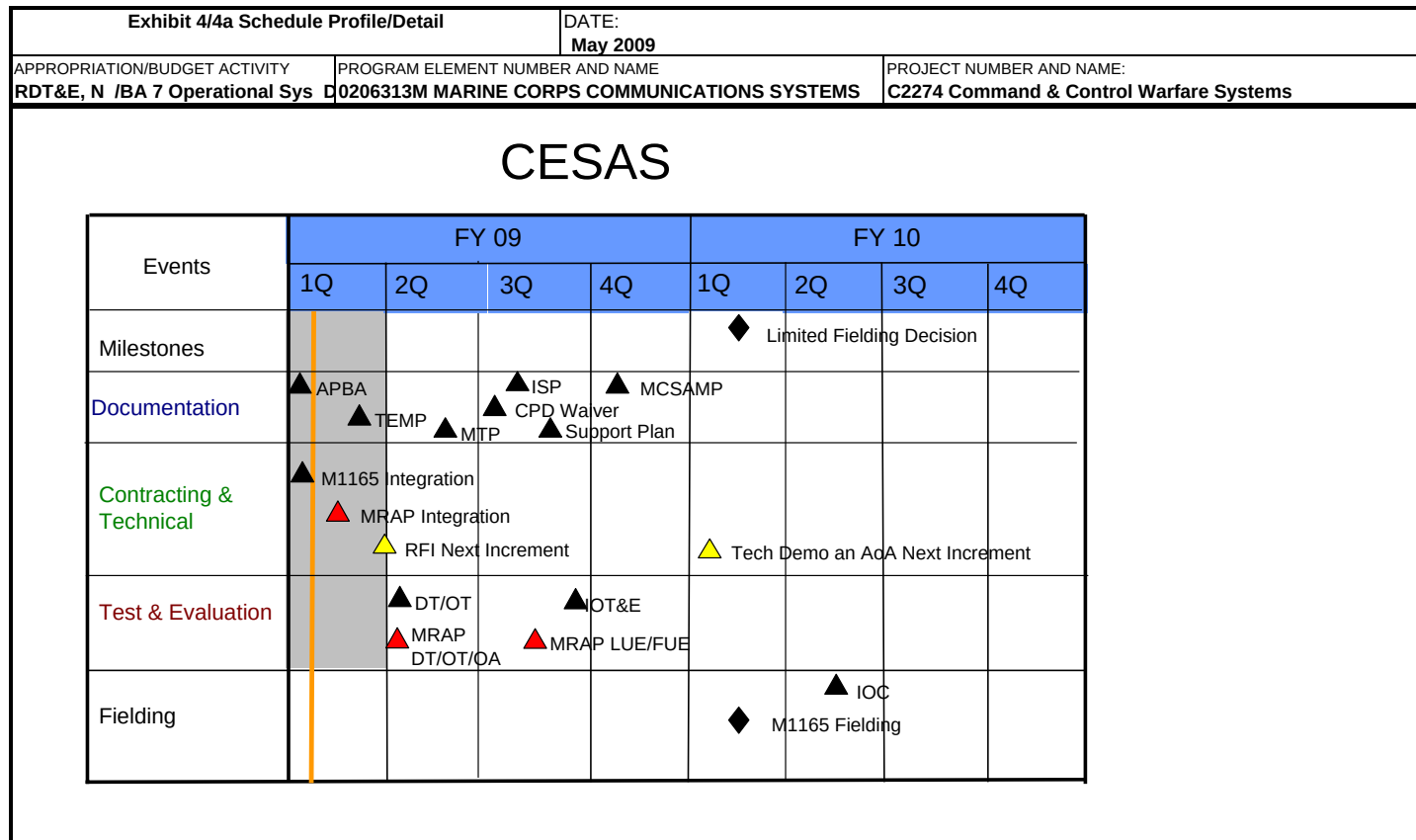


Exhibit 4/4a Schedule Profile/Detail				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME:		
RDT&E, N /BA 7 Operational Sys		0206313M MARINE CORPS COMMUNICATIONS SYSTEMS			C2274 Command & Control Warfare Systems		
CESAS	2009				2010		
MILESTONES							
Limited Fielding Decision					1Q		
DOCUMENTATION							
APBA	1Q						
TEMP	1Q						
MTP		2Q					
ISP			3Q				
CPD Waiver			3Q				
Support Plan			3Q				
MCSAMP				4Q			
CONTRACTING & TECHNICAL							
M1165 Integration	1Q						
MRAP Integration	1Q						
RFI Next Increment		2Q					
Tech Demo and AoA next Increment					1Q		
TEST & EVALUATION							
DT/OT		2Q					
MRAP DT/OT/OA		2Q					
IOT&E			3Q				
MRAP LUE/FUE			3Q				
FIELDING							
M1165 Fielding					1Q		
IOC						2Q	

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-7 Operational Sys Development		0206313M Marine Corps Communication Systems			C2275 Radio Systems			
COST (\$ in Millions)			FY2008	FY2009	FY2010	FY2010 OCO	FY2010 Total	
Project Cost			5.944	11.822	8.790	0.000	8.790	
RDT&E Articles Qty			0	3	1	0	1	
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Tactical Satellite Comm Terminal (TSCT) - LIGHTWEIGHT MULTIBAND SATELLITE TERMINAL (LMST)/PHOENIX are quad-band Super High Frequency (SHF) satellite terminals mounted in transit cases and High Mobility Multipurpose Wheeled Vehicle (HMMWVs). The LMST and Phoenix terminals will be the primary provider of SHF connectivity to Marine Air-Ground Task Forces (MAGTF) operations. Existing Ground Mobile Force (GMF) satellite terminals will continue to augment SHF requirements. (U) High Capacity Communications Capability (HC3): replaces Super High Frequency (SHF) wideband. HC3 will be the Marine Air Ground Task Force (MAGTF) commanders primary Sattelite Communication (SATCOM) method of transmitting and receiving wideband voice, video, and data. The HC3 will be used at all levels of the MAGTF to support the commanders critical communication requirements. At the Regiment and below the focus will be on Comm-on-the-Move (COTM) and Comm-on-the Pause (COTP) communications while at the Division/FSSG/Wing and above the transportable version will be incorporated as well. HC3 will be embedded in tactical vehicles such as the Expeditionary Fighting Vehicle (EFV) and the Light Armored Vehicle (LAV). As a result, it will play a vital role in command and control in all phases of an operation. (U) Legacy Communications/Electronics Modifications and Sustainment (LEGACY): encompass post production sustainment of fielded tactical communication and networking systems and Service Life Extension Programs (SLEP) of aging communications equipment reaching the end of their life cycle. The post production sustainment provides necessary engineering and logistic support to maintain the existing operational capability above threshold operational readiness. The support provides equipment specialists, configuration management, supply support coordination and control, depot maintenance control and warranty administration. (U) Networks: The following systems require SLEP/supportability upgrades: The Unit Level Circuit Switch (ULCS), which consists of the AN/TTC-42, SB-3865 and SB-3614 require sustainment until each is removed from the operating forces in FY08-09 upon Transition Switch Module (TSM) achieving Full Operational Capability (FOC). The AN/TSQ-227 Digital Technical Control (DTC) in udergoing a major refresh driven by Department of Defense (DoD) / Joint Interoperability Test Command (JITC) mandated interoperability and security requirements, which includes technology insertion and evolutionary equipment improvements as part of the SLEP effort. (U) Command & Control On-the-move Network, Digital Over-the-horizon Relay (CONDOR): CONDOR Capabilities material solution will be a coordinated effort with the Army's WIN-T program. We are currently developing a Marine Corps Spiral called WIN-X. The CONDOR funding line is funding the capability to allow tactical forces extended Beyond Line-of-Sight (BLOS) to maintain situational awareness by extending data network connectivity regardless of distance while on-the-move (OTM). WIN-X will integrate commercially available routers, encryption devices, and an OTM satellite terminal to provide high-bandwidth line-of-sight and SATCOM connectivity across the battlefield. By interfacing with fielded tactical data radios, the CONDOR Gateway extends existing tactical data radio networks to maintain connectivity for United States Marine Corps (USMC) Command and Control (C2) and fires applications. Production variants will be integrated as a kit into existing armored tactical wheeled vehicles without degrading their inherent protection. (U) Very Small Apperture Terminal (VSAT) - VSAT provides beyond line-of-sight (BLOS), low-cost satellite communications up to speeds of 4 Megabytes per second (Mbps) full duplex. VSAT fills a void of BLOS, high bandwidth capability throughout the Marine Air-Ground Task Force (MAGTF). The VSATs are currently Ku-band only which requires commercial satellite connectivity. Future upgrades will utilize the military's Wideband Global Satellites to save on long term O&M costs. R&D work will need to be done to ensure that VSAT can transition from Ku to Ka-band. Additional R&D dollars will be used to further develop the current Linkway modem to provide higher capacity throughout and TRANSEC (Transition Security).								

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-7 Operational Sys Development	0206313M Marine Corps Communication Systems		C2275 Radio Systems		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.154	0.000	0.000	0.000
RDT&E Articles Qty					0
TSCT (LMST): Test component upgrades for integration for Ka-Band Upgrades.					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.050	0.045	0.000	0.045
RDT&E Articles Qty					0
TSCT (LMST): Contract Support Cost					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.199	0.000	0.000	0.000	0.000
RDT&E Articles Qty					0
TSCT (LMST): DISA/IA Certification					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.252	0.000	0.252
RDT&E Articles Qty					0
TSCT (LMST): CATQH research and test					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.077	0.300	0.500	0.000	0.500
RDT&E Articles Qty					0
High Capacity Communications Capability (HC3): Navy/MC Crypto Development					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.500	0.500	0.951	0.000	0.951
RDT&E Articles Qty					0
High Capacity Communications Capability (HC3): Support					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.467	1.259	1.185	0.000	1.185
RDT&E Articles Qty					0
High Capacity Communications Capability (HC3): USMC Integration efforts.					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	1.233	1.211	0.474	0.000	0.474
RDT&E Articles Qty					0
Legacy Comm/Elec (Networks): Engineering Support for DTC					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.254	0.250	0.298	0.000	0.298
RDT&E Articles Qty					0
Legacy Comm/Elec (Networks): Operational Support Test/Support for DTC					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.140	0.740	0.000	0.740
RDT&E Articles Qty					0
Legacy Comm/Elec (Wireless): Development					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	1.250	0.672	0.000	0.672
RDT&E Articles Qty					0
CONDOR: Program Support, Logistics Support & Management, Technical Engineering Support					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.339	0.000	0.000	0.000
RDT&E Articles Qty	0				0
CONDOR: Warfighter Information Network - Expeditionary (WIN-X) Development					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	2.928	0.250	0.000	0.000	0.000
RDT&E Articles Qty					0
CONDOR: Technical, Engineering Support and Contract Advisory, Assistance Services (MITRE)					

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-7 Operational Sys Development	0206313M Marine Corps Communication Systems		C2275 Radio Systems		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.286	0.000	0.000	0.000	0.000
RDT&E Articles Qty					0
CONDOR: Gateway and Common Army Marine Command and Control Vehicle (CAMC2-LTV) OT					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	1.500	1.055	0.000	1.055
RDT&E Articles Qty					0
CONDOR: WIN-X DT/02					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	3.000	2.000	0.000	2.000
RDT&E Articles Qty		3	1		1
CONDOR: Legacy Interoperability Development					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.700	0.190	0.000	0.190
RDT&E Articles Qty					0
Very Small Aperture Terminal (VSAT): Development and integration					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total
Accomplishment/Effort Subtotal Cost	0.000	0.919	0.428	0.000	0.428
RDT&E Articles Qty					0
Very Small Aperture Terminal (VSAT): Development and integration					
(U) Total \$	5.944	11.822	8.790	0.000	8.790

Exhibit R-2a
Page 73 of 119

UNCLASSIFIED

Exhibit R-3 Cost Analysis				DATE: MAY 2009											
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N/BA-7 Operational Sys Development			0206313M Marine Corps Communication Systems				C2275 Radio Systems								
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY09 Cost	FY09 Award Date	FY10 Cost	FY10 Award Date	FY10 OCO Cost	FY10 OCO Award Date				
LMST Ka-Band Upgrade	FFP	Harris Corp, Florida	0.292	0.000		0.154	01/09	0.000							
LMST DISA/IA Certification	MIPR	CECOM Ft Monmouth	0.451	0.199	05/08	0.000		0.000							
HC3 USMC Integration Efforts	MIPR	CECOM Ft Monmouth	2.491	0.544	03/08	1.259	02/09	1.182	02/10						
HC3 Navy/MC Crypto Development	MIPR	CECOM Ft Monmouth	2.285	0.500	04/08	0.300	01/09	1.000	01/10						
LCE (Networks) Development	FFP	MITRE CECOM	4.309	1.233	02/08	1.211	01/09	0.500	01/10						
CONDOR Legacy Interoperability Development	FFP	SPAWAR Charleston	0.200	0.000		3.000	05/09	2.000							
CONDOR WIN-X-DT/02	FFP	SPAWAR Charleston	5.407	0.000	06/08	0.839	05/09	0.000	11/09						
CONDOR Gateway and (CAMC2-LTV) Spiral Development	FFP	CECOM Ft Monmouth		0.286		0.000	05/09	0.558	11/09						
VSAT Development and Integration	MIPR	CECOM Ft Monmouth	3.000			0.919	03/09	0.428	03/10						
Subtotal Product Development			18.435	2.762		7.682		5.668							
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY10 Cost	FY10 Award Date	FY10 OCO Cost	FY10 OCO Award Date				
LMST Contractor Support	FFP	NGIT, Stafford, VA	0.627	0.000		0.050	10/08	0.045	10/09						
HC3 Contractor Support	FFP	Titan, Stafford, VA	0.000	0.000		0.500	10/08	0.454	10/09						
LCE (Networks) Support	FFP	Titan, Stafford, VA	0.270	0.000		0.140	10/08	0.714	10/09						
VSAT Contract Support	FFP	MARCORSYSCOM	0.500	0.000		0.700	10/08	0.190	10/09						
Subtotal Support			1.397	0.000		1.390		1.403							
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY10 Cost	FY10 Award Date	FY10 OCO Cost	FY10 OCO Award Date				
LMST CATQH Testing	RC	Harris Corp, Florida	0.000	0.000		0.000		0.252	11/09						
LCE (Networks) OA	WR	MCOTEA	0.000	0.200	01/08	0.200	01/09	0.238	01/10						
LCE Interoperability	MIPR	JTC, FT Hauchuca	0.000	0.054	01/08	0.050	01/09	0.060	11/09						
CONDOR IOT&E	WR	MCOTEA	0.240	0.000		0.500	03/09	0.000							
CONDOR DT	WR	MCOTEA	0.000	0.000		0.500	03/09	0.500	11/09						
Subtotal T&E			0.240	0.254		1.250		1.050							
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY10 Cost	FY10 Award Date	FY10 OCO Cost	FY10 OCO Award Date				
CONDOR Program Support, Contract Adv & Asst	FFP	Titan, Stafford, VA	2.100	2.000	03/08	1.250	11/08	0.669	11/09						
CONDOR Support	MIPR	CECOM Ft Monmouth	0.000	0.928		0.250	02/09	0.000							
Subtotal Management			2.100	2.928		1.500		0.669							
Remarks:															
Total Cost			22.172	5.944		11.822		8.790							

Exhibit R-2a
Page 75 of 119

Exhibit R-2a
Page 76 of 119

Exhibit 4/4a, Schedule Profile/Detail			DATE:		MAY 2009	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME		
RDT&E, N/BA 7 Operational Sys Development		0206313M Marine Corps Communication Systems		C2275 Radio Systems		
Legacy Communication Electronics (LEGACY) / Digital Technical Control (DTC)						
	FY08	FY09	FY10			
PDR	◆					
Critical Design Review	◆					
- Milestone C (DTC 13 & 15)	◆◆					
DT / SIT	◆	◆				
OA	◆	◆				
FRP*	◆	◆				
Fielding*	◆	◆				
- IOC	◆	◆				
- FOC			◆	◆		
GTF (202K) Procurement and Fielding			◆	◆		
Increment III (Tech insertion)						
Program Funding Summary		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
RDT&E C2275 LEGACY COMMUNICATIONS ELECTRONICS		1.487	1.601	1.512	0.000	1.512
PMC 463300 LEGACY COMMUNICATIONS ELECTRONICS		4.376	4.036	4.006	0.000	4.006
DTC Detailed Schedule		FY 2008	FY 2009	FY 2010		
Milestones B and C		2Q				
Phase 0 (MCHS IT refresh ECP		Complete				
Phase I (PEP and CCA update ECP		1Q				
SOW /CDRL/ Cost est.		Complete				
POR Document Update					3Q	
- Training update		1Q.....	4Q			
- Aberdeen testing / Transport testing			3Q...4Q			
- Interoperability testing (MCTSSA SIT & JITC DICE)			1Q...2Q			
- I&KP			1Q			
- NET (Each MEF/MSD during rotation)			2Q.....	41Q.....4Q		
- PCA & ILA			4Q		3Q	
- IIP refresh			4Q		3Q	
Fielding CAMC2-V						
ETM update		1Q.....	4Q			

Exhibit 4/4a, Schedule Profile/Detail						DATE: MAY 2009		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDT&E, NBA 7 Operational Sys Development		0206313M Marine Corps Communication Systems			C2275 Radio Systems			

Command & Control On-the-move Network, Digital Over-the-horizon Relay (CONDOR)								
		FY08	FY09	FY10				
WIN-X EVENTS								
Program LRIP/FUE								

<u>Program Funding Summary-</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>	<u>FY 2010 TOTAL</u>
RDT&E C2275 CONDOR	3.214	6.339	3.727	0.000	3.727
PMC 463300 CONDOR	0.400	8.348	0.000	0.000	0.000

CONDOR SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010
Program LRIP/FUE		2Q-----	

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Development		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems		PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems	
COST (\$ in Millions)	FY2008	FY2009	FY2010	FY2010 OCO	FY2010 Total
Project Cost	3.637	2.580	2.954	0.000	2.954
RDT&E Articles Qty	6	6	4	0	4

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

(U) Joint Network Management Systems (JNMS): is a portfolio of communications planning and Network Management applications for use throughout the Marine Air Ground Task Force (MAGTF). JNMS includes Systems Planning Engineering and Evaluation Device (SPEED). JNMS provides the MARFOR (Marine Forces) component planners with the ability to conduct high-level planning; detailed planning and engineering; monitoring; control and reconfiguration; and spectrum planning and management in support of Combatant Commander (COCOM) and Commander, Joint Task Force (CJTF) operations. SPEED provides High Frequency (HF) predictions, Line of Site (LOS) propagation, Radio Coverage Analysis (RCA), Satellite planning, C2PC track interface, interference and de-confliction analysis, spectrum management, Radio Guard Charts, Comm-on-the-move (COTM), and T/E (training & education) and force structure management.

(U) Transition Switch Module (TSM): consists of three systems that provide a flexible Unit Level Switch that bridges legacy Tri-Tac switches with current commercial technology, providing maneuver elements with improved voice/data switching, data transport and bandwidth management capabilities. This program maintains USMC joint interoperability as all Services transition to Commercial Off-The-Shelf (COTS) switching technologies.

(U) Expeditionary Command and Control Suite (ECCS): is a small footprint data and voice satellite communications system capable of deploying on commercial or military air-based and land-based platforms providing a multi-mission, mobile reach-back connection into existing networks until larger command and control systems are operational. It is a transit case solution that provides SIPRNET email and web access, secure VTC, Command Control Personal Computer/Common Operational Picture (C2PC/COP) and collaborative planning Defense Collaborative Tool Sets (DCTS) Defense Information Systems Agency (DISA) Standard.

(U) Tactical Data Network (TDN): augments the existing Marine Air Ground Task Force (MAGTF) communications infrastructure to provide the commander an integrated data network, forming the communications backbone for Tactical Data Systems (TDS) and the Defense Messaging System (DMS). TDN consists of Gateways (AN/TSQ-222) and Data Distribution Systems (AN/TSQ-228), interconnected with one another and their subscribers via a combination of common user long-haul transmission systems, local area networks (LAN), and switched telephone systems. The TDN Data Distribution System - Modular (DDS-M) provides a smaller and more mobile variant DDS that increases the capabilities of legacy TDN systems through major refresh.

(U) Warfighter Network Tactical (WFN-T): Starting in FY10 WFN-T merges existing systems into a new portfolio of tactical network programs. WFN-T merges the capabilities of the Tactical Data Network (TDN), First In Command and Control (FICCS), Digital Technical Control and other communications - switch network infrastructure which provides voice, SIPR, NIPR, coalition, data, and video services. WFN-T will provide a standard data and voice architecture for the deployed warfighter that is interoperable with Joint and other Services communications systems.

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-7 Operational Sys Development		0206313M Marine Corps Communication Systems		C2276 Communications Switching & Control Systems		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		2.835	0.018	0.000	0.000	0.000
RDT&E Articles Qty		6	0	0	0	0
JNMS: Developmental work for SPEED Communications Electronics Operation Instructions (CEOI) function & Commercial Joint Mapping Tool Kit (CJMTK) enhancements.						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.127	0.200	0.095	0.000	0.095
RDT&E Articles Qty		0	0	0	0	0
TSM: Engineering and Program Support						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.000	0.741	0.000	0.000	0.000
RDT&E Articles Qty		0	2	0	0	0
TSM: Development VoIP; P800 for TSM						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.207	0.000	0.207
RDT&E Articles Qty		0	0	2		2
TSM: Technology Insertion						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.148	0.796	0.000	0.000	0.000
RDT&E Articles Qty		0	4	0	0	0
ECCS: Prototype, Engineering Developmental Model (EDM), and Program Support						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.409	0.200	0.495	0.000	0.495
RDT&E Articles Qty		0	0	0	0	0
ECCS: Test and Evaluation and Program Support						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.118	0.625	0.000	0.000	0.000
RDT&E Articles Qty		0	0	0	0	0
TDN: Test and Evaluation and Program Support						
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL
Accomplishment/Effort Subtotal Cost		0.000	0.000	2.157	0.000	2.157
RDT&E Articles Qty		0	0	2	0	2
WFN-T: Engineering Support and Prototype Development						
(U) Total \$		3.637	2.580	2.954	0.000	2.954

EXHIBIT R-2a, RDT&E Project Justification

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY
RDTE, N /BA-7 Operational Sys Development

PROGRAM ELEMENT NUMBER AND NAME
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME
C2276 Communications Switching & Control 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>	<u>FY 2010 OCO</u>	<u>FY 2010 TOTAL</u>
(U)PMC BLI 463400 Communications Switching and Control Systems					
Transition Switch Module (TSM)	38.417	29.010	33.676	0.000	33.676
Expeditionary Command and Control Suite (ECCS)	0.000	6.925	9.864	0.000	9.864
Tactical Data Network (TDN)	42.194	12.793	0.000	0.000	0.000
Warfighter Network Tactical (WFN-T)	0.000	0.000	53.463	2.044	55.507

(U) Related RDT&E: Not Applicable.**(U) D. ACQUISITION STRATEGY**

(U) Transition Switch Module (TSM) : calls for the use and integration of proven commercial switching technologies of sufficient maturity for production. Seeks commercial solutions that are fully compatible and interoperable with other Communication Networking Systems (CNS) programs that are fielded and/or being fielded e.g., DTC, TDN, Joint Enhanced Core Communication System (JECCS) etc.

(U) Expeditionary Command and Control Suite (ECCS): will use the evolutionary acquisition strategy and pursue a competitive firm fixed price contract. Major concerns will be interoperability and compatibility with existing systems and components. R&D effort will focus on developing and integrating "miniaturized" versions of existing components. Emerging technologies such as VoIP and Secure Wireless will also be addressed in the out year R&D effort. R&D funding drops as system goes into production.

(U) Tactical Data Network (TDN): is an evolutionary acquisition strategy. As new products and industry standards are produced, they are to be tested and integrated into TDN equipment. RDTE funding in FY08 and FY09 is to be used to test and evaluate Commercial Off-The-Shelf (COTS) items which will be integrated into TDN Gateways and Data Distribution Systems (DDS) to fulfill ORD requirements.

(U) Warfighter Network Tactical (WFN-T): is an evolutionary acquisition strategy that will modify existing and legacy programs to add emerging capabilities for interoperability. The tenets of the WFN-T acquisition strategy are Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS), firm fixed price competitive contracts for material solutions to meet emerging requirements. Capability related EDMs will be procured in FY10. WFN-T may reuse other services development and ride external contracts that satisfy requirements and analysis of alternatives.

(U) E. Major Performers:

FY08 (JNMS SPEED) - Northrop Grumman, Winter Park FL. New SPEED releases

FY 08/09 - (TSM) EDO/Darlington, Wando, SC. Develop training documentation and test package

FY08 (ECCS) - Dataline Inc. Tampa FL. FY 09 competitive contractor TBD. Develop and test miniaturized components that provide DISN services while On-The-Move/Enroute.

Exhibit R-3 Cost Analysis										DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME									
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Com		C2276 Communications Switching & Control Systems									
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY10 Award Date	FY10 OCO Cost	FY10 OCO Award Date			
JNMS (SPEED)	FFP	CTQ, Northrop Grumman, FL	3.074	2.835	08/08	0.018	05/09	0.000						
TSM (Eng CLIN)	FFP	CTQ, EDO	0.000	0.000		0.741	06/09	0.207	01/10					
ECCS	FFP	CTQ, Dataline, FL	0.096	0.148	05/08	0.000		0.000						
ECCS EDM	FFP	CTQ, TBD	0.000	0.000		0.796	05/09	0.000						
WFN-T Prototype	FFP	CTQ, TBD	0.000	0.000		0.000		1.500	01/10					
Subtotal Product Dev			3.170	2.983		1.555		1.707						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY10 OCO Cost	FY10 OCO Award Date			
JNMS (CEOSS)	FFP	CTQ, QinetiQ, VA		0.000		0.000		0.000						
TSM (CEOSS)	FP	CTQ, QinetiQ/L-3, VA		0.000		0.000		0.000						
TSM (CEOSS)	FP	CTQ, L3 Com, VA	0.035	0.000		0.000		0.000						
TSM (Eng. Support)	FFP	CECOM, MITRE, MA	0.117	0.064	02/08	0.150	03/09	0.095	01/10					
ECCS (CEOSS)	FFP	CTQ, QinetiQ/L-3, VA		0.200	05/08	0.000		0.495	01/10					
TDN (Eng Support)	FFP	CECOM, MITRE, MA		0.000		0.500	03/09	0.000						
WFN-T (Eng Support)	FFP	CECOM, MITRE, MA		0.000		0.000		0.657	01/10					
Subtotal Support			0.152	0.264		0.650		1.247						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY10 OCO Cost	FY10 OCO Award Date			
TSM	FFP	MCTSSA		0.000		0.000		0.000						
TSM	MP	JITC	0.028	0.000		0.050	03/09	0.000						
ECCS	OPBUD	MCOTEA	0.100	0.134	06/08	0.200	05/09	0.000						
TDN	FFP	MCOTEA/JITC	0.000	0.108	06/08	0.000		0.000						
Subtotal T&E			0.128	0.242		0.250		0.000						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY10 OCO Cost	FY10 OCO Award Date			
JNMS (Prgm Supt)	FFP	MCSC		0.000		0.000		0.000						
TSM (Prgm Supt)	FFP	MCSC		0.063	12/07	0.000		0.000						
ECCS (Prgm Supt)	FFP	MCSC		0.075	12/07	0.000		0.000						
TDN (Prgm Supt)	FFP	MCSC		0.010	12/07	0.125	03/09	0.000						
Subtotal T&E			0.000	0.148		0.125		0.000						
Remarks:														
Total Cost			3.450	3.637		2.580		2.954						

Exhibit R-4/4a
Page 83 of 119

Exhibit 4/4a, Schedule Profile/Detail				DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N/BA 7 Operational Sys Development		PROGRAM ELEMENT 0206313M Marine Corps Communication Systems		PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems	

Joint Network Management Systems (JNMS) Milestone / Program Schedule												
	FY08	FY09	FY10									
NPM (SPEED) Milestone Decisions												
NPM (SPEED) Contract Award		T.O. 9 10.2										
NPM (SPEED) development												
NPM (SPEED) Integration testing												
NPM (SPEED) O&M												
NPM (SPEED) NMCI Cert												

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>
C2276 JOINT NETWORK MANAGEMENT SYSTEMS	2.835	0.018	0.000	0.000	0.000

JNMS (SPEED) SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
SPEED 10.2 Release / Fielding	4Q							
SPEED NMCI Certification	4Q							
SPEED T.O. 9 (RCA & EPLRS revision)	4Q							
SPEED Development	4Q							
SPEED NMCI Certification	4Q	1Q						

Exhibit 4/4a, Schedule Profile/Detail			DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 7 Operational Sys Development		PROGRAM ELEMENT 0206313M Marine Corps Communication Systems		PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems	

Exhibit R-4/4a
Page 86 of 119

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems			PROJECT NUMBER AND NAME C2277 Systems Engineering & Integration			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 TOTAL		
Project Cost		9.321	6.922	6.988	0.000	6.988		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) This project provides funds for engineering, test, and evaluation activity, which ensures that the systems being developed within the Program Element (PE) employ consistent standards for interoperability and, to the maximum extent feasible, use hardware and software which is uniform and standard across programs. Joint Distributed Engineering Plant (JDEP) directly supports DoD mandated directive CJCSI 6212.01F, to evaluate the interoperability of the holistic Marine Air Ground Task Force (MAGTF) Command Control Communications Intelligence (C4I) Capability produced by Marine Corps Systems Command (MARCORSYSCOM). This evaluation will be accomplished via the MAGTF C4I Capability Certification (MC3) process. Using MC3, composite capabilities are evaluated for their collective interoperability with joint forces; support integration of emergent systems with systems already fielded, and to conduct critical engineering analysis capable of isolating and correcting capability deficiencies and optimize system of systems performance. Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of tactical data links and US Message Text Format (MTF) under the direction of the Defense Information Systems Agency (DISA) and Office of the Secretary of Defense/Networks and Information Integration (OASD/NII) per the Commander Joint Chiefs of Staff (CJCSI) 6610.01C and CJCSI6241.04 for US Military Tactical Forces (USMTF). Coalition Warrior Interoperability Demonstration (CWID) (a.k.a. Joint Warrior InterOperability Demonstration (JWID)) is a Joint Chiefs-of-Staff (JCS) and a Chairman of the Joint Chiefs annual event. CWID remains the premier event to investigate interagency and coalition interoperability problems. CWID defines solutions that can be applied in the operational community. CWID's mission is to conduct military operations to deter, prevent, and defeat threats and aggressions aimed at the US its territories and assigned areas of responsibilities as directed by the President or Secretary of Defense. Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, Coordination. (MAGTF C4I SEI&C) provides for the centralized planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies, and manages the configurations of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It supports unified technical representation to joint and coalition communities for Marine Corps Systems and provides top-tier system engineering support to address system of systems technical issues. It is used to conduct direct Marine Expeditionary Unit/Marine Expeditionary Force (MEU/MEF) support in system integration testing with USN (Part of Deploying Group Systems Integration Testing (DGSIT)) and workups supporting MEF deployments. It is also used to support Marine Corps systems coordination and involvement in DoD initiatives to include ForceNet, Global Information Grid Enterprise Services (GIGES), and other Deployable Information Systems Architecture DISA/NETWARCOM efforts.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems	PROJECT NUMBER AND NAME C2277 Systems Engineering & Integration		
(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	0.265	0.490	1.627	0.000
RDT&E Articles Qty				
JDEP: Conduct development of the MAGTF C4I Capability Certification process which involved the creation of capability based test threads. Additionally create Joint Test Threads and participated in a JFCOM sponsored joint distributed test event. Plans are to conduct the first formal MAGTF C4I Capability certification event in FY 08.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	2.939	1.433	1.571	0.000
RDT&E Articles Qty				
JINTACCS: Joint development, implementation, and testing of data links under the direction of the JCS and OASD/NII.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	1.667	0.853	1.360	0.000
RDT&E Articles Qty				
JWID: Deter, prevent, and defeat threats and aggressions aimed at the US.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY2010 OCO
Accomplishment/Effort Subtotal Cost	4.450	4.146	2.430	0.000
RDT&E Articles Qty				
MAGTF SEI&C: Engineering and technical support for configuration management of MAGTF C4I systems. Review and submittal of multiple Integration Support Plans (ISPs) and Tactical ISPs (TISPs). Pre-deployment assistance to I MEF and multiple MEUs. Participation in ForceNet, NCES, GIGES and other Joint DoD initiatives. Plans are continued support of activities to support the interoperability and jointness of the USMC Enterprise IT/NSS systems.				
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				
MAGTF SE&I MCTSSA: Engineering and technical support for configuration management of MAGTF C4I systems at the Marine Corps Tactical Software Support Activity (MCTSSA)				
(U) Total \$	<u>9.321</u>	<u>6.922</u>	<u>6.988</u>	<u>0.000</u>
(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A				
(U) Related RDT&E: (U) PE 0206623M, Marine Corps Ground Combat/Supporting Arms Systems				
(U) D. ACQUISITION STRATEGY: JDEP, JINTACCS, CWID, & MAGTF SE&IC: N/A as these are non-acquisition programs.				
(U) E. Major Performers: FY09 Qinetiq-NA, Stafford VA. - Level of effort contracted for MAGTF C2 and GWOT related Urgent Unfunded Needs Statements (UUNS) for Systems Engineering, Capability Certification, Architecture Development, Logistics Support, Acquisition and Program Management support for all 700+ USMC MAGTF C2 programs.				

Exhibit R-3 Cost Analysis				DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication Systems				C2277 Systems Engineering & Integration						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 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
CWID	C/FFP	NSWC Dahlgren	4.478	1.237	12/07	0.716	12/08	0.830	12/09				
CWID	WR	NSWC Dahlgren				0.100	11/08						
CWID	WR	MCSC, Quantico, VA	0.299	0.105	12/07		12/08	0.130	12/09				
CWID	C/FFP	JTIC Indian Head	0.189	0.000	12/07	0.038	12/08	0.038	12/09				
JINTACCS	C/FFP	NSWC Indian Head				0.070	03/09						
Subtotal Product Dev			4.966	1.342		0.924		0.998					
Remarks:													
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 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
CWID	C/FFP	OSEC, Stafford VA	2.686	0.325	04/08	0.000	04/09	0.362	04/10				
MAGTF SEI&C	C/FFP	OSEC, Stafford VA	12.232	2.100	04/08	2.186	04/09	2.210	04/10				
MAGTF SEI&C	WR	MCSC, Quantico, VA	1.105	1.400	10/07	0.000	10/08	0.145	10/09				
MAGTF SEI&C	WR	NSWC Dahlgren	2.675	0.355	10/07	0.350	01/09	0.000	10/09				
MAGTF SEI&C	C/FFP	SPAWAR Charleston	1.015	0.322	10/07	0.000	10/08	0.000	10/09				
JDEP	C/FFP	NSWC, Dahlgren, VA		0.050	01/08	0.000		0.560	12/09				
JDEP	C/FFP	OSEC, Carlsbad CA	0.170	0.100	11/07	0.440	11/08	0.472	11/09				
JINTACCS	C/FFP	OSEC, Stafford VA	2.268	0.985	04/08	0.625	04/09	0.581	04/10				
JINTACCS	C/FFP	MCTSSA, Cp Pndlt, CA		0.954	06/08	0.727	01/09						
JINTACCS	WR	MCTSSA, Cp Pndlt, CA	2.948	1.000	01/08	0.011	12/08	1.000	10/09				
Subtotal Support			25.099	7.591		4.339		5.330					
Remarks:													
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 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
JDEP	WR	SSCC, Charleston SC		0.030	11/07	0.050	03/09	0.575	11/09				
JDEP	WR	MCSC, Quantico, VA	0.000	0.085	10/07	0.000	10/08	0.000	10/09				
MAGTF SEI&C	MIPR	MITRE	4.979	0.273	10/07	1.609	10/08	0.085	10/09				
JINTACCS	C/FFP	EMA, Lexington Park MD	0.190	0.000		0.000		0.000					
Subtotal T&E			5.169	0.388		1.659		0.660					
Remarks:													
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 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
Subtotal Management			0.000	0.000		0.000		0.000					
Remarks:													
Total Cost			35.234	9.321		6.922		6.988					

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications System			PROJECT NUMBER AND NAME C2278 Air Defense Weapons Systems			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL			
Project Cost	2.386	4.601	7.754	0.000	7.754			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
This project encompasses two sub-element programs which are part of the Integrated Air Defense System for the Marine Corps. Ground Based Air Defense Transformation (GBAD-T) - Based upon the deployment of the Low Altitude Air Defense (LAAD) Battalions and their employment of the Stinger Missile, GBAD-T transforms Air Defense equipment through technology insertion and equipment repackaging to address capability gaps as the result of equipment obsolescence and the emergent and evolving threats to the Marine Air Ground Task Force (MAGTF). GBAD-T consist of three efforts: 1) sustainment of currently fielded LAAD equipment/assets; 2) fielding and support of the Advanced Man-Portable Air Defense System (A-MANPADS) that replaces the Avenger Weapon System and existing MANPADS vehicles; 3) replacing the Remote Terminal Unit (RTU), an effort that replaces an 18 pound laptop computer that provides Situational Awareness and Command and Control to the Stinger and A-MANPAD teams. The RTU replacement will interface with and be capable of receiving a Common Aviation Command and Control Systems (CAC2S) broadcasted link. It will also be capable of interfacing with legacy MACCS. The Joint Fires Integration and Interoperability Team (JFIIT), formerly known as Joint Combat Identification Evaluation Team (JCIET) - is an opportunity to conduct quality assurance testing of services' systems operating in a joint environment. It conducts assessments in a number of venues including: Military Operations in Urban Terrain (MOUT) exercises, Advanced Concept Technology Demos (ACTD), Joint Training exercises, Combined Armed Training Exercises (CAXs), and Weapons Tactics Instruction (WTI) events. Its mission is to improve Tactics, Techniques and Procedures (TTP) across all Combat Identification mission areas. (It is not an acquisition program; therefore, it does not have specific milestone dates.) Battlefield Target Identification Device (BTID), formerly known as Battlefield Target Identification System (BTIS) - will be a cooperative battlefield target identification device that employs encrypted, Ka band, millimeter wave, question and answer technology. It will consist of interrogator and transponder antennae, transceiver, and communications/electrical interface unit. It will be fielded as two variants: interrogator/transponder system for Expeditionary Fighting Vehicles (EFVs), Light Amphibious Vehicles (LAVs), and M1A1s; and transponder-only system for combat support and combat service support vehicles. When fielded, mounted weapon systems will have the capability to identify targets as friendly or unknown, at ranges to 6 km, before engaging them. They and all other designated vehicles will also possess the capability to rapidly identify themselves as friendly to weapon systems equipped with comparable systems prior to being engaged. As a result, incidents of fratricide and collateral damage will decline, while the range at which targets may be engaged without fear of misidentification will increase dramatically. The system will be interoperable with Joint, Allied, and Coalition forces' cooperative target identification systems. Funding in the amount of \$30K erroneously in Project C2278. Current CORE funding resides in Project C2273, P.E. 0206313M.								
(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.055	0.198	0.000	0.000				
RDT&E Articles Qty								
JFIIT: Program Management.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.350	0.821	0.000	0.000				
RDT&E Articles Qty								
JFIIT: Data and analysis for exercise.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.055	0.131	0.000	0.000				
RDT&E Articles Qty								
JFIIT: Logistical Support for exercises.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.030	0.000	0.000				
RDT&E Articles Qty								
BTID: Proram Management Support								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.733	0.975	0.357	0.000				
RDT&E Articles Qty								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications System		PROJECT NUMBER AND NAME C2278 Air Defense Weapons Systems	
GBAD TRANSFORMATION: Test and Evaluation (Remote Terminal Unit Replacement)					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.075	0.120	0.122	0.000	
RDT&E Articles Qty					
GBAD TRANSFORMATION: Program Management Services					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.962	1.523	0.321	0.000	
RDT&E Articles Qty					
GBAD TRANSFORMATION: Product Development (CAC2S Integration)					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.156	0.242	0.352	0.000	
RDT&E Articles Qty					
GBAD TRANSFORMATION: Product Development (Remote Terminal Unit Replacement)					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.000	0.000	6.070	0.000	
RDT&E Articles Qty					
GBAD TRANSFORMATION: Integration development (Missile Integration)					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	
Accomplishment/Effort Subtotal Cost	0.000	0.561	0.532	0.000	
RDT&E Articles Qty					
GBAD TRANSFORMATION: Support Costs (MCTSSA/MCCDC/Crane support)					
COST (\$ in Millions)				FY 2010 OCO	
(U) Total \$	2.386	4.601	7.754	0.000	
(U) C. OTHER PROGRAM FUNDING SUMMARY:					
<u>Line Item No. & Name</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY10 OCO</u>	<u>FY10 TOT</u>
(U) PMC LINE BLI 300600 GBAD-T	1.590	5.477	11.387	0.000	11.387
D. ACQUISITION STRATEGY:					
GBAD- TRANSFORMATION: Designated an Abbreviated Acquisition Program (AAP), GBAD-T effects the rapid transition from the Avenger/MANPADS weapon system to the more mobile, flexible, and maintainable Advanced MANPADS. The AAP is principally comprised of integrating Government Off The Shelf (GOTS) equipment and Non-developmental Items (NDI).					
E. MAJOR PERFORMERS:					
GBAD Transformation:					
<u>Performer</u>	<u>Location</u>	<u>Description</u>	<u>FY2008 Award Date</u>	<u>FY2009 Award Date</u>	<u>FY2010 Award Date</u>
L3	San Diego, CA	CAC2S Integration and RTU Replacement	2Q		
NSWC	Crane, IN	Technical Engineering Services	1Q	1Q	1Q
Raytheon	Andover, MA	Product Development (Missile Integration)	3Q	2Q	2Q

Exhibit R-2a
Page 92 of 119

UNCLASSIFIED

Exhibit R-3 Cost Analysis								Date: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME					
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication System					C2278 Air Defense Weapons Systems					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
GBAD TRANSFORMATION	MIPR	WSMR, NM	0.138	0.398	3Q 08	0.336	2Q 09						
GBAD TRANSFORMATION	MIPR	Aberdeen, MD	0.047										
GBAD TRANSFORMATION	C/FP	MCOTEA, Quantico, VA	0.000			0.261	2Q 09	0.357	2Q 10				
GBAD TRANSFORMATION	MIPR	NATC, NM		0.335	3Q 08	0.375	2Q 09						
JFIIT	RCP	MCSC, Quantico, VA	0.318										
JFIIT	WR	4th MAW	0.077	0.008	2Q 08								
JFIIT	WR	MCTSSA, CA	0.124	0.003	2Q 08								
JFIIT	WR	MCSC, Quantico, VA	0.036	0.011	1Q 08								
Subtotal T&E			0.740	0.755		0.972		0.357					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
GBAD TRANSFORMATION	C/FP	MCSC Quantico, VA	0.100	0.075	1Q 09	0.120	3Q 09	0.122	2Q 10				
JFIT	RCP	MCSC, Quantico, VA				0.250	2Q 09						
Subtotal Management			0.100	0.075		0.370		0.122					
Remarks:													
Total Costs			10.206	2.386		4.601		7.754					

Exhibit R-4/4a Project Schedule/Detail			DATE:
			May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems	C2278 Air Defense Weapons Systems	
GBAD-Transformation			
FISCAL YEARS	FY09	FY10	
Milestones/Decision Reviews		MS C	FRP
Technical Reviews & Audits	TRR	PCA	PRR
Contract Awards		SVR	
Testing	DT	FUE	
	FQT	MACCS Inte	
Technology Development	JRE 5.2 Regression		
System Development			
Server/Client Hardware Develop			
System Integration			
Production			
Fielding			
Operation and Support/ Post Production Support			
Missile Integration	ICD	Stinger Replacem	
Program Funding Summary (APPN, BLI #, NOMEN)			
	FY08	FY09	FY10
(U) PMC LINE BLI 300600 GBAD-T	1.590	5.477	11.387

Exhibit R-4/4a Project Schedule/Detail						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDT&E, N /BA-7 Operational Systems Development	0206313M Marine Corps Communications Systems			C2278 Air Defense Weapons Systems			

GBAD Transformation	FY 2008	FY 2009	FY 2010					
Advanced MANPADS Increment 1								
Milestone C			2nd Qtr					
Full Rate Production			4th Qtr					
Fielding Decision			4th Qtr					
IOC			4th Qtr					
Multi Mission Missile								
Technology Development	4th Qtr							

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Comms Systems				PROJECT NUMBER AND NAME C2510 MAGTF CSSE & SE			
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY 2010 OCO	FY 2010 Total			
Project Cost	62.717	15.191	62.063	0.000	62.063			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The MAGTF Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contribute to the Combatant Commander's Common Operating Picture (COP) to support rapid accurate decision making. MARINE CORPS COMMON HARDWARE SUITE (MCHS) provides Commercial Off-The-Shelf (COTS) high performance and general purpose client workstations (desktop/laptop), file application servers and other computer platforms to support the Operating Forces. MCHS provides support to two principal groups: 1) Approximately 50 Marine Corps Tactical and Functional Program of Record (POR) that are not covered by Navy-Marine Corps Intranet (NMCI). 2) Non-tactical, non-NMCI supported entities such as Marine Forces, Europe/ Marine Forces, Korea and stand-alone Marine Corps units and schoolhouses. The goal of the program is to enhance overall IT system interoperability and lower the total cost of ownership by: Centralizing the Marine Corps-wide procurement of workstations and file application servers; reducing the number of different configurations of computers; and providing worldwide integrated logistics support for all fielded MCHS hardware. Rapid Technology Insertion (RTI) provides ability to develop, test, and evaluate COTS hardware and software configurations for rapid fielding purposes. RTI encompasses small, short duration integration support for the USMC operating forces and supporting establishment. Development efforts are focused on improving alignment of COTS software and developing resources for MCHS-based solutions including enterprise desktop standardization and leverage virtualization initiatives. GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC) is the physical implementation of the enterprise IT architecture designed to support both improved and enhanced Marine Air Ground Task Force (MAGTF) Combat Service Support functions and MAGTF Commander and Combatant Commander/Joint Task Force (CC/JTF) combat support information requirements. The IT capabilities of GCSS-MC tie to discrete performance measures that support required combat service support mission objectives. This IT solution for logistics transformation was developed by the Integrated Logistics Center (ILC). The ILC Analysis was completed during an 18 week engagement beginning in late October 1998 to early February 1999. This analysis conducted with a high level Business Case Analysis (BCA). The BCA concluded conservatively that accomplishing the ILC actions (including reengineered IT among others) would reduce Marine Corps inventories and reduce support requirements allowing the shifting of 2000 Marines from logistics to the other MOS fields. GCSS-MC will provide access to more reliable, accurate and actionable information that clarifies the logistics situational awareness; near real time visibility of requests for products and services allowing higher confidence and trust in logistics; and the ability to operate with greater certainty. ILC action will also result in: lighter, more flexible and easier to move MAGTF; higher Combat Service Support (CSS) responsiveness; reduced stocks and CSS footprint inside the MAGTF; less equipment for Warfighter to manage; and rapidly scalable and deployable CSS units that have worldwide inventory visibility. The Integrated Logistics Concept (ILC) Analysis provided the foundation for logistics transformation within the Marine Corps and established a compliance response to Defense Reform Initiative Directive (DRID) 54, directing that logistics transformation be accomplished throughout the service components. Immediately following the guidance of DRID 54, the GCSS-Capstone Requirements Document (CRD) was approved by the Joint Requirements Operational Capability (JROC). GCSS-MC is the IT solution to accomplish the transformation and GCSS objectives by fielding an integrated set of capabilities implemented within a bottoms-up Program of Record (POR) approach. TRANSPORTATION SYSTEMS PORTFOLIO (TSP) RDT&E funding supports the various ongoing and continuing efforts to modernize legacy USMC logistics systems including joint interoperability testing and certification, information assurance testing and certification and updating old hardware in need of replacement. Legacy systems include joint programs supporting deployment and sustainment of theater assets as well as existing USMC legacy systems. Joint interoperability testing and certification is an ongoing and continuous requirement that is critical to ensuring all TSP applications are interoperable with other DOD and Joint services systems. There are also ongoing and continuing efforts to ensure that the legacy TSP applications comply with the latest information assurance requirements. TSP applications are continually updating their security posture through software enhancements based upon the latest cyber threats. Also, mandatory DOD compliance with software patches ensure TSP systems are in compliance with new information assurance vulnerability assessments and ensure; data integrity, confidentiality and availability. JOINT FORCE REQUIREMENTS GENERATOR II (JFRG II) is a Global Command and Control System (GCCS) segmented software application designed to provide DOD with a Joint Services, state-of-the-art, integrated, and deployable Automated Information System (AIS) that supports strategic force movements. The JFRG II software application is based on the Marine Corps' MAGTF II software application. MAGTF II has been in existence since 1991 and is used for task planning, Time Phased Force Deployment Data (TPFDD) editing, and Joint Operational Planning and Execution System (JOPES) interfacing. JFRG II assists in the notional planning process, permits the assignment of actual units to fill notional slots, and generates TPFDD for use in executing Joint Operation Plans. JFRG II provides rapid force list creation and interfaces with the Transportation Coordinators' Automated Information for Movement System (TC-AIMS II) and JOPES. It includes a Joint Deployment Data Library (JDDL) containing reference data required to produce a JOPES-compatible TPFDD extract file. JFRG II also contains modules that include the Unit Line Number (ULN) Summary for rapid from TC-AIMS II, MDSS II and JOPES. JFRG II operates and functions in either a classified or unclassified environment. PUBLIC KEY INFRASTRUCTURE (PKI) provides security objects and mechanisms used by PK-enabled systems and applications. The primary products of PKI are public key certificates and other certified objects used in conjunction with public key certificates (e.g. public key certificates and subscriber public key certificates). In addition to public key certificates, PKI provides on-line services (e.g.; on-line certificate status checking), and supplies authenticated attributes in public key certificates and / or attribute certificates. PKI is one of a number of security solutions used to protect information and provide attributes to enable to critical resources in the Global Information Grid (GIG), and is used concurrently with other solutions (e.g.; in-line network encryptions [INEs]) to implement the defense-in-depth concept. In conjunction with PK-enabled applications, PKI is used for identification, authentication, data confidentiality and integrity, and non-repudiation security services. Additionally, PKI functionally will be expanded to the Secret Internet Protocol Router Network (SIPRNET). AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) conducts research and development of new technologies and assists in technology insertion into applications. Thus enhances the Marine Corps' capability to quickly assimilate emerging technologies and leverage them to support more efficient, accurate business processes and data capture. AIT supports Active Radio Frequency Identification (RFID), Passive RFID, Unique Identification (UID) and the Operating Forces in the implementation of AIT solutions. AIT evaluates emerging technologies, new equipment, and performs integration analysis and testing.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Comms Systems	PROJECT NUMBER AND NAME C2510 MAGTF CSSE & SE		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.053	1.579	1.570	0.000
RDT&E Articles Qty				
MARINE CORPS COMMON HARDWARE SUITE (MCHS) funding in FY08 was used to track vendor performance in providing COTS hardware to Marine Corps users. This included verifying vendor compliance with Marine Corps specifications and conducting root cause analysis on failures reported from the Operating Forces in order to prevent future failures. In FY09, in addition to root cause analysis of failures of fielded gear, MCHS is using RDT&E funding to verify vendor specs for new products and to evaluate the applicability of both current and new products for procurement under the revised MCHS IDIQ contract with selected vendors. This includes rigorous environmental testing IAW applicable MILSPECS to evaluate performance of COTS hardware under field conditions. Software loading is also performed by MCHS to verify compatibility with various hardware configurations. In FY10, RDT&E will again be used to conduct trend analysis on reported failures of fielded COTS hardware and to evaluate the ability of new products to meet Marine Corps needs. Funding will also be used to perform testing to ensure various components ordered by customers are compatible within larger systems.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	58.350	6.336	55.440	0.000
RDT&E Articles Qty				
GCSS-MC LOGISTICS CHAIN MANAGEMENT (GCSS-MC) FY08 funds provided for the completion of an extended 10 month solution design period with the Oracle programmers and the transition to system build activities. FY09 activities included systems integration testing, the preparation for government testing, and the actual conducting of GDT&E. FY10 will include Field User Evaluations, Operational Testing and initial fielding of Block 1, Release 1.1 and the initial design, build and test activities for Release 1.2.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.073	0.600	0.617	0.000
RDT&E Articles Qty				
TRANSPORTATION SYSTEMS PORTFOLIO (TSP) FY08 funds were provided for the upgrade of the MAGTF Deployment Support System II (MDSSII); FY09 - FY10 TSP will conduct Active RFID upgrades and Joint Interoperability Testing & Certification (JITC) for all application upgrades and releases for all the programs within the portfolio.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.267	1.713	0.567	0.000
RDT&E Articles Qty				
JOINT FORCES REQUIREMENT GENERATION II (JFRG II) funding for FY08 and FY09 was utilized to develop the enhanced version of JFRG II , and funding for FY10 will decrease as focus shifts from program development to program maintenance.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	1.964	1.873	1.757	0.000
RDT&E Articles Qty				
PUBLIC KEY INFRASTRUCTURE (PKI) the FY08 accomplishments of PKI includes program, integration, planning and coordination efforts. FY09 efforts include DOD mandated Increment II implementation which encompasses Secure Internet Protocol Routing Network (SIPRNET) PKI enablement, testing and continued program planning and coordination. FY10 funding supports continued testing, correction of deficiencies and implementation of PKI requirements for tactical applications and SIPRNET capabilities.				

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Comms Systems	PROJECT NUMBER AND NAME C2510 MAGTF CSSE & SE		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.010	3.090	2.112	0.000
RDT&E Articles Qty				
AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) in FY08 conducted technology evaluations and, in FY09 - FY10, AIT will upgrade the pRFID infrastructure and continue to modify and develop pRFID capabilities as well as bring the active and pRFID together.				
(U) Total \$	62.717	15.191	62.063	0.000
(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>FY2010 OCO</u> <u>FY2010 Total</u>
PMC BLI 463000 COMMON COMPUTER RESC: MCHS Svrs/Wkst	145.284	142.463	17.862	15.205 33.067
PMC BLI 461700 COMBAT SPT SYS: GCSS-MC	7.738	19.020	4.605	0.000 4.605
PMC BLI 463500 COMM & ELEC INFRA SPT: PKI	0.684	0.799	0.930	0.000 0.930
PMC BLI 461700 COMBAT SPT SYS: AIT	13.020	12.432	5.496	0.000 5.496
(U) Related RDT&E: Not Applicable.				
(U) D. ACQUISITION STRATEGY:				
MARINE CORPS HARDWARE SUITE (MCHS) ensures computer hardware in the operating forces keeps pace with industry computer hardware technical improvements. Analysis of technical alternatives are periodically required in order to determine how to best meet emerging customer requirements. GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC): GCSS-MC will pursue an Evolutionary Acquisition (EA) strategy in order to field operationally suitable and supportable capabilities in the shortest time possible that meets the Logistics Advocate goals. EA offers the fastest method to field this highest of Advocate priorities and allows for requirements to be time-phased as the users become more familiar with the fielded systems' strengths and weaknesses. In addition to quicker fielding, an EA approach is particularly well suited to software intensive programs and offers these benefits: rapidly delivers an initial capability with the explicit intent of delivering continuously improved capability in the future and reduces "cycle time" from identification of emergent user requirements, priorities and fielding. The GCSS-MC acquisition strategy will be to deliver capabilities in increments. Each increment is a "Block" of a capability and will follow a complete acquisition process in accordance with the DOD 5000 publications and OSD's Enterprise Integration (EI) roadmap. Block 1 will be divided into two major independent releases (Enterprise Release 1.1 and Deployed Access Release 1.2). Each release will have their own IOC and FOC and is divided into two main phases: Planning/Blueprinting and Realization/Transition. More substantial software improvement/system upgrades will be fielded with each Block, as required and prioritized by the user community. This approach differs from the original plan of delivering one release due to the technical complexities related to the overall scope of the solution. In June 2008, Headquarters Marine Corps (HQM) Command, Control, Communications and Computers (C4) was briefed on this Block 1 architectural approach and validated that the approach was technically sound and essential to support deployed forces. Blocks will include emergent user priorities, advanced technology improvements and expanded functionality. Each Block will repeat the complete acquisition program cycle starting with Milestone (MS) A for the first Block for GCSS-MC and MS B thereafter going through a MS C Full Rate Production Decision Review (FRPDR) for each Block. GCSS-MC was designated an Acquisition Category (ACAT) IAM program in March 2004 and successfully completed a MS B review on June 8, 2007. MS C review is slated for the 1st Quarter FY10. FOC is validated when all Marine Corps ground components are using capabilities provided by GCSS-MC to include formal schools, and selected Marine Reserve Components and the following systems are no longer used operationally: Supported Activities Supply System (SASSY), Marine Corps Integrated Maintenance Management System (MIMMS), PC MIMMS, and Asset Tracking Logistics Automated Support System I (ATLASS I).				
TRANSPORTATION SYSTEMS PORTFOLIO (TSP) conduct research and development currently executed under multiple contracts ending at various times across the FYDP. These contracts support the testing of the joint deployment and sustainment systems along with the USMC legacy systems.				
JOINT FORCES REQUIREMENT GENERATOR II (JFRG II) conducts research and development currently executed under a 5-year contract. This contract support the testing of software for functionality with service users then passed on to DISA for security & interoperability testing and released as a GCCS mission application. This is conducted based on a six-month release schedule of Global Command and Control Systems (GCCS), with a six-month lead time for each JFRG II version release.				
PUBLIC KEY INFRASTRUCTURE (PKI) is a DOD ACAT IAM Program. At the service level, the USMC PKI program has been run as an Abbreviated Acquisition Program (AAP). Based on an Assistant Secretary of Defense (ASD) Acquisition Decision Memorandum (ADM), DOD PKI development will be conducted through a series of block upgrades. The functional enhancement, changes will result in increased capability and functionality for PKI and increase the levels of security and assurance which affects mitigation of identified risks. There are 13 functional and five (5) assurance enhancements. Additionally, PKI functionally will be expanded to the SIPRNET.				
AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) to ensure AIT hardware in the operating forces keeps pace with industry computer hardware technical improvements. AIT will support all aspects of Active Radio Frequency Identification (RFID), Passive RFID, Unique Identification (UID). AIT evaluates emerging technologies, new equipment, and performs integration analysis and testing. AIT uses various contracts.				

Exhibit R-3 Cost Analysis								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev			0206313M Marine Corps Communications Systems					C2510 MAGTF CSSE SE					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date		
Transportation System Portfolio	C/FP	Stanley	1.153	0.030	12/07								
GCSS Logistics Chain Man-Block 1	C/T&M	Oracle USA, Reston VA	55.144	42.084	10/07	2.936	11/08	34.813	11/09				
GCSS LCM Block 1 Release 1.1	C/TBD	TBD						4.000	11/09				
GCSS LCM Block 1 Release 1.2	C/TBD	TBD						2.488	05/10				
GCSS Log C2 Systems	C/FFP	EDO Corp	4.066										
JFRG II	C/FFP	Stanley	1.643	1.267	06/08	1.213	10/08	0.362	12/09				
PKI	C/FFP	Various	0.000	1.964	05/08	1.873	05/09	1.757	TBD				
AIT	C/FFP	Stanley, Dumfries VA	0.000			3.090	06/09	2.112	06/10				
VAR	VAR	Various	6.862	0.030		0.000		0.362					
Subtotal Product Dev			62.006	45.345		9.112		45.532		0.000			
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date		
GCSS Logistics Chain Man	C/FFP	IMPACT RES, Bethesda, MD	0.143	0.111	01/08								
GCSS Logistics Chain Man	C/FFP	SMARTRONIX, California, MD	0.200										
AIT	C/FFP	Stanley Associates, Dumfries, VA	0.019	0.010	01/08								
VAR	VAR	Various	0.362	0.121		0.000		0.000					
Subtotal Support			0.362	0.121		0.000		0.000		0.000			
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date		
MCHS	WR	SPAWAR, Charleston SC	5.569	1.053	01/08	1.579	01/09	1.570	TBD				
Transportation System Portfolio	VAR	Global Services	1.734	0.013	12/07	0.600	12/08	0.617	12/09				
Transportation System Portfolio	MIPR	ARMY	0.350	0.030	12/07								
Transportation System Portfolio	C/FFP	General Dynamics	0.419										
GCSS Logistics Chain Man	WR	MCOTEA, Quantico,VA	6.681	0.500	10/07	0.400	11/08	0.600	11/09				
GCSS Logistics Chain Man	WR	Instructor Training (Various)	0.000	2.549	10/08			4.682	TBD				
GCSS Log C2 Systems	WR	MCOTEA, Quantico,VA	1.436	0.400									
JFRG II	C/FFP	Stanley Associates	0.144			0.500	01/09	0.205	12/09				
VAR	VAR	Various	10.764	0.943		1.500		1.422					
Subtotal T&E			16.333	4.545		3.079		7.674		0.000			
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date		
GCSS Logistics Chain Man	C/FFP	LOGIS-TECH, Manassas VA	3.580										
GCSS Logistics Chain Man	C/FFP	Booz Allen Hamilton		0.400	01/08								
GCSS Log C2 Systems	C/FFP	Northrop, Stafford VA	0.478	4.522	06/08	3.000	06/09	6.257	06/10				
GCSS Log C2 Systems	C/FFP	Various		7.784			12/08	2.600	12/09				
VAR	VAR	Various	3.580	0.400		0.000		0.000					
Subtotal Management			4.058	12.706		3.000		8.857		0.000			
Remarks:													
Total Cost			82.759	62.717		15.191		62.063		0.000			

Exhibit R-4-4a Project Schedule/Detail											DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT							PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communications Systems							C2510 MAGTF CSSE & SE				
GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC)													
GCSS-MC Program Schedule MS C Baseline													
		CY2008				CY2009				CY2010			
Year		FY2008				FY2009				FY2010			
Quarter		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Block 1 Enterprise Release 1.1						Rebaseline ADM 				MS C ADM 			
											IOC 		
		Design/Build / SI DT / VCD					Gov DT / OT / VCD					Field III MEF & Selected I/II MEF Units	
Block 1 Deployed Release 1.2													
											Build / SIDT / VCD		

Program Funding Summary	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total
(APPN, BLI #, NOMEN)					
(U) RDT&E,N	58.350	6.336	55.440	0.000	55.440
(U) PMC BLI 461700 COMBAT SPT SYS:	7.738	19.020	4.605	0.000	4.605

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total
(U) RDT&E,N	58.350	6.336	55.440	0.000	55.440
(U) PMC BLI 461700 COMBAT SPT SYS:	7.738	19.020	4.605	0.000	4.605

Exhibit R-4-4a Project Schedule/Detail							DATE:			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communications Systems				C2510 MAGTF CSSE & SE				
GCSS-MC Logistics Chain Management (LCM)			FY2008	FY2009	FY2010					
LCM Block 1 Release 1.1 Milestone C					1st Qtr					
LCM Block 1 Release 1.1 IOT&E					2nd Qtr					
LCM Block 1 Release 1.1 IOC					3rd Qtr					
LCM Block 1 Release 1.2 Acquisition Decision 1					1st Qtr					

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-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communication Systems				C3099 RADAR SYSTEMS		
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL		
Project Cost		103.731	103.118	17.729	0.000	17.729		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
The Aviation Radar (AN/TPS-59(V)3) is a three dimensional ground-based sensor that can detect and track long range Air Breathing Targets (ABT) at ranges of 300 nautical miles and Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles. The system is beset with increasing obsolescence and Diminishing Manufacturing Sources (DMS) issues. The program will use a Post Production Support (PPS) contract to develop engineering changes to resolve DMS. A Product Improvement Program (PIP) will upgrade the system to enhance system capabilities and ensure continued viability against emerging threats. Ground Weapons Locating Radar (GWLR)/Family of Target Acquisition Systems (FOTAS) is an up-grade to the current AN/TPQ-46A radar. The system will acquire threat indirect fire weapons including mortars, artillery, rocket and missile systems at greater ranges than the current radar. The principle function of the system will be to detect, track, classify and accurately determine the origin of enemy weapon platforms and forward the location data to the counterfire element. The upgrades will focus on achievement of greater detection ranges as well as increased communication, security, and system availability. Ground/Air Task Oriented Radar (G/ATOR) (formerly known as the Multi-Role Radar System (MRRS)) is an expeditionary, 3-dimensional, high-mobility multi-purpose wheeled vehicle, short/medium range multi-role radar designed to detect cruise missiles, air breathing targets, rockets, mortars, and artillery. Programmatically, MRRS and GLWR (Ground Weapons Locating Radar) merged into a single requirement/capability (G/ATOR) and will replace an aging fleet of single mission legacy radar systems. G/ATOR will support air defense, air surveillance, counter-battery/target acquisition, aviation radar tactical enhancements and the final evolution will support the Air Traffic Control mission. G/ATOR was funded under project C3099 through FY2009; as of FY2010 it is funded in project C9C89. The Short/Medium Range Air Defense Radar AN/TPS-63B is a two-dimensional, medium-range, medium altitude, transportable radar system which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59(V)3 three-dimensional, long-range, air surveillance radar system. The Short/Medium Range Air Defense Radar will develop engineering change proposals related to improved system performance with the specific purpose of meeting increased fleet operational requirements. AN/TPS-63 modifications and system improvements will be researched and analyzed to determine which complement existing components to preclude an expensive USMC investment in solid-state radar technology.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		12.935	14.367	13.939	0.000			
RDT&E Articles Qty								
AN/TPS-59 : Develop Engineering Change Proposals for software improvements, Diminishing Manufacturing Sources issues and Product Improvement Program.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.713	1.250	1.750	0.000			
RDT&E Articles Qty								
AN/TPS-59 : Contractor service support.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.050	0.050	0.000	0.000			
RDT&E Articles Qty								
GWLR/FTAS : Program office management/travel.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.582	0.637	0.000			
RDT&E Articles Qty								
GWLR/FTAS : Contractor Technical, Programmatic, Engineering and Logistics Support								

EXHIBIT R-2a, RDT&E Project Justification						DATE:	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 OPERATIONAL SYS DEV						May 2009	
PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems						PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS	
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.502	0.165	0.175	0.000
RDT&E Articles Qty							
GWLR/FTAS: Software/Hardware ECP's							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.605	0.980	1.007	0.000
RDT&E Articles Qty							
GWLR/FTAS: System Diminishing Manufacturing Sources (DMS)							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				80.983	70.148	0.000	0.000
RDT&E Articles Qty							
G/ATOR: Contractor Technical, Development Engineering/EDM							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.200	0.150	0.004	0.000
RDT&E Articles Qty							
G/ATOR: Program Office Management & Travel Costs							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				2.592	2.405	0.000	0.000
RDT&E Articles Qty							
G/ATOR: Gov't Tech Support							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.225	0.500	0.000	0.000
RDT&E Articles Qty							
G/ATOR: Government Furnished Equipment (GFE)							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				4.696	12.266	0.000	0.000
RDT&E Articles Qty							
G/ATOR: Engineering, Management, & Logistics Support							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.000	0.120	0.089	0.000
RDT&E Articles Qty							
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Engineering and technical support							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.139	0.135	0.128	0.000
RDT&E Articles Qty							
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Life Extension Study							
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost				0.091	0.000	0.000	0.000
RDT&E Articles Qty							
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Feasibility study for the Frequency Generator							
(U) Total \$ (C3099 Radar Systems)				103.731	103.118	17.729	0.000

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-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communication Systems		C3099 RADAR 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>	<u>FY 2010</u>	<u>FY2010</u>
				<u>OCO</u>	<u>TOTAL</u>
(U) PMC, BLI#465000, Grnd/ Air Tasks Order Radar	0.000	17.389	0.000	0.000	0.000
(U) PMC, BLI#465000, AN/TPS-59 Sustainment	20.087	12.469	4.216	0.092	4.308
(U) PMC, BLI#465000, Grnd Weapons Locating Radar	112.464	10.143	2.512	3.325	5.837
(U) PMC, BLI#465000, Short/Medium Range Radar	1.732	0.419	0.700	0.000	0.700
(U) Related RDT&E:					
(U) PE 0206313M PROJECT C9C89 G/ATOR	0.000	0.000	63.925	0.000	63.925

(U) D. ACQUISITION STRATEGY:

(U) AN/TPS-59 Radar: The program will address Diminishing Manufacturing Sources (DMS) issues by continuing use of a Post Production Support (PPS) contract. The AN/TPS-59 Product Improvement Program (PIP) is a two-phased acquisition approach to upgrade the AN/TPS-59(V)3 Radar System, and is the materiel solution to the recently signed Three Dimensional Expeditionary Long Range Radar (3DELRR) Capabilities Development Document (CDD) which requires a more expeditionary system that is capable of detecting future threats.

(U) Ground Weapons Locating Radar (GWLR)/Family of Target Acquisition Systems (FTAS): GWLR is a sustainment and upgrade program for the current AN/TPQ-46A radar. The upgrade will be accomplished through a series of engineering change proposals (antenna transceiver group re-cap, Radar Processor re-host, and the lightweight computer unit replacement). Engineering Change Proposals (ECPs) will be conducted by the equipment Primary Inventory Control Agent (PICA) (Army PM Firefinder) with USMC participation. Joint procurement of hardware will realize economy of scale savings and ensure common configuration. Army and Marine Corps Depot facilities will be utilized to perform hardware installation. Purpose of the upgrade is to enhance performance and availability.

(U) The Ground/Air Task Oriented Radar (G/ATOR), formerly known as Multi-Role Radar System (MRRS), formerly known as Multi-Role Radar System (MRRS) will fill the MRRS and GWLR requirements. Five legacy systems (AN/TPS-63, AN/UPS-3, AN/MPQ-62, AN/TPS-73 and AN/TPQ-46A) will be replaced by a single material design that offers an opportunity to reduce development cost and combine training & logistics assets. MRRS Aviation Authorized Acquisition Objective (AAO) is 43 systems replacing the AN/TPS-63, AN/MPQ-62 and AN/TPS-73 systems as well as additional systems in support of the SHORAD mission (CLAWS weapon cue); MRRS Ground AAO is 38 systems, a one for one replacement of the AN/TPQ-46A. The System Development & Demonstration (SDD) phase designed to allow for technology insertion due to obsolescence and technology growth issues. Initial builds will be back fitted to current then year technology as required. As they become available Tactical Enhancements will parallel field to then year initial builds and back fitted to earlier builds. Two Engineering Development Models (EDM) -- one Contractor, one Government -- will be developed during the SDD phase and flowed down to support builds.

(U) SHORT/MEDIUM RANGE AIR DEFENSE RADAR This effort requires R&D funds to develop modifications to keep the Short/Medium Range Air Defense Radar System's electronics and hardware viable and safe, providing sustainment for the fielded system. Engineering Services and procurement contract was awarded to the AN/TPS-63's Original Equipment Manufacturer, Northrop Grumman. The main focus of the contract will be the development and procurement of replacement sub-assemblies currently identified as containing obsolete components, as well as those assemblies experiencing reliability, maintainability and safety related issues.

(U) E. MAJOR PERFORMERS:

(U) Lockheed Martin Corp, Syracuse, NY. Contract awarded in 2005 for AN/TPS-59 to develop ECPs for software improvements and DMS issues. FY05 through FY10 project contract with LMC in Jan of each year to develop ECPs for software improvements.

(U) Sensis Corp was awarded the contract in 2006 to support risk mitigation efforts for the 3DELRR requirement (AN/TPS-59 system development risk mitigation).

(U) G/ATOR contract was awarded in March 2007. Northrop Grumman Corporation is the Prime Contractor and Sensis is the major subcontractor.

Exhibit R-3 Cost Analysis										DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT							PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 OPERATIONAL SYS DEV			0206313M Marine Corps Communication Systems							C3099 RADAR SYSTEMS				
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
AN/TPS-59	C/CPFF	Lockheed, Syracuse NY	15.581	5.803	01/08	12.591	01/09	13.014	01/10					
AN/TPS-59	C/CPFF	Sensis, Syracuse NY	0.000	7.132	07/08	1.210	07/09	0.300	N/A					
AN/TPS-59 PIP	C/CPFF	TBD	0.000	0.000	NA	0.000	NA	0.000	01/10					
SHORT/MEDIUM RANGE	RCP	Northrop Grumman	1.362	0.230	01/08	0.255	08/09	0.217	01/10					
G/ATOR	CPIF	Northrop Grumman	54.333	75.001	11/07	70.505	11/08	0.000	N/A					
G/ATOR (GFE)	MIPR	FT MONMOUTH NJ	0.800	0.982	N/A	0.000	N/A	0.000	N/A					
Subtotal Product Dev			72.076	89.148		84.561		13.531						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
GWLR/FTAS	WR	NSWC, Dahlgren, VA	3.970	0.510	11/07	0.440	11/08	0.493	11/09					
GWLR/FTAS	MIPR	US Army CECOM	1.932	0.000	N/A	0.000	N/A	0.000	N/A					
GWLR/FTAS	WR	MCLB Barstow	1.200	0.000	N/A	0.000	N/A	0.000	N/A					
GWLR/FTAS	WR	NSWC, Crane, IN	0.565	0.597	11/07	0.687	11/08	0.686	11/09					
GWLR/FTAS	C/FFP	MCSC, Quantico, VA	0.200	0.000	N/A	0.600	TBD	0.640	TBD					
SHORT/MEDIUM RANGE	WR	NSWC, Crane, IN	0.591	0.000	N/A	0.000	N/A	0.000	N/A					
G/ATOR (PBL)	C/FFP	EG&G Tech, Dumfries, VA	1.500	0.259	11/07	0.000	N/A	0.000	N/A					
G/ATOR (RADAR ENGINEER)	WR	NRL, Washington, DC	0.824	0.200	11/07	0.000	N/A	0.000	N/A					
G/ATOR	MIPR	MITRE, Boston, MA	1.050	0.736	11/07	1.100	12/08	0.000	N/A					
G/ATOR (RADAR ENGINEER)	WR	MCOTEA-John Lee	0.505	0.256	11/07	0.265	11/08	0.000	N/A					
G/ATOR	RCP	MCR Federal, MCSC	0.307	0.225	11/07	0.244	11/08	0.000	N/A					
G/ATOR	WR	NSWC-DAHLGREN	0.000	4.747	11/07	6.420	11/08	0.000	N/A					
G/ATOR	WR	NSWC-CRANE	0.920	0.290	11/07	0.413	11/08	0.000	N/A					
G/ATOR	C/FFP	MCSC, Quantico, VA	4.030	0.450	11/07	0.475	11/08	0.000	N/A					
G/ATOR	C/FFP	MCSC, Quantico, VA	4.206	0.200	11/07	0.880	01/09	0.000	N/A					
Subtotal Support			21.800	8.470		11.524		1.819						
Remarks:														

Exhibit R-3 Cost Analysis									DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 OPERATIONAL SYS DEV			0206313M Marine Corps Communication Systems				C3099 RADAR SYSTEMS							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
											</			

Exhibit R-4-4a Project Schedule/Detail

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N /BA-7 OPERATIONAL
SYSTEM DEVELOPMENT

PROGRAM ELEMENT
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME
C3099 RADAR SYSTEMS

FAMILY OF TARGET ACQUISITION SYSTEMS SCHEDULE PROFILE (FTAS/GWLR)

Program Funding Summary

(APPN, BLI #, NOMEN)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) RDT&E,N, C3099, FTAS	1.157	1.777	1.819
(U) PMC, BLI#465000, FTAS	112.464	10.143	5.837

Exhibit R-4-4a Project Schedule/Detail						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 OPERATIONAL SYSTEM DEVELOPMENT		PROGRAM ELEMENT 0206313M Marine Corps Communication Systems				PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS	

FTAS/GWLR SCHEDULE DETAIL							
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Re-Cap		3rd Q-----3rd Q					
LCU Replacement		3rd Q-----3rd Q				2nd Q-----	
MILTOPE 750M Refresh						1st Q	
Radar Processor ECP	2nd Q-----1st Q						
Radar Processor Refresh						2nd Q	
Software PDSS		4th Q-----					
MARCENT EDL AAO Increase (6 Systems)			4th Q-----4th Q				
202K AAO Increase (16 Systems)					1st Q-----4th Q		
LCMR Procurement (46 Systems)			4th Q-----4th Q				
LCMR IOC						2nd Q	
LCMR FOC							2nd Q
Radar Processor Procurement					1st Q-----1st Q		

Exhibit R-4-4a Project Schedule/Detail			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 OPERATIONAL SYSTEM DEVELOPMENT	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS		

G/ATOR Overall Program Schedule

		FY05	FY06	FY07	FY08	FY09	FY10
G/ATOR Baseline: Air Defense/Air Surveillance Capability	R&D	MS B AUG SYSTEM DEMONSTRATION AND DEVELOPMENT 					

Program Funding Summary

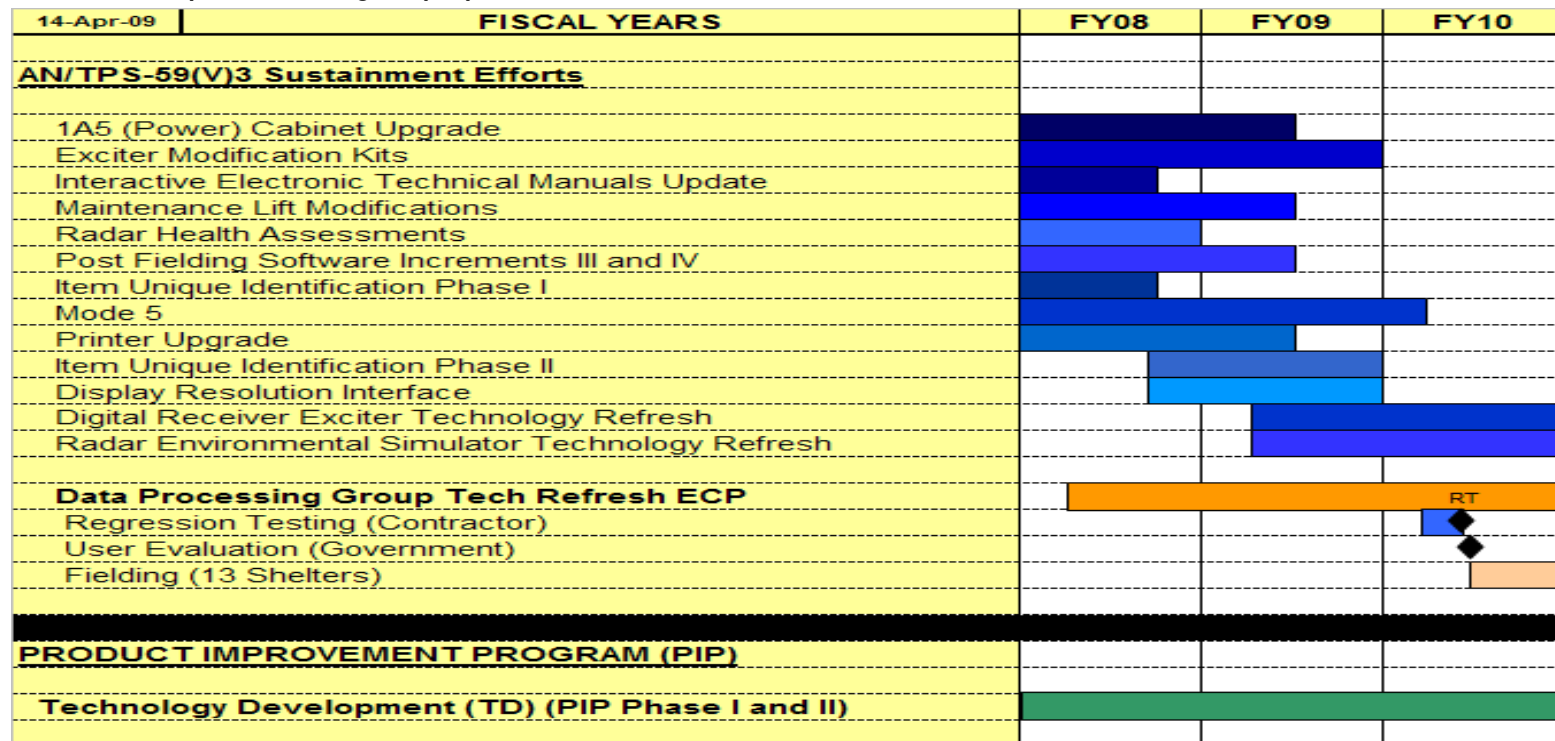
(APPN, BLI #, NOMEN)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) PMC, 465000, G/ATOR	0.000	17.389	0.000
(U) RDT&E,N, C9C89, G/ATOR	0.000	0.000	63.925
(U) RDT&E,N, C3099, G/ATOR	88.696	85.469	0.004

Exhibit R-4-4a Project Schedule/Detail						DATE: May 2009																																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 OPERATIONAL SYSTEM DEVELOPMENT		PROGRAM ELEMENT 0206313M Marine Corps Communication Systems				PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">G/IATOR SCHEDULE DETAIL</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> <tr> <td>Surveillance Capability</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone B</td> <td style="text-align: center;">4thQ</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>System Development and Demonstration Phase</td> <td colspan="6" style="text-align: center;">4thQ-----</td> </tr> <tr> <td>System Integration (EDM)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">3rdQ</td> </tr> </table>								G/IATOR SCHEDULE DETAIL	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	Surveillance Capability							Milestone B	4thQ						System Development and Demonstration Phase	4thQ-----						System Integration (EDM)						3rdQ
G/IATOR SCHEDULE DETAIL	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010																																				
Surveillance Capability																																										
Milestone B	4thQ																																									
System Development and Demonstration Phase	4thQ-----																																									
System Integration (EDM)						3rdQ																																				

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 OPERATIONAL SYSTEM DEVELOPMENT	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS

AN/TPS-59 Product Improvement Program (PIP) Schedule



Program Funding Summary

	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N, C3099, AN/TPS-59 MODS	13.648	15.617	15.689
(U) PMC, BLI#465000, AN/TPS-59 MODS	20.087	12.469	4.308

Exhibit R-4-4a Project Schedule/Detail			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RD&E, N /BA-7 OPERATIONAL SYSTEM DEVELOPMENT	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C3099 RADAR SYSTEMS		

AN/TPS-59 SCHEDULE DETAIL	FY 2007	FY 2008	FY 2009	FY 2010
Sustainment of TPS-59				
IFF Mode 5 Upgrade		1st Q-----4th Q		
Post Fielding Software Updates		1st Q-----4th Q		
AN/TPS-59 PIP Concept & Technology Developmental Phase				
System Development and Demonstration Phase				
System Design				2ndQ-----
System Integration (EDM)				

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-7 OPERATIONAL SYSTEM DEVELOPMENT		0206313M Marine Corps Communication Systems				C9C89 G/ATOR SYSTEM			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total			
Project Cost		0.000	0.000	63.925	0.000	63.925			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
Ground/Air Task Oriented Radar (G/ATOR) (formerly known as the Multi-Role Radar System (MRRS)) is an expeditionary, 3-dimensional, high-mobility, multi-purpose wheeled vehicle, short/medium range multi-role radar designed to detect cruise missiles, air breathing targets, rockets, mortars, and artillery. MRRS and GWLR (Ground Weapons Locating Radar) merged into a single requirement/capability (G/ATOR) and will replace an aging fleet of single mission legacy radar systems. G/ATOR will support air defense, air surveillance, counter-battery/target acquisition, aviation radar tactical enhancements and the final evolution will also support the Air Traffic Control mission. (This project was funded under project C3099 prior to FY2010)									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	46.965	0.000				
RDT&E Articles Qty									
G/ATOR: Contractor Technical, Development Engineering/EDM									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	2.015	0.000				
RDT&E Articles Qty									
G/ATOR: Test and Evaluation									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.150	0.000				
RDT&E Articles Qty									
G/ATOR: Program Office Management & Travel Costs									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	2.500	0.000				
RDT&E Articles Qty									
G/ATOR: Government Technical Support									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.500	0.000				
RDT&E Articles Qty									
G/ATOR: Government Furnished Equipment (GFE)									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	11.795	0.000				
RDT&E Articles Qty									
G/ATOR: Engineering, Management, & Logistics Support									
(U) Total \$ (C9C89 G/ATOR System)		0.000	0.000	63.925	0.000				

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-7 OPERATIONAL SYSTEM DEVELOPMENT	0206313M Marine Corps Communication Systems	C9C89 G/ATOR SYSTEM																		
(U) C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;"><u>FY 2008</u></th> <th style="text-align: right;"><u>FY 2009</u></th> <th style="text-align: right;"><u>FY 2010</u></th> <th style="text-align: right;"><u>FY 2010</u> <u>OCO</u></th> <th style="text-align: right;"><u>FY2010</u> <u>TOTAL</u></th> </tr> </thead> <tbody> <tr> <td>(U) PMC BLI 465000, Grnd/Air Task Oriented Radar</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">17.389</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>(U) RDT&E,N, C3099, Grnd/Air Task Oriented Radar</td> <td style="text-align: right;">88.696</td> <td style="text-align: right;">85.469</td> <td style="text-align: right;">0.004</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.004</td> </tr> </tbody> </table> (U) Related RDT&E: (U) PE 0206313M (Marine Corps Communication Systems) PROJECT C3099 (U) The Ground/Air Task Oriented Radar (G/ATOR), formerly known as Multi-Role Radar System (MRRS) will fill the MRRS and GWLR requirements. Five legacy systems (AN/TPS-63, AN/UPS-3, AN/MPQ-62, AN/TPS-73 and AN/TPQ-46A) will be replaced by a single material design that offers an opportunity to reduce development cost and combine training & logistics assets. MRRS Aviation systems replace the AN/TPS-63, AN/MPQ-62 and AN/TPS-73 systems as well as additional systems in support of the SHORAD mission (CLAWS weapon cue); MRRS Ground system is a one for one replacement of the AN/TPQ-46A. The System Development & Demonstration (SDD) phase designed to allow for technology insertion due to obsolescence and technology growth issues. Initial builds will be back fitted to current then year technology as required. As they become available, Tactical Enhancements will parallel field to then year initial builds and back fitted to earlier builds. Two Engineering Development Models (EDM) -- one Contractor, one Government -- will be developed during the SDD phase and flowed down to support builds. (U) E. MAJOR PERFORMERS: (U) G/ATOR contract was awarded in March 2007. Northrop Grumman Corporation is the Prime Contractor and Sensis is the major subcontractor.			<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010</u> <u>OCO</u>	<u>FY2010</u> <u>TOTAL</u>	(U) PMC BLI 465000, Grnd/Air Task Oriented Radar	0.000	17.389	0.000	0.000	0.000	(U) RDT&E,N, C3099, Grnd/Air Task Oriented Radar	88.696	85.469	0.004	0.000	0.004
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010</u> <u>OCO</u>	<u>FY2010</u> <u>TOTAL</u>															
(U) PMC BLI 465000, Grnd/Air Task Oriented Radar	0.000	17.389	0.000	0.000	0.000															
(U) RDT&E,N, C3099, Grnd/Air Task Oriented Radar	88.696	85.469	0.004	0.000	0.004															

Exhibit R-3 Cost Analysis									DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 OPERATIONAL SYS DEV			0206313M Marine Corps Communication Systems				C9C89 G/ATOR SYSTEM							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
G/ATOR	CPIF	Northrop Grumman	0.000	0.000	11/07	0.000	11/08	47.634	11/09					
G/ATOR (GFE)	MIPR	FT MONMOUTH NJ	0.000	0.000	N/A	0.000	N/A	0.500	11/09					
Subtotal Product Dev			0.000	0.000		0.000		47.469						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
G/ATOR (RADAR ENGINEER)	WR	NRL, Washington, DC	0.000	0.000	N/A	0.000	N/A	0.370	11/09					
G/ATOR	MIPR	MITRE, Boston, MA	0.000	0.000	N/A	0.000	N/A	1.700	11/09					
G/ATOR (RADAR ENGINEER)	WR	MCOTEA	0.000	0.000	N/A	0.000	N/A	0.320	11/09					
G/ATOR	RCP	MCR Federal, MCSC	0.000	0.000	N/A	0.000	N/A	0.250	11/09					
G/ATOR	WR	NSWC-DAHLGREN	0.000	0.000	N/A	0.000	N/A	6.010	11/09					
G/ATOR	WR	NSWC-CRANE	0.000	0.000	N/A	0.000	N/A	0.530	11/09					
G/ATOR	C/FFP	MCSC, Quantico, VA	0.000	0.000	N/A	0.000	N/A	0.340	11/09					
G/ATOR	C/FFP	MCSC, Quantico, VA	0.000	0.000	N/A	0.000	N/A	0.171	11/09					
Subtotal Support			0.000	0.000		0.000		9.691						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
G/ATOR	WR	MCOTEA, Quantico, VA	0.000	0.000	N/A	0.000	N/A	0.965	11/09					
G/ATOR	WR	MCTSSA CA.	0.000	0.000	N/A	0.000	N/A	0.300	11/09					
G/ATOR	MIPR	YUMA AZ	0.000	0.000	N/A	0.000	N/A	0.000	11/09					
G/ATOR	MIPR	Aberdeen Md.	0.000	0.000	N/A	0.000	N/A	0.750	11/09					
Subtotal T&E			0.000	0.000		0.000		2.015						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
G/ATOR	RCP	General Dynamics, Stafford, VA	0.000	0.000	N/A	0.000	N/A	4.400	11/09					
G/ATOR (TAD)	RCP	MCSC, Quantico, VA	0.000	0.000	N/A	0.000	N/A	0.150	11/09					
G/ATOR	C/CPFF	MCSC, Quantico, VA	0.000	0.000	N/A	0.000	N/A	0.200	11/09					
Subtotal Management			0.000	0.000		0.000		4.750						
Remarks:														
Total Cost			0.000	0.000		0.000		63.925						

Exhibit R-4-4a Project Schedule/Detail							DATE:
							May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT					PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems					C9C89 G/ATOR SYSTEM	
G/ATOR Overall Program Schedule							
		FY05	FY06	FY07	FY08	FY09	FY10
G/ATOR Baseline: Air Defense/Air Surveillance Capability	R&D	MS B AUG 05		SYSTEM DEMONSTRATION AND DEVELOPMENT			

<u>Program Funding Summary</u>		FY 2008	FY 2009	FY 2010
<u>(APPN, BLI #, NOMEN)</u>				
(U) PMC, 465000, G/ATOR		0.000	17.389	0.000
(U) RDT&E,N, C9C89, G/ATOR		0.000	0.000	63.925
(U) RDT&E,N, C3099, G/ATOR		88.696	85.469	0.004

G/ATOR SCHEDULE DETAIL	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
G/ATOR Baseline: AIR Defense/Air Surveillance Capability						
Milestone B	4thQ					
System Development and Demonstration Phase	4thQ-----					
System Integration (EDM)						3rdQ

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Sys			PROJECT NUMBER AND NAME C9999 CONGRESSIONAL ADDS																			
		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015															
		10.122	3.789	0.000	0.000	0.000	0.000	0.000	0.000															
RDT&E Articles Qty																								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Battlefield Sensor Netting System: This is a system using several sensors in a battlefield area, with groups of sense in communication with sensor netting stations. Each sensor netting station broadcasts air traffic data to terminal users in its area. The sensors may be radars, infrared detectors, etc. The sensor netting station includes communications to each sensor, processing facilities for handling aircraft I.D. and eliminating redundant targets, and communications to terminal users. The terminal users may include missile or gun batteries, tank or infantry columns, etc. This funds the development of increasing timeliness and accuracy to better engage aircraft and missiles earlier. Performance Enhancements for Info Assurance and Info Systems: Supports the development and testing of Wide Area Network (WAN) Connection Assurance and Acceleration (WCAA) software. Counterintelligence and Human Intelligence Equipment Program (CIHEP): Provides the Marine Corps CI/HUMINT companies with the capability to rapidly collect, process and disseminate intelligence information in support of military operations. CIHEP is comprised of modular groupings of Commercial Off the Shelf (COTS)/Government Off the Shelf (GOTS)/Non-Developmental Item (NDI) components that will enhance the Operating Force CI/HUMINT collection capabilities and improve interoperability within the Joint CI/HUMINT communities. The modularity allows personnel to perform myriad collection missions to support Commanders while only carrying the items needed to accomplish the specific tasking. This budget item responds to the certain forensic document/media exploitation and intelligence collection capabilities that have been added to the CIHEP Baseline as a result of Humint Exploitation Team employments in Counter Insurgency and Irregular Warfare against non-traditional enemies. The improvement, integration, design and evaluation of these technologies will improve Document and Media Exploitation (DOMEX) capabilities in the CIHEP Suite of equipment and result in a greater synergy between HUMINT and SIGINT in ir Intelligence Analysis System Family of Systems (IAS FoS)C9E20A:uses a three-tiered approach for receiving, parsing, analyzing, and disseminating fused all-source Intelligence data. The first tier, the Marine Expeditionary Force IAS (MEF IAS), is a mobile system that supports the MEF Command Element. The second tier, the Intelligence Operations Server (IOSv2a/IOSv3), is a team portable system designed to support the Intelligence Operations of the Major Subordinate Commands (MSC) Div, Wing, MLG, Regt, and MEU. The third tier, the Intelligence Operations Workstation (IOWv2), serves as the Intelligence link for the battalion and squadron commands to higher headquarters or as a stand-alone system.																								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1"> <tr> <td>COST (\$ in Millions)</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> <td>FY 2011</td> </tr> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>2.314</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	Accomplishment/Effort Subtotal Cost	2.314	0.000	0.000	0.000	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011																				
Accomplishment/Effort Subtotal Cost	2.314	0.000	0.000	0.000																				
RDT&E Articles Qty																								
Battlefield Management System (BMS)/Battlefield Sensor Netting C9C68A - Funds the development of increasing timeliness and accuracy to better engage enemy aircraft and missiles earlier.																								

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-7 Operational Systems Development	0206313M Marine Corps Communications Sys	C9999 CONGRESSIONAL ADDS		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost	5.880	0.000	0.000	0.000
RDT&E Articles Qty				
Performance Enhancements for Info Assurance and Info Systems: C9C69A Development and testing of Wide Area Network (WAN) Connection Assurance and Acceleration (WCAA) software. Provides capability to support advanced software configurations of WCAA that improve network performance within existing connectivity as well as harden, test, certify, and improve tactical configurations of the existing underlying technology. Perform testing to identify selected information systems including NCES compatible collaboration services and measure anticipated performance improvements across wide-area networks with high latency and noise characteristics.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost	1.928	0.000	0.000	0.000
RDT&E Articles Qty				
Counterintelligence and Human Intelligence Equipment Program (CIHEP): C9C70A This funding will support development, engineering and integration of key capabilities for document and media exploitation already resident in the System For Triaging Key Evidence with other software and hardware items already used to accomplish this mission in the Counter Intelligence Human Intelligence Equipment Program (CIHEP) and the Radio Battalion Modernization Project. These upgrades and enhancements will be accomplished primarily through software enhancements and design of minor hardware configuration items to allow interoperability and integration with HUMINT and SIGINT systems.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishment/Effort Subtotal Cost		1.516	0.000	0.000
RDT&E Articles Qty				
IAS: C9E20A FY09 USMC funds to employ cross-disciplinary approach to help military & Intel officials build more powerful investigative and analytic tools. Provides semi-automatic means to predict insurgent's point of origin/bases.				
(U) Total \$	10.122	1.516	0.000	0.000
(U) C. OTHER PROGRAM FUNDING SUMMARY: (U) Related RDT&E: (U) D. ACQUISITION STRATEGY: (U) E. MAJOR PERFORMERS:				

EXHIBIT R-2a, RDT&E Project Justification					DATE: MAY 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development			PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Sys			PROJECT NUMBER AND NAME C9999 CONGRESSIONAL ADDS			
			FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 TOTAL		
			2.314	6.183	0.000	0.000	0.000		
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
Battlefield Sensor Netting System (BSNS) - This is a system using several sensors in a battlefield area, with groups of sensors in communication with sensor netting stations. Each sensor netting station broadcasts air traffic data to terminal users in its area. The sensors may be radars, infrared detectors, etc. The sensor netting station includes communications to each sensor processing facility for handling aircraft I.D. and eliminating redundant targets, and for communications to terminal users. The terminal users may include missile or gun batteries, tank or infantry columns, etc. This funds the development of increasing timeliness and accuracy to better engage aircraft and missiles earlier. Mobile Modular Command and Control (M2C2) - The development of Mobile Modular Command and Control (M2C2) technology provides the Marine Operating Forces with an on-the-move command and control (OTM C2) capability with over-the-horizon (OTH) communication links. The Congressional funding will help to baseline the M2C2 capability and prepare it for transition into an acquisition program of record, the Command Operations Center (COC).									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
COST (\$ in Millions)			FY 2008	FY 2009		FY 2010		FY2010 OCO	
Accomplishment/Effort Subtotal Cost			2.314	2.394		0.000		0.000	
RDT&E Articles Qty									
Battlefield Sensor Netting (BSN) C9C68A - Funds the development of increasing timeliness and accuracy to better engage enemy aircraft and missiles earlier									
COST (\$ in Millions)			FY 2008	FY 2009		FY 2010		FY2010 OCO	
Accomplishment/Effort Subtotal Cost			0.000	3.789		0.000		0.000	
RDT&E Articles Qty									
Mobile Modular Command and Control (M2C2) C9E21A - The ONR M2C2 technology development effort has reached an adequate level of maturity to begin engineering development efforts for the transition to an acquisition program. FY09 funds are required to begin the development of acquisition documentation and initiate the competitive source selection process.									
(U) Total \$			2.314	6.183		0.000		0.000	
(U) C. OTHER PROGRAM FUNDING SUMMARY: (U) RELATED RDT&E: (U) D. ACQUISITION STRATEGY: (U) E. MAJOR PERFORMERS:									

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.							
RDT&E, N /BA-7 Operational System Development		0206623M Marine Corps Ground Combat/Supporting Arms Systems							
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY10 Total			
Total PE Cost		80.487	119.007	120.379	0.000	120.379			
C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)		5.257	43.054	45.004	0.000	45.004			
C1555 Light Armored Vehicle (LAV) PIP		23.772	11.388	18.836	0.000	18.836			
C1901 Marine Corps Ground Weaponry PIP		5.830	7.720	9.850	0.000	9.850			
C2086 Marine Enhanced Program (MEP)		3.453	4.167	3.380	0.000	3.380			
C2112 Lightweight 155MM Howitzer		0.000	0.000	1.400	0.000	1.400			
C2237 Amphibious Vehicle Test Branch (AVTB)		0.872	0.920	0.906	0.000	0.906			
C2315 Training Devices/Simulators		14.282	20.699	13.280	0.000	13.280			
C2503 Family of Combat Equip Support & Services		10.051	14.817	9.864	0.000	9.864			
C2928 EIFGSWS (HIMARS)		1.160	2.436	1.951	0.000	1.951			
C3098 Fire Support Systems		5.923	8.856	8.730	0.000	8.730			
C4002 Family of Raid Reconnaissance		2.945	0.961	4.044	0.000	4.044			
C9C85 Marine Personnel Carrier (MPC)		0.000	0.000	3.134	0.000	3.134			
C9999 Congressional Adds		6.942	3.989	0.000	0.000	0.000			
Quantity of RDT&E Articles									
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
This PE provides modification to Marine Corps Expeditionary Ground Force Weapon Systems to increase lethality, range, survivability and operational effectiveness. It also provides for the development of AAV7A1 reliability, maintainability, operational and safety modifications, improvements in command and control in the ADMS, and product improvements to the family of LAVs. The AVTB provides facilities and personnel which perform a broad range of testing, repair and technical services to amphibious vehicles. This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.									
B. PROGRAM CHANGE SUMMARY									
	FY2008	FY2009	FY2010						
Funding:									
FY 2009 President's Budget:	63.277	136.080	177.850						
FY 2010 President's Budget:	80.487	119.007	120.379						
Total Adjustments:	17.210	-17.073	-57.471						
Summary of Adjustments:									
a. Congressional Adjustments:		-0.323							
- FY08 GWOT:	9.768								
b. SBIR/STTR Transfer:	-0.873								
c. Program Adjustments:	8.315	-16.750	-55.742						
d. Rate/Misc Adjustments:			-1.729						
Subtotal	17.210	-17.073	-57.471						

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009																																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supt Arms Sys			PROJECT NUMBER AND NAME C0021 Amphibious Assault Vehicle 7A1 (AAV7A1)																																																															
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO	FY2010 Total																																																														
Project Cost		5.257	43.054	45.004	0.000	45.004																																																														
RDT&E Articles Qty																																																																				
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) PM AAV lifecycle support and Primary Item Control Agent (PICA) functions. Funding to integrate Survivability, C4I & Environment/Habitability upgrades to the AAV. (U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2010 OCO</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">42.189</td> <td style="text-align: center;">43.300</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (U) AAV (FOV) Survivability, C4I, Environment/Habitability (SCE) upgrade program: Capabilities based upgrade program centered on material upgrades in survivability C4I and Environment/Habitability. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2010 OCO</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: center;">5.257</td> <td style="text-align: center;">0.865</td> <td style="text-align: center;">1.704</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (U) PM AAV Operations Support: Evaluation and testing of safety improvements and fact of life changes to maintain the AAV Family of Vehicles (FOV). <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>(U) Total \$</th> <th>5.257</th> <th>43.054</th> <th>45.004</th> <th>0.000</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (U) C. OTHER PROGRAM FUNDING SUMMARY: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th><u>Line Item No. & Name</u></th> <th><u>FY2008</u></th> <th><u>FY2009</u></th> <th><u>FY2010</u></th> <th><u>FY2010 OCO</u></th> </tr> </thead> <tbody> <tr> <td>PMC BLI# 202100 (AAV7A1)</td> <td style="text-align: center;">28.556</td> <td style="text-align: center;">5.408</td> <td style="text-align: center;">6.092</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>PMC BLI# 202100 (AAV7A1)</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.054</td> <td style="text-align: center;">0.062</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>PMC BLI# 202100 (AAV SCE)</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">2.973</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> (U) Related RDT&E: None (U) D. ACQUISITION STRATEGY: TBD (U) E. MAJOR PERFORMERS: TBD									COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	Accomplishment/Effort Subtotal Cost	0.000	42.189	43.300	0.000	RDT&E Articles Qty					COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	Accomplishment/Effort Subtotal Cost	5.257	0.865	1.704	0.000	RDT&E Articles Qty					(U) Total \$	5.257	43.054	45.004	0.000						<u>Line Item No. & Name</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2010 OCO</u>	PMC BLI# 202100 (AAV7A1)	28.556	5.408	6.092	0.000	PMC BLI# 202100 (AAV7A1)	0.000	0.054	0.062	0.000	PMC BLI# 202100 (AAV SCE)	0.000	0.000	2.973	0.000
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO																																																																
Accomplishment/Effort Subtotal Cost	0.000	42.189	43.300	0.000																																																																
RDT&E Articles Qty																																																																				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO																																																																
Accomplishment/Effort Subtotal Cost	5.257	0.865	1.704	0.000																																																																
RDT&E Articles Qty																																																																				
(U) Total \$	5.257	43.054	45.004	0.000																																																																
<u>Line Item No. & Name</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2010 OCO</u>																																																																
PMC BLI# 202100 (AAV7A1)	28.556	5.408	6.092	0.000																																																																
PMC BLI# 202100 (AAV7A1)	0.000	0.054	0.062	0.000																																																																
PMC BLI# 202100 (AAV SCE)	0.000	0.000	2.973	0.000																																																																

Exhibit R-3 Cost Analysis							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems				C0021 Amphibious Assault Vehicle 7A1 (AAV7A1)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
PRODUCT DEVELOPMENT													
Comp I.D. and Demo/Tests	Gov	SPAWAR											
Safety Analysis	Gov	HERF/HERP/HERO Anal Dahlgren, VA	0.000	0.000		0.175	02/09						
RAM/Safety	Gov	Shock & Vibe Components SPAWAR SC	0.000	0.080	08/08	0.000							
	Gov	Fire suppression KIDDIE SPAWAR SC	0.000	0.000		0.035	TBD						
SCE Dev/Eval	TBD	TBD	0.000	0.000		0.000		42.686	TBD				
Comp I.D. and Demo/Tests	Gov	SPAWAR/NSWC Dahlgren & Crane	0.000			8.500	01/09						
Comp I.D. and Demo/Tests	TBD	BAE Systems, Triangle VA	0.000	1.705	01/08	19.251	02/09						
Integration (APU)	CPFF	BAE Systems, Triangle VA	0.000	0.659	01/08								
Safety Analysis	TBD	BAE Systems, Triangle VA	0.000			1.500	02/09						
RAM/Safety	TBD	BAE Systems, Triangle VA	0.000			1.500	02/09						
Subtotal Product Dev			0.000	2.444		30.961		42.686					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
PROGRAM SUPPORT													
Technical & Engineering Spt	Gov	SPAWAR SC	0.000	0.000		0.063	TBD						
Technical & Engineering Spt	Gov	SPAWAR/NSWC Dahlgren & Crane	0.000	0.000		3.824	01/09						
Technical & Engineering Spt	CPFF	BAE Systems, Triangle VA	0.000	2.785	01/08	0.444	02/09	0.560	TBD				
Documentation	TBD	BAE Systems, Triangle VA	0.000			1.132	02/09	0.227	TBD				
Support	TBD	BAE Systems, Triangle VA	0.000			2.691	02/09	0.531	TBD				
Subtotal Support			0.000	2.785		8.154		1.318					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
T&E													
	Gov	Component TEMPEST	0.00	0.000		0.200	01/09						
	Gov	EMI Evaluation SPAWAR SC	0.00	0.000		0.165	01/09						
	Gov	DT 29 Palms CA	0.00	0.000		0.035	01/09						
	Gov	DT Camp LeJeune NC	0.00	0.000		0.030	01/09						
Test and Eval	Gov	MCOTEA Quantico VA	0.00	0.028	10/07	0.107	10/08						
Subtotal T&E			0.000	0.028		0.537		0.000					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
MANAGEMENT													
Management	TBD	BAE Systems, Triangle VA	0.000	0.000		3.402	02/09	1.00	TBD				
Subtotal Management			0.000	0.000		3.402		1.000					
Remarks:													
Total Cost			0.000	5.257		43.054		45.004					

Exhibit R-4/4a Schedule Profile/Detail														DATE:				May 2009					
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT								PROJECT NUMBER AND NAME											
RDT&E, N /BA-7 Operational Sys Dev				0206623M Marine Corps Ground Combat/Supporting Arms Systems								C0021 Amphibious Assault Vehicle 7A1 (AAV7A1)											
Amphibious Assault Vehicle 7A1 (AAV7A1)																							
	FY 09				FY 10																		
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4			
	ECP Dev, Intg & Eval EDM Build				LRIP																		
	Critical Program Events																						
	Testing				DT / OA																		
	Decision Points				MS B				MS C														
	System Delivery																						
Program Funding Summary														FY 2008		FY 2009		FY 2010					
(APPN, BLI #, NOMEN)																							
(U) RDT&E,N (C0021) AAV7A1														5.257		43.054		45.004					
PMC BLI# 202100 (AAV7A1)														28.556		5.462		9.127					
AAV7A1 SCHEDULE DETAIL										FY 2008		FY 2009		FY 2010									
Test, Eval, Demo												1Q											
Final Systems Config														2Q									
Mileston C/LRIP														3Q-----									
Developmental Test												3Q											
Operational Evaluation																							
Fielding																							
IOC																							

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev			PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supporting Arms Systems			PROJECT NUMBER AND NAME C1555 Light Armored Vehicle (LAV) PIP		
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total			
Project Cost	23.772	11.388	18.836	0.000	18.836			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Light Armored Vehicle Family of Vehicles (LAV FOV) consists of six fielded LAV configurations, and one communications/intelligence-configured asset on a LAV chassis. The LAV FOV provides a logistically self-contained, highly mobile, and lethal combined arms combat system to the Marine Air-Ground Task Force (MAGTF). The LAV Product Improvement Program funds the development and testing of modifications of four programs; the LAV-Command & Communication (LAV-C2) Upgrade Program, the LAV Modification Program, LAV Anti-Tank System Program and the LAV Indirect Fire Modernization Program. These programs will ensure that the LAV FOV will be capable of conducting its assigned missions by enhancing lethality and survivability; reliability, availability, maintainability and durability; as well as reducing operations and support costs. The Marine Personnel Carrier (MPC) is part of a portfolio of capabilities that provide closure to real world operational gaps and shortfalls in the ability of the MAGTF to conduct ground based maneuver tasks. The MPC, as the medium capability category platform, provides a bridge in capability between the EFV and JLTV and a balance between the performance, protection and payload attributes. The MPC family of vehicles includes the baseline armored per two supporting mission role variants: a command & control variant and a recovery & maintenance variant. The MPC program moves to a separate line (C9C85) in FY10.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	9.741	5.769	0.000	0.000				
RDT&E Articles Qty								
MARINE PERSONNEL CARRIER - MPC: Develop Marine-PC fording capabilities with Appliqué Armor, fabricate prototypes, PMO & matrix support, PMO travel, and conduct DT/OT of Marine-PC prototypes.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	1.368	5.619	0.531	0.000				
RDT&E Articles Qty								
LAV-MODIFICATION: Research and development of numerous LAV Modification projects to address minor modification, safety, and obsolescence issues.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	6.489	0.000	0.000	0.000				
RDT&E Articles Qty								
LAV-C2 UPGRADE: LAV-C2 Upgrade prototype fabrication, conduct DT/OT, PMO & matrix support, PMO travel, CAAS in support of LAV-C2.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.000	6.144	0.000				
RDT&E Articles Qty								
LAV-ANTI-TANK SYSTEM: LAV-AT System prototype fabrication, conduct DT/OT, PMO & matrix support, PMO travel, CAAS in support of LAV-AT System.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.000	12.161	0.000				
RDT&E Articles Qty								
LAV-INDIRECT FIRE MODERNIZATION: LAV-Indirect Fire Modern. prototype fabrication, conduct DT/OT, PMO & matrix support, PMO travel, CAAS in support of LAV-Indirect Fire.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	6.174	0.000	0.000	0.000				
RDT&E Articles Qty								
LAV-RAM FULL: LAV-RAM - analysis of alternatives for Survivability upgrades (fuel tank, ballistic seats, floor protection) and LAV-R Upgrades (crane and winch), integration and testing of final solutions. PMO support.								
(U) Total \$	23.772	11.388	18.836	0.000				

EXHIBIT R-2a, RDT&E Project Justification					DATE:
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems		C1555 Light Armored Vehicle (LAV) PIP
(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>FY 2010 OCO</u>	
(U) PMC, 203800, LAV PIP	119.699	231.988	34.969	58.229	
(U) PMC, 700000, SPARES	0.000	1.145	0.000	0.000	
(U) Related RDT&E:					
PE 020623M C9C73A Ultrasonic Consol. Emb Sensors	1.157	0.000	0.000	0.000	
PE 020623M C9E22A Marine Corps Common Hardware	0.000	0.997	0.000	0.000	
(U) D. ACQUISITION STRATEGY: The LAV-C2 Upgrade will be utilizing commercial off-the-shelf, government off-the-shelf, and non-developmental item hardware and software to provide an integrated suite capable of enhanced voice and data transmissions. The majority of the effort will be the integration of existing hardware and software for this upgrade. To the maximum extent possible, components from both the Marine Corps and Army Common Hardware Suites will be utilized to reduce acquisition and support costs. The system architecture has been determined through a Tailored Executive Analysis. One contractor has been selected to fabricate a prototype which will be subjected to DT/OT.					
(U) D. ACQUISITION STRATEGY: The LAV Modification program funds numerous low-dollar, yet extremely important minor modifications, support equipment and tools and other projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The Marine Corps, PM-LAV Sustainment Readiness Team uses multi-disciplined integrated project teams consisting of engineering, logistical, contracting and financial personnel to manage Modification projects. The majority of contracts issued under the Modification line are subject to the competitive acquisition process.					
(U) D. ACQUISITION STRATEGY: The Marine Personnel Carrier (MPC) program will utilize Full and Open competition. The MPC is a family of vehicles consisting of a personnel carrier, a command and control platform and a maintenance and recovery vehicle. After Milestone A, a source selection will be held to select up to three contractors. Each of these contractors will provide a prototype personnel carrier vehicle that will be subjected to Government evaluation. The results of this evaluation will be used to support both a Milestone B decision as well as another source selection to choose the two best competitors that will be carried through the EMD phase (on the personnel carrier only). The results of the two competitors EMD efforts will be used to support a Milestone C decision as well as another source selection to choose the ultimate personnel carrier source for Low Rate Initial Production. The selected source will also be tasked to perform EMD on the command and control and maintenance and recovery vehicles. (Program moves to new project C9C85 in FY10).					
(U) D. ACQUISITION STRATEGY: The LAV Anti-Tank System program will focus on full and open competition to integrate a new turret into the LAV-AT variant with options for production. The LAV-ATM is a replacement for the M901A1 turret to correct operational and readiness deficiencies. It will be capable of firing the current family of TOW missiles and be forward compatible with the next generation of heavy anti armor missiles. The program will move forward analyzing a current system that was identified in a market survey conducted back in 2003. A trade study approved by the AoA IPT was completed in 2Q04 and resulted in combat modeling and life cycle cost estimations of each candidate system. The result of the trade study was used to determine the candidate system. That analysis leveraged off the results of the Anti-Armor Weapon System-Heavy (AAWS-H) AoA. Finalized Acquisition strategy, Acquisition Program Baselines and Test & Evaluation Master Plans will be prepared and presented during MS B.					
(U) D. ACQUISITION STRATEGY: The Indirect Fire Modernization program will acquire and integrate an NDI Mortar system (ordnance and fire control system) into the refurbished existing LAV-Mortar variant chassis. The LAV Indirect Fire Modernization is a replacement for the M252 81mm mortar of the LAV-M variant to correct operational effectiveness deficiencies. The LAV-M will have greater range, improved lethality and greater responsiveness. The preferred material solution was determined from a trade off analysis completed in 2Q04. The study methodology was approved by the AoA IPT later that fiscal year. That analysis leveraged off the results of the completed EFSS AoA. Finalized Acquisition strategy, Acquisition Program Baselines and Test & Evaluation Master Plans will be prepared during MS B.					
(U) D. ACQUISITION STRATEGY: The LAV RAM Supplemental funds two projects - the LAV Survivability II project and the LAV-Recovery upgrade project. Survivability II will add additional troop protection by incorporating ballistic seats, floor spall liner and fuel tank protection. LAV-R upgrade will replace the crane and winch on the Recovery vehicle due to obsolescence issues and operational requirements. Both projects will use full and open competition to select the best solution.					

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-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C1555 Light Armored Vehicle (LAV) PIP
(U) E. MAJOR PERFORMERS:		
LAV Modification		
FY08 BMI Defense Systems Inc., College Station, TX , Gunner Platform Rails. Apr 08		
FY09-FY10 Various		
LAV C2 Upgrade		
FY08 Lockheed-Martin Systems Integration, Owego, NY. Prototype Fabrication. Apr/May 08		
Marine-PC		
FY08 Georgia Tech Research Institute (GTRI), Atlanta, GA. Modeling and Simulation. Apr 08		
Nevada Automotive Test Center (NATC), Carson City, NV. Mobility Testing. Dec 07		
FY09 Nevada Automotive Test Center (NATC), Carson City, NV. Mobility Testing. Dec 08		
Space & Naval Warfare Systems (SPAWAR), N. Charleston, SC. Jan 09		
BADENOCH, Troy, MI. Feb 09		
Waterways Experiment Station, Vicksburg, MS. Mar 09		
LAV RAM Supplemental		
FY08 Nevada Automotive Test Center (NATC), Carson City, NV. Sep 08		
Nevada Automotive Test Center (NATC), Carson City, NV. Jan 09		
TACOM R&D Center, Warren, MI Mar 09		
LAV Anti-Tank System		
FY10 TBD		
LAV Indirect Fire Modernization		
FY10 TBD		

Exhibit R-3 Cost Analysis								DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev				0206623M Marine Corps Ground Combat/Supporting Arms Systems				C1555 Light Armored Vehicle (LAV) PIP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Product Development (MOD)	Various	Various	3.386	0.697	Various	4.539	Various	0.342	Various					
Product Development (C2)	Various	Lockheed-Martin, Owego, NY	14.484	4.657	3Q08									
System Development (MPC)	Various	GTRI - Atlanta, GA		4.494	3Q08	3.234	2Q09							
System Development (RAM)	Various	NATC, Carson City, NV		4.226	4Q08									
System Development (RAM)	Various	TARDEC, Warren, MI		1.734	2Q09									
System Development (Anti-Tank)	Various	TBD						4.008	1Q10					
System Development (Indirect Fire)	Various	TBD						5.214	1Q/2Q10					
Subtotal Product Dev			17.870	15.808		7.773		9.564						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Technical Eng Services (C2)	Various	TACOM, Warren, MI/SPAWAR	0.380	0.606	2Q08									
Technical Eng Services (MOD)	Various	SURVICE, Belcamp, MD	0.838	0.060	2Q08	0.063	2Q09	0.066	2Q10					
Technical Eng Services (MPC)	Various	SURVICE, Belcamp, MD		0.337	2Q08	1.263	2Q09							
Technical Eng Services (MOD)	Various	SURVICE, Belcamp, MD		0.214	2Q09									
Technical Eng Services (Anti-Tank)	Various	TBD						0.136	2Q10					
Technical Eng Services (Indirect Fire)	Various	TBD						0.190	2Q10					
Subtotal Support			1.218	1.217		1.326		0.392						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Dev/Oper Test & Eval (MOD)	Various	Various	2.731	0.333	Various	0.567	Various	0.075	Various					
Dev/Oper Test & Eval (C2)	Various	Various	1.400	0.150	3Q09									
Dev/Oper Test & Eval (Anti-Tank)	Various	Various												
Dev/Oper Test & Eval (Indirect Fire)	Various	Various						3.916	2Q10					
Dev/Oper Test & Eval (MPC)	Various	Various		2.854	Various	0.102	Various							
Subtotal T&E			4.131	3.337		0.669		3.991						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Program Management (MOD)	Various	TACOM, Warren, MI	5.008	0.278	Various	0.450	Various	0.048	Various					
Program Management (C2)	Various	TACOM, Warren, MI	1.278	1.076	Various									
Program Management (MPC)	Various	Various		2.056	Various	1.170	Various							
Program Management (Anti-Tank)	Various	TACOM, Warren, MI						2.000	1Q10					
Program Management (Indirect Fire)	Various	TACOM, Warren, MI						2.841	1Q10					
Subtotal Management			6.286	3.410		1.620		4.889						
Remarks:														
Total Cost			29.505	23.772		11.388		18.836						

Exhibit R-4-4a Project Schedule/Detail

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C1555 Light Armored Vehicle (LAV) PIP

(U) D. SCHEDULE PROFILE:

LAV C2

Milestone A:	2nd Qtr, FY2000	Contract Award:	4th Qtr, FY 2009
Milestone B:	2nd Qtr, FY2005	IOC:	4th Qtr, FY 2010
DT / OT:	4th Qtr, FY 2006	FOC:	
Milestone C:	4th Qtr, FY 2009		

MARINE PC

Milestone A:	2nd Qtr, FY 2010	Milestone C:	
Milestone B:		Contract Award:	
DT		IOC:	
OT		FOC:	

ANTI-TANK SYSTEM

Milestone A:	4th Qtr, FY 2003	Milestone C:	
Milestone B:	1st Qtr, FY 2010	Contract Award:	
DT		IOC:	
OT		FOC:	

INDIRECT FIRE MODERNIZATION

Milestone A:	4th Qtr, FY 2003	Milestone C:	
Milestone B:	4th Qtr, FY 2009	Contract Award:	
DT		IOC:	
OT		FOC:	

Program Funding Summary(APPN, BLI #, NOMEN)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
<u>(U) RDT&E,N C1555, Light Armored Vehicle</u>	23.772	11.388	18.836
<u>(U) RDT&E, N C9C73A Ultrasonic Embedded</u>	1.157	0.000	0.000
<u>(U) RDT&E, N C9E22A Marine Corps</u>	0.000	0.997	0.000
<u>(U) PMC, BLI# 203800 LAV</u>	119.699	231.988	93.198
<u>(U) PMC, BLI# 700000 LAV SPARES</u>	0.000	1.145	0.000

Exhibit R-4-4a Project Schedule/Detail

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206623M Marine Corps Ground Combat/Supporting Arms Systems

C1555 Light Armored Vehicle (LAV) PIP

LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
LAV C2								
DT / OT:								
Milestone C:		4Q						
Contract Award:		4Q						
IOC:			4Q					
FOC:								

LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
MARINE PC								
Milestone A:			2Q					
Milestone B:								
DT								
OT								
Milestone C:								
Contract Award:								
IOC:								
FOC:								

Exhibit R-4-4a Project Schedule/Detail

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206623M Marine Corps Ground Combat/Supporting Arms Systems

C1555 Light Armored Vehicle (LAV) PIP

LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
ANTI-TANK SYSTEM								
Milestone A:								
Milestone B:			1Q					
DT								
OT								
Milestone C:								
Contract Award:								
IOC:								
FOC:								

LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
INDIRECT FIRE MODERNIZATION								
Milestone A:								
Milestone B:		4Q						
DT								
OT								
Milestone C:								
Contract Award:								
IOC:								
FOC:								

UNCLASSIFIED

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-7 Operational Systems Development		0206623M Marine Corps Ground Combat/Support Arms Systems			C1901 Marine Corps Ground Weaponry PIP			
		FY 2008	FY 2009	FY2010	FY 2010 OCO	FY 2010 Total		
		5.830	7.720	9.850	0.000	9.850		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
(U) This project develops joint and Marine Corps unique improvements to infantry weapons technology, improvements for Night Vision Equipment, Rifle Combat Optics, Family of Individual Optics, and monitors national and international weapons development.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.977	1.519	0.937	0.000			
RDT&E Articles Qty								
Company and Battalion Mortars: This funding will be used to provide system development and demonstration, pre-Milestone C activities, and purchasing Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		1.746	2.472	1.912	0.000			
RDT&E Articles Qty								
Family of Individual Optics: This funding will be utilized to support improvements on the technology that is currently used. Research efforts will evaluate the possibility of combining / integrating disparate sensor technology to increase the overall capability. One example will be combining the Infrared (IR) and Image Intensifier (I2) technologies into one system.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		1.086	1.120	1.129	0.000			
RDT&E Articles Qty								
Infantry Weapons Mods: Joint participation and Marine Corps unique activities for evaluation of safety, lethality, and technology improvements for Marine Corps infantry/reconnaissance individual /crew-served weapons. Prior year efforts improved the safety and performance of M2 Machine Guns and M249 Squad Automatic Weapons and the new M40A3 Sniper Rifle, mortar systems, and the current Marine Expeditionary Unit Special Operations Capability (MEU SOC) .45 caliber pistol. Recurring safety issues require immediate attention to maintain operational readiness. The Marine Corps pursues potential technological advances to enhance the operational utility of individual and crew-served weapon systems.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.000	3.913	0.000			
RDT&E Articles Qty								
Mission Payload Module (MPM): The MPM program was initiated by the Joint Non-Lethal Weapons (JNLW) Director during FY04. The Concept and Technology Development Phase (FY04-FY08) for MPM was funded solely through the JNLW program per Joint Service Memorandum of Agreement for all NLW programs. The JNLW Program funds the initial year of the System Development & Demonstration (SDD) Phase (FY09). Beginning in FY10, the Marine Corps will share the MPM RDT&E costs with the JNLW program. The JNLW Program funds numerous non-lethal efforts for all Services, and relies on individual Service support for the difference between the required R&D costs and available JNLW funds.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		2.021	2.308	1.658	0.000			
RDT&E Articles Qty								
Night Vision Mod Line: Joint participation and Marine Corps unique activities for evaluation of safety, lethality, and technology improvements for Marine Corps night vision devices.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.301	0.301	0.000			
RDT&E Articles Qty								
Sniper System Capability Sets: The Sniper System Capability Set (SSCS) will allow the Marine Sniper Team the capability to detect, recognize, identify, range, observe and engage targets during the day or night or in limited visibility/lighting conditions. This develops fusion technology for scout sniper optics in conjunction with the Family of Individual Optics (FOIO) and provides technology integration and testing.								
(U) Total \$		5.830	7.720	9.850	0.000			

Exhibit R-2a
Page 13 of 57

Exhibit R-3 Cost Analysis							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Systems Development			0206623M Marine Corps Ground Combat/Support Arms Systems					C1901 Marine Corps Ground Weaponry PIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Company/Battalion Mortar	VAR	NSWC, Crane, IN	0.030	0.977	01/08	1.519	07/09	0.937	10/09				
Family of Individual Optics	VAR	Night Vision Lab, Ft Belvoir, VA	0.600	1.374	VAR	1.378	01/09	0.300	10/09				
Family of Individual Optics	RCP	VAR	0.000	0.267	04/08	0.674	VAR	1.129	2Q10				
Inf Wpns Mods	VAR	MCCDC, Quantico, VA	1.712			0.500	VAR	0.498	VAR				
Inf Wpns Mods	MIPR	USARL, Adelphi, MD	0.000	0.300	07/08								
Mission Payload Module	VAR	AFRL, San Antonio, TX	0.000					0.683	VAR				
Night Vision Mod	RCP	VAR	0.395	0.453	VAR	1.253	VAR	0.981	10/09				
Night Vision Mod	VAR	Night Vision Lab, Ft Belvoir, VA	0.912	1.415	VAR	0.591	VAR	0.250	10/09				
Sniper System Cap Sets	VAR	VAR				0.251	VAR	0.251	01/10				
Subtotal Product Dev			3.649	4.786		6.166		5.029					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Family of Individual Optics	VAR	MCSC, Quantico, VA	0.822	0.105	VAR	0.420	VAR	0.408	VAR				
Inf Wpns Mods	RCP	MCSC, Quantico, VA	1.598	0.468	VAR	0.330	VAR	0.301	VAR				
Mission Payload Module	VAR	MCSC, Quantico, VA	0.000					1.275	VAR				
Night Vision Mod	VAR	CEOSS, Quantico, VA	1.163	0.083	VAR	0.335	VAR	0.407	VAR				
Subtotal Support			3.583	0.656		1.085		2.391					
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date				
Family of Individual Optics	VAR	MCOTEA, Quantico, VA	0.010	0.000		0.000		0.075	10/09				
Inf Wpns Mods	VAR	MCOTEA, Quantico, VA	0.874			0.290	VAR	0.330	VAR				
Inf Wpns Mods	RCP	MCSC, Quantico, VA		0.233	07/08								
Inf Wpns Mods	RCP	NSWC, Crane, IN		0.085	10/07								
Mission Payload Module	VAR	MCOTEA, Quantico, VA	0.000				VAR	1.955	VAR				
Night Vision Mod	VAR	NSWC, Dahlgren, VA	0.670	0.070	VAR	0.129	VAR	0.020	10/09				
Sniper System Cap Sets	VAR	MCOTEA, Quantico, VA				0.050	VAR	0.050	01/10				
Subtotal T&E			1.554	0.388		0.469		2.430					
Remarks:													
Total Cost			8.786	5.830		7.720		9.850					

Exhibit R-4/4a
Page 15 of 57

Exhibit R-4/4a
Page 16 of 57

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N /BA-7 Operational Systems	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Support Arms Systems	PROJECT NUMBER AND NAME C1901 Marine Corps Ground Weaponry PIP

MORTARS

Fiscal Year	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Cannons								
60mm and 81mm Development	■							
Contract Award		■						
WSESRB		■						
60mm and 81mm Production		■	■					
60mm and 81mm Fielding			■	■				
IOC			■					
Mortar Sight								
Market Research	■							
RFP		■						
Source Selection			■					
Contract Award			■					
Production			■	■				
Fielding				■				
Mortar Fire Control System								
Baseline Development		■	■	■				

Program Funding Summary	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N, C1901, Company and Battalion Mortars	0.977	1.519	0.937
(U) PMC, BLI 222000, Company and Battalion Mortars	5.550	4.929	2.195

MORTARS

Fiscal Year	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Cannons								
60mm and 81mm Development	1Q							
Contract Award		2Q						
WSESRB		4Q						
60mm and 81mm Production		4Q						
60mm and 81mm Fielding			1Q					
IOC			4Q					
Mortar Sight								
Market Research	1Q							
RFP		2Q						
Source Selection		2Q						
Contract Award		2Q						
Production		3Q						
Fielding			4Q					
Mortar Fire Control System								
Baseline Development	3Q		4Q					

Exhibit R-4/4a
Page 18 of 57

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat Supporting Arms Systems				C2086 Soldier/Marine Enhancement		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
Project Cost	3.453	4.167	3.380	0.000	3.380			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
Marine Expeditionary Rifle Squad (MERS) mission is to manage the infantry squad "squad as a system" by conducting integration, systems engineering, human factors, and modernization efforts across all the products that are worn, carried and consumed by the rifle squad. Physical integration, capability analysis, modeling and simulation, ergonomics, and configuration management are facilitated by this program in working with the various program managers and project officer in the development of their unique item that contributed to the squads overall capabilities. Weight and volume management are fundamental considerations in the insertion or modernization of any squad equipment. MERS works with Joint and NATO soldier modernization programs to harvest new technologies to increase the capability of the rifle squad. The program also ensures the integration of the rifle squad into the various mobility platforms currently in service and being developed to ensure a Marine and his equipment can operate effectively. This program is essential to ensure the combined synergistic equipment effects enhance the warfighting functions of the Marine rifle squad towards the strategic Marine Corps warfighting vision in the future. Marine Enhancement Program (MEP) - Funds low visibility, low cost items. Focuses on items of equipment which will benefit the individual Marine by reducing the load, increasing survivability, enhancing safety and improving combat effectiveness. The emphasis of the program is on non-developmental item/commercial off the shelf (NDI/COTS) available items which can be quickly evaluated and fielded. This program is coordinated with the Army's Soldier Enhancement Program.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	2.498	2.746	2.004	0.000				
RDT&E Articles Qty								
MEP - Explore NDI (non-developmental item) clothing and individual equipment, ground weapons, communications and command and control equipment that would improve the combat effectiveness and enhance safety and survivability of the Individual Marine.								
COST (\$ in Millions)	FY08	FY09	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.955	1.421	1.376	0.000				
RDT&E Articles Qty								
MERS - Conduct analysis of Soldier and Marine Infantry Systems and highlight integration issues; plan for modernization of future systems; develop processes and procedures for configuration management of the Infantry Squad.								
(U) Total \$	3.453	4.167	3.380	0.000				
(U) Technical: Not Applicable.								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
Line Item No. & Name	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total				
(U) PMC BLI 220800 Weapons	4.107	3.21	0.000	3.210				
(U) Related RDT&E: N/A								
(U) D. ACQUISITION STRATEGY: NDI/COTS								
(U) E. MAJOR PERFORMERS:								
Major Performers:								
FY08	RDECOM, Natick MAProduct Development; DT&E							
FY09	RDECOM, Natick MAProduct Development; DT&E							

Exhibit R-3 Cost Analysis							DATE: May 2009							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206623M Marine Corps Ground Combat Supporting Arms Systems				C2086 Soldier/Marine Enhancement							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
MERS Product Development	VAR	VAR	0.000	0.280	VAR	0.536	VAR	0.505	VAR					
MEP Product Development	VAR	VAR	0.000	0.821	VAR	0.850	VAR	0.761	VAR					
Subtotal Product Dev			0.000	1.101		1.386		1.266						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
MEP Operational Test & Eval	WR	VAR	0.000	0.523	VAR	0.722	VAR	0.304	VAR					
Subtotal Support			0.000	0.523		0.722		0.304						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
MERS Developmental Test & Eval	VAR	VAR	0.000	0.145	VAR	0.600	VAR	0.671	VAR					
MEP Developmental Test & Eval	VAR	VAR	0.000	0.674	VAR	0.484	VAR	0.386	VAR					
Subtotal T&E			0.000	0.819		1.084		1.057						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
MERS Program Mgmt/Tech Spt	VAR	VAR	0.000	0.530	VAR	0.285	VAR	0.200	VAR					
MEP Program Mgmt/Tech Spt	VAR	VAR	0.000	0.480	VAR	0.690	VAR	0.553	VAR					
Subtotal Management			0.000	1.010		0.975		0.753						
Remarks:														
Total Cost				3.453		4.167		3.380						

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-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2112 155MM LIGHTWEIGHT TOWED HOWITZER (LW-155)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
	0.000	0.000	1.400	0.000	1.400			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, and general support fires to maneuver forces. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles, but the addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munition to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings over the M198 system (~7000 lbs.). Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. The LW155 was first introduced into the Marine Corps in April 2005 and since then 10th, 11th, 12th and 14th Marines and the schoolhouses have been fielded. The Army has been fielding the system to its Stryker Brigades and Fires Brigades. The LW155 is currently in OEF and OIF with both Services.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.400	0.000				
RDT&E Articles Qty								
System Test and Evaluation								
(U) Total \$								
	0.000	0.000	1.400	0.000				
(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>FY 2010 OCO</u>	<u>FY 2010 Total</u>			
PMC BLI#218500, 155MM Lightweight Towed Howitzer	237.7	71.5	7.4	54	61.4			
(U) Related RDT&E: Not Applicable.								
(U) D. ACQUISITION STRATEGY:								
This effort shall design, integrate and qualify a Laser Ignition System for the M777A2 Lightweight 155mm Howitzer (LW155) that will replace the current Primer Feed Mechanism (PFM) and M82 percussion primers. This product improvement will eliminate problems which have been experienced in OEF and OIF and result in significant life cycle cost savings by eliminating the needs for the acquisition of primers to fire artillery rounds.								
(U) E. MAJOR PERFORMERS:								
Armaments Research and Development Center, Picatinny Arsenal, NJ LW155 Program Office, Picatinny Arsenal, NJ								

Exhibit R-3 Cost Analysis								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDT&E, N /BA 7 Operational Sys Development			0206623M Marine Corps Ground Combat/Supporting Arms Systems					C2112 155MM LIGHTWEIGHT TOWED HOWITZER				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			
Subtotal Product Dev			0.000	0.000		0.000		0.000				
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			
Subtotal Support			0.000			0.000		0.000				
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			
Govt Dev Eng	MIPR	ARDEC	0.000				11/09	1.400				
Subtotal T&E			0.000	0.000		0.000		1.400				
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date			
Subtotal Management			0.000	0.000		0.000		0.000				
Remarks:												
Total Cost			0.000			0.000		1.400				

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-7 Operational Sys Development		0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2315 Training Devices/Simulators		
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total		
		14.282	20.699	13.280	0.000	13.280		
RDT&E Articles Qty - Not Applicable								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Training simulators include Combined Arms Command & Control Training Upgrade System (CACCTUS), Deployable Virtual Training Environment (DVTE), Multiple Integrated Laser Engagement System (MILES) 2000, Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements and, Range Modernization/Transformation (RM/T). These training systems provide tactical weapons and decision-making skill training from entry level through MAGTF staff level. Systems will be interoperable and will allow for mission planning, mission rehearsal and concept evaluation in a valid synthetic environment with objective, timely feedback. Through live, virtual and constructive simulation, the Marine Corps will have the means to train jointly, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, and define operational requirements.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		5.775	6.173	4.652	0.000			
RDT&E Articles Qty - Not Applicable								
Combined Arms Command And Control Trainer Upgrade System (CACCTUS) Full prototype Initial Operating Capability (IOC) systems have been installed at 29 Palms, CA and Camp Lejeune, NC for operational testing followed by installation to remaining three sites: Camp Pendleton, Camp Hansen Okinawa, and Kaneohe Bay Hawaii. Continue incremental development of training and simulation capabilities, graphical interfaces, visualization tools, and 3D terrain databases and integrate latest versions of operational Command, Control, Communications, Computers and Intelligence (C4I) systems. Ultimately develop and integrate system interfaces with live and virtual training systems.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	6.475	5.319	0.000			
RDT&E Articles Qty - Not Applicable								
Deployable Virtual Training Environment (DVTE) Funds will be used to develop improved system network infrastructure, graphical User Interfaces, leveraging of Graphical User Interfaces and Command, Control, Communications, Computers and Intelligence (C4I) interfaces from other Services to enable Marines to train using actual operational equipment in the execution of training scenarios. Funding will also be used to enhance semi-autonomous simulation models and the ability to modify existing or emerging real world terrain databases as well as develop and/or leverage system interfaces to enable integration of DVTE with other Constructive and Live training systems.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.727	0.405	0.099	0.000			
RDT&E Articles Qty - Not Applicable								
Multiple Integrated Laser Engagement System (MILES) 2000 is the base technology for Range Instrumentation development that is used in Force-on-Force, Free Play, and Force-On-Targets exercises. MILES 2000 is an integral component of Position Location Instrumentation (PLI) providing individual Marine feedback and engagement adjudication. Funds support the Joint Development Integration Facility (JDIF) integration laboratory, MILES/Deployable Instrumented Training System (DITS) Integration Testing, MILES Surrogate Unmanned Aerial Vehicle (SUAV) development, MILES Enhanced Data Collection System (EDCS) integration, MILES Vehicle Hardware development (incorporating LAV-25A2), MILES Mine Resistant Ambush Protected (MRAP) vehicle kit development, and continuous technology insertion.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		3.728	2.599	2.188	0.000			
RDT&E Articles Qty - Not Applicable								
MAGTF (Marine Air/Ground Task Force) Tactical Warfare Simulation (MTWS) Enhancements MTWS is an advanced tactical combat simulation designed as a decision support system that interacts with the Live and Constructive training environment. It provides interactive, multi-sided, force-on-force, real time modeling and simulation with stand-alone tactical combat scenarios for air, ground, surface and amphibious operations. MTWS has been the combat simulation system used to support I MEF and II MEF Mission Rehearsal Exercises (MRX) prior to Operation Iraqi Freedom deployment. The first release (version 4.0) occurred in FY 08 and yearly upgrade releases are scheduled. For FY 09, enhancements are being made to include Command, Control, Communications, Computers and Intelligence (C4I) capabilities along with federation into the Joint Live Virtual Constructive tool kit.								

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-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems		C2315 Training Devices/Simulators	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	4.052	5.047	1.022	0.000
RDT&E Articles Qty - Not Applicable				
Range Modernization/Transformation (RM/T): RDT&E funds provide for development efforts associated with modernizing live training ranges at major USMC bases and stations. This development enhances after action review with ground truth feedback, realistic representation of opposing forces (OPFOR) and enhanced range and exercise control capabilities. Also, RM/T integrates live, simulated (virtual), and constructive training technologies, thereby enhancing fielded live-fire, force-on-target, and force-on-force training capabilities. Major system components of RM/T include Military Operations in Urban Terrain (MOUT) facilities, inter-active targetry, battlefield effects simulators, individual and vehicle tracking systems, aviation tracking systems, MILES/Tactical Engagement Simulation System (TESS), simulated munitions, integrated simulation, and range control and exercise control information processing and situational awareness displays. Specific development efforts include: 1) Tactical Audio Capture Systems (TACS) development. 2) RM/T Automated Performance Evaluation and Lessons Learned (APELL) effort will fill a capability gap of the USMC Live Training Range Instrumentation Systems (RIS) by extending the ability of the Tactical Video Capture System (TVCS) and the Marine Corps Instrumented Training System (MC-ITS). This development effort will perform scenario generation, automated collection and evaluation of training performance metrics, logging of training performance metrics, and increase training scenario complexity based on measured performance of prior events. 3) Integrate presently disparate ground Position Location Information (PLI) tracking devices (Deployable Instrumented Training System (DITS)/Integrated Global Positioning System Radio System (IGRS)) used in training which feed data to the MC-ITS. 4) Perform software integration efforts of the existing RM/T TVCS and the RM/T TACS with the MC-ITS. This will allow RM/T systems to interoperate with each other, while supporting real-time situation awareness and data collection and analysis in support of performance measurements and evaluation. 5) Performing interoperability experiments between Live Systems (MC-ITS), Constructive (CACCTUS), and Virtual (DVTE). 6) Air Ground Interoperability Experimentation integrating the USMC Aviation Federation developed Tactical Environment Network (TEN) simulation with the MC-ITS.				
(U) Total \$	14.282	20.699	13.280	0
(U) C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010 Y</u>	<u>2010 OCO</u>
PMC BLI #653200 Training Devices, CACCTUS	5.168	4.801	4.147	0.000
PMC BLI #653200 Training Devices, DVTE	6.818	0.000	0.000	0.000
PMC BLI #653200 Training Devices, MILES	9.505	0.682	0.012	0.000
PMC BLI #653200 Training Devices, RM/T	28.447	55.245	8.863	109.795
(U) Related RDT&E: Not Applicable.				
(U) D. ACQUISITION STRATEGY:				
(U) CACCTUS - Competitive Cost plus Fixed Fee contract (CPFF)				
(U) DVTE - Competitively award development contract.				
(U) MILES - Competitively awarded Broad Agency Announcement (BAA) Experimentation/Development contracts.				
(U) MTWS Enhancements - Competitively award Cost Plus Incentive Fee (CPIF) development contract.				
(U) RM/T - Competitively awarded Broad Agency Announcement (BAA) Experimentation/Development contracts.				
(U) Training Support - Competitive Cost plus Fixed Fee contract (CPFF)				
(U) E. MAJOR PERFORMERS:				
Not Applicable for any programs with Training Devices/Simulators, C2315.				

UNCLASSIFIED

Exhibit R-3 Cost Analysis								DATE: May 2009							
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Development				0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2315 Training Devices/Simulators							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Product Dev - MILES	Various	Various	0.257	0.727	Various	0.405	Various	0.099	Various						
Product Dev - RM/T TAC Dev	WR	NSWC Corona, San Diego, CA		0.100	03/08	2.602	06/09								
Product Dev - RM/T OV-1 Dev	T&M	MITRE Corp, Orlando, FL		0.073	06/08										
Product Dev - RM/T APELL	CPFF	SARNOFF Corp, Princeton, NJ		2.041	03/09	2.085	03/09								
Product Dev - RM/T Range Safety T	MIPR	US Army APG		0.274	09/08										
Product Dev - RM/T DITS Dev	FP	SAAB USA, Orlando, FL		1.045	02/09										
Product Dev - RM/T PLI Integ	BAA FP	Competitive BAA		0.519	11/08	0.360	07/09	1.022	02/10						
Product Dev - Training Support	CPFF	Competitive Acquisition													
Subtotal Product Dev			0.257	4.779		5.452		1.121							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
SW Dev - CACCTUS	CPFF	CESI, Orlando, FL	2.575	4.180	01/08	4.689	11/08	4.324	10/09						
SW Dev - CACCTUS	C/IDIQ	NAWC, Orlando, FL		1.221	02/08	0.270	11/08	0.328	10/09						
SW Dev - CACCTUS	Various	Various		0.374		1.214	06/09								
SW Dev - DVTE	C/IDIQ	Competitive				2.394	07/09								
SW Dev - DVTE	FFP	Bohemia Interactivew				1.430	03/09	5.319	06/10						
SW Dev - DVTE	Various	Various				2.651	07/09								
SW Dev - MTWS	SS/T&M	San Diego, CA	2.093	3.426	03/08	2.599	10/08	2.169	03/10						
SW Dev - MTWS	CPIF	DOE, Livermore, CA		0.302	02/08			0.019	03/10						
Subtotal SW Dev			4.668	9.503		15.247		12.159							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Subtotal T&E			0.000	0.000		0.000		0.000							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Subtotal Management			0.000	0.000		0.000		0.000							
Remarks:															
Total Cost			4.925	14.282		20.699		13.280							

Exhibit R-4-4a Project Schedule/Detail						DATE:																																																																	
						May 2009																																																																	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME																																																																		
RDT&E, N /BA 7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supporting Arms Systems			C2315 Training Devices/Simulators																																																																		
Combined Arms Command & Control Training Upgrade System (CACCTUS) PROGRAM SCHEDULE <table><tr><td></td><td>FY 08</td><td>FY 09</td><td>FY 10</td><td></td><td></td><td></td><td></td></tr><tr><td>Software Development Reviews</td><td>◆</td><td>◆</td><td>◆</td><td></td><td></td><td></td><td></td></tr><tr><td>Protype Functionality User Evaluation</td><td>◆</td><td>◆</td><td>◆</td><td></td><td></td><td></td><td></td></tr><tr><td>Version 5.0 Release, Install</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Test & validation at 29 Palms, CA</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Initial Operating Capability (IOC) Combined Arms Sys Trainer FY09</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Version 5.0 delivery, simulation and hardware installation Camp Lejeune, Okinawa, Hawaii, and Camp Pendleton</td><td></td><td>◆</td><td>◆</td><td></td><td></td><td></td><td></td></tr><tr><td>Full Operational Capability (FOC) CACCTUS FY09</td><td></td><td></td><td>◆</td><td></td><td></td><td></td><td></td></tr></table>									FY 08	FY 09	FY 10					Software Development Reviews	◆	◆	◆					Protype Functionality User Evaluation	◆	◆	◆					Version 5.0 Release, Install		◆						Test & validation at 29 Palms, CA		◆						Initial Operating Capability (IOC) Combined Arms Sys Trainer FY09		◆						Version 5.0 delivery, simulation and hardware installation Camp Lejeune, Okinawa, Hawaii, and Camp Pendleton		◆	◆					Full Operational Capability (FOC) CACCTUS FY09			◆				
	FY 08	FY 09	FY 10																																																																				
Software Development Reviews	◆	◆	◆																																																																				
Protype Functionality User Evaluation	◆	◆	◆																																																																				
Version 5.0 Release, Install		◆																																																																					
Test & validation at 29 Palms, CA		◆																																																																					
Initial Operating Capability (IOC) Combined Arms Sys Trainer FY09		◆																																																																					
Version 5.0 delivery, simulation and hardware installation Camp Lejeune, Okinawa, Hawaii, and Camp Pendleton		◆	◆																																																																				
Full Operational Capability (FOC) CACCTUS FY09			◆																																																																				
Program Funding Summary																																																																							
		FY 2008	FY 2009	FY 2010																																																																			
(APPN, BLI #, NOMEN)																																																																							
(U) RDT&E,N (CACCTUS) PE 206623M C2315		5.775	6.173	4.652	0																																																																		
(U) PMC BLI 653200 Training Dev/Sim (CACCTUS)		5.168	4.801	4.147	0																																																																		
CACCTUS SCHEDULE DETAIL																																																																							
Software Development Reviews		1-4Q	1-4Q	1-4Q																																																																			
Protype Functionality User Evaluation		2Q/4Q	2Q/4Q	2Q/4Q																																																																			
Version 5.0 29 Palms		4Q	1Q																																																																				
CACCTUS IOC			1Q																																																																				
Version 5.0 Camp Lejeune			2Q																																																																				
Version 5.0 Camp Pendleton			3Q																																																																				
Version 5.0 Camp Hansen Okinawa			4Q																																																																				
Version 5.0 MCAS Kaneohe Bay Hawaii			4Q																																																																				
CACCTUS FOC			4Q																																																																				

Exhibit R-4-4a Project Schedule/Detail						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&E, N /BA 7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2315 Training Devices/Simulators		

Deployable Virtual Training Environment (DVTE) PROGRAM SCHEDULE							
	FY 08	FY 09	FY 10				
CAN V3.0 (2 YR)		◇					
VBS2 (2 YR)		◇	◇				

Program Funding Summary	FY 2008	FY 2009	FY 2010	
(APPN, BLI #, NOMEN)				
(U) RDT&E,N (DVTE) PE 206623M C2315		6.475	5.319	0.000
(U) PMC BLI 653200 Training Dev/Sim (DVTE)	6.818			

DVTE SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010				
CAN V3.0 (2 YR) Contract		4Q					
VBS2 (2 YR) Contract		3Q	3Q				

Exhibit R-4-4a Project Schedule/Detail						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&E, N /BA 7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2315 Training Devices/Simulators		

Multiple Integrated Laser Engagement System (MILES) PROGRAM SCHEDULE								
	FY 08	FY 09	FY 10					
MILES JDIF Lab Spt	◆							
MILES/DITS Testing	◆							
MILES SUAV Development	◆							
MILES EDCS Integration		◆						
MILES Vehicle Upgrades (LAV-25A2)		◇						
MILES MRAP System Dev			◇					
MILES Tech Insertion								
Test and Evaluation		◇	◇					

Program Funding Summary	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N (MILES) PE 206623M C2315	0.727	0.405	0.099
(U) PMC BLI 653200 Training Dev/Sim (MILES)	9.505	0.682	0.012

MILES SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
MILES JDIF Lab Spt	2Q							
MILES/DITS Testing	3Q							
MILES SUAV Development	3Q							
MILES EDCS Integration		1Q						
MILES Vehicle Upgrades (LAV/M1A2)		3Q						
MILES MRAP System Dev			2Q					
MILES Tech Insertion								
Test and Evaluation		4Q	2Q					

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C2315 Training Devices/Simulators

Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) PROGRAM SCHEDULE							
	FY 08	FY 09	FY 10				
Contract Awards	◆	◆	◇				
MTWS IPT/CCB	◆	◆	◇				
Version 4.0 Operational Testing	◆						
Version 4.0 SW Release	◆						
Version 4.1 Operational Testing		◇					
Version 4.1 SW Release		◇					
Version 4.2 Operational Testing			◇				
Version 4.2 SW Release			◇				
Program Support							
Hardware Refresh	◆	◇					

Program Funding Summary	FY 2008	FY 2009	FY 2010
(APPN, BLI #, NOMEN)			
(U) RDT&E,N (MTWS) PE 206623M C2315	3.728	2.599	2.188

MTWS SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010				
Contract Award	2Q	2Q	2Q				
MTWS IPT/CCB	1Q & 4Q	1Q & 4Q	1Q & 4Q				
Version 4.0 Operational Testing	2Q						
Version 4.0 SW Release	4Q						
Version 4.1 Operational Testing		4Q					
Version 4.1 SW Release		4Q					
Version 4.2 Operational Testing			2Q				
Version 4.2 SW Release			4Q				
Program Support	1-4Q	1-4Q	1-4Q				
Hardware Refresh	4Q	4Q					

Exhibit R-4-4a Project Schedule/Detail						DATE:																																																																																												
						May 2009																																																																																												
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME																																																																																													
RDT&E, N /BA 7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supporting Arms Systems			C2315 Training Devices/Simulators																																																																																													
Range Modernization/Transformation (RM/T) PROGRAM SCHEDULE <table><tr><td></td><td>FY 08</td><td>FY 09</td><td>FY 10</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T TACS Development</td><td>◆</td><td>◆ ◇</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T OV-1 Development</td><td>◆</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T APELL Effort</td><td></td><td>◇</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T PLI Integration</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T Range Safety Development Test</td><td>◆</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T DITS Development Suite</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T DITS IA Engineering</td><td></td><td>◆</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T PGS Vehicle Upgrades (LAV-25A2)</td><td></td><td></td><td>◇</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>RM/T MC-ITS Development</td><td></td><td></td><td></td><td>◇</td><td></td><td></td><td></td><td></td></tr></table>										FY 08	FY 09	FY 10						RM/T TACS Development	◆	◆ ◇							RM/T OV-1 Development	◆								RM/T APELL Effort		◇							RM/T PLI Integration		◆							RM/T Range Safety Development Test	◆								RM/T DITS Development Suite		◆							RM/T DITS IA Engineering		◆							RM/T PGS Vehicle Upgrades (LAV-25A2)			◇						RM/T MC-ITS Development				◇				
	FY 08	FY 09	FY 10																																																																																															
RM/T TACS Development	◆	◆ ◇																																																																																																
RM/T OV-1 Development	◆																																																																																																	
RM/T APELL Effort		◇																																																																																																
RM/T PLI Integration		◆																																																																																																
RM/T Range Safety Development Test	◆																																																																																																	
RM/T DITS Development Suite		◆																																																																																																
RM/T DITS IA Engineering		◆																																																																																																
RM/T PGS Vehicle Upgrades (LAV-25A2)			◇																																																																																															
RM/T MC-ITS Development				◇																																																																																														
Program Funding Summary		FY 2008	FY 2009	FY 2010																																																																																														
(APPN, BLI #, NOMEN)																																																																																																		
(U) RDT&E,N (RM/T) PE 206623M C2315		4.052	5.047	1.022																																																																																														
(U) PMC BLI 653200 Training Dev/Sim (RM/T)		28.447	55.245	118.658																																																																																														
RM/T SCHEDULE DETAIL		FY 2008	FY 2009	FY 2010																																																																																														
RM/T TACS Development		2Q	2Q/3Q																																																																																															
RM/T OV-1 Development		3Q																																																																																																
RM/T APELL Effort			2Q																																																																																															
RM/T PLI Integration			1Q																																																																																															
RM/T Range Safety Development Test		4Q																																																																																																
RM/T DITS Development Suite			2Q																																																																																															
RM/T DITS IA Engineering			2Q																																																																																															
RM/T PGS Vehicle Upgrades (LAV-25A2)			3Q																																																																																															
RM/T MC-ITS Development				2Q																																																																																														

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-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems			C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
Project Cost	10.051	14.817	9.864	0.000	9.864			
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Family of Combat Equipment Support and Services provides research, development, test and evaluation on low cost items with emphasis on non-developmental/commercially available items. Much of the RDT&E is conducted in coordination/concert with other services and joint organizations, and in consideration of RDT&E efforts being pursued by the other services. Items approved for procurement will transition into Procurement Marine Corps and Operation and Maintenance Marine Corps lines for Individual Combat Equipment, Medical Equipment, and Shelters. The focus is to provide state of the art combat equipment (e.g. lightweight helmet, sleeping bags, load bearing systems, etc.), medical equipment (e.g. Authorized Medical Allowance (AMAL)/Authorized Dental Allowance (ADAL), Enroute Care, Mobile Medical Monitors, etc.), and family of shelters (softwall, different frames and fabrics, etc.). The benefit will be reduced logistics, less weight, improved combat effectiveness, better echelon I and II care for Marines, improved individual and unit protection, tactical mobility, etc. The employment of state-of-the art equipment will ensure Marines are equipped with the best items that technology can offer.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO				
Accomplishment/Effort Subtotal Cost	5.830	7.000	4.279	0.000				
RDT&E Articles Qty								
Family of Ballistic Protection Systems: Exploration of new commercial technologies that can be inserted into current body armor to reduce weight, increase survivability, lethality and mobility. Both torso and head/neck ballistic studies will be conducted to assess blunt trauma/shock forces on the body and how ballistic materials/designs can afford the most protection while reducing weight. Modeling and simulation initiatives will baseline current equipment and enable configuration/compatibility management of new equipment.								
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO				
Accomplishment/Effort Subtotal Cost	0.626	0.600	0.463	0.000				
RDT&E Articles Qty								
Clothing and Flame Resistant Organizational Gear: Pursue designs, prototyping, user surveys, textile and physical properties testing and the full range of clothing design in response to new uniform initiatives.								
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO				
Accomplishment/Effort Subtotal Cost	1.326	2.570	0.923	0.000				
RDT&E Articles Qty								
Family of Mountain Cold Weather Clothing & Equipment (FMCWCE): FMCWCE will provide a capability set of clothing and equipment to facilitate Marine Air-Ground Task Force (MAGTF) operations in mountainous and cold weather environments. The intent is to reduce the individual load (weight/volume) of the Ground Combat Element (GCE), particularly dismounted infantry while maintaining or improving system performance. Mobility, survivability and sustainability requirements for the Command Element (CE), Combat Service Support Element (CSSE), and the Air Combat Element (ACE) will also be met. This program will substantially improve current inventory items and add new capabilities such as steep earth and alpine ice equipment for which we train Marines yet have no assets to perform these missions within the operating forces. Rapid technological advances in the outdoor commercial market make it possible to continuously update the capability provided by FMCWCE.								
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO				
Accomplishment/Effort Subtotal Cost	0.436	0.505	0.342	0.000				
RDT&E Articles Qty								
Family of Improved Load Bearing Equipment: This program supports the Marine Corps requirements for a replacement load bearing system and individual water purifier and supports continual system improvement throughout the life-cycle of the equipment.								

EXHIBIT R-2a, RDT&E Project Justification				DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Development		0206623M Marine Corps Ground Combat/Supporting Arms Systems		C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES	
COST (\$ in Millions)		FY08	FY09	FY10	FY10 OCO
Accomplishment/Effort Subtotal Cost		0.104	0.117	0.093	0.000
RDT&E Articles Qty					
Family of Combat Support Equipment: The purpose of the Family of Combat Support Equipment is to enhance or improve unit operational capabilities and enhance unit morale. In addition, some items such as the field tarp and poncho will greatly enhance survivability, mobility and provide significantly improved field equipment to Marines.					
COST (\$ in Millions)		FY08	FY09	FY10	FY10 OCO
Accomplishment/Effort Subtotal Cost		0.236	0.339	0.482	0.000
RDT&E Articles Qty					
Family of Combat Field Feeding Systems: Improvements on current technology for heating individual rations is being explored to test individual ration heater concepts and equipment. Although some progress has been made in recent years to improve field feeding equipment, most current field messing equipment consists of manpower and maintenance intensive M59 ranges utilizing M2 burners setup within tents. The current Tray Ration Heater System has a large footprint, lacks a quick displacement capability, includes unsafe and hazardous components (specifically the M2 burners), and does not conform to the single fuel concept. Also, this current system is not compatible with tenets of Operational Maneuver from the Sea (OMFTS) and does not facilitate maneuverable warfare operations. Current cookware sanitizing equipment consists of 30 gallon containers used in consonance with immersion water heaters, fueled by gasoline (MOGAS).					
COST (\$ in Millions)		FY08	FY09	FY10	FY10 OCO
Accomplishment/Effort Subtotal Cost		1.348	3.538	3.150	0.000
RDT&E Articles Qty					
Family of Field Medical Equipment: Development of the Vaccine and Reagent Refrigeration System (VARRS) to replace all refrigeration except the HEMACOL blood refrigerator in the AMAL inventory. The VARRS is rugged, well insulated, and will operate on battery power. The Rugged design will improve survivability over the current refrigeration systems in austere environments. Development of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items to evaluate their functionality to improve the quality of warfighter's healthcare. Testing of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items for the Enroute Care System to evaluate functionality for patient transportation post resuscitative surgery in forward echelons and for the replacement of the obsolete Narkomed ruggedized anesthesia machine. Testing of other medical equipment items to evaluate their functionality improving the quality of warfighter healthcare and to reduce the logistics footprint of USMC medical equipment. Planned completion of testing and initiation of technology insertion.					
COST (\$ in Millions)		FY08	FY09	FY10	FY10 OCO
Accomplishment/Effort Subtotal Cost		0.145	0.148	0.132	0.000
RDT&E Articles Qty					
Family of Shelters and Shelter Equipment: Command and Control Systems have out grown the current Modular Command Post Shelter in size and performance. Changing operational doctrine, logistic support systems and advances in technology require development of an advanced lightweight rapid deploying tactical shelter with a minimum of 420 sq. ft. Design and engineering to increase capability, reduce weight, cost and cube of soft wall shelters. Explore and test new technologies in coordination with the US Army for insertion into the shelter.					
(U) Total \$		10.051	14.817	9.864	0.000

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-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES
(U) C. OTHER PROGRAM FUNDING SUMMARY:		
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) PMC Line (BLI#652200) Field Med Equip &	26.602	25.794
(U) PMC Line (BLI#661300) Combat Field Feeding System	18.929	4.185
		3.394
		2.159
(U) Related RDT&E: Not Applicable.		
(U) D. ACQUISITION STRATEGY:		
Family of Ballistic Protection Systems, Family of Mountain Cold Weather Clothing and Equipment, Family of Improved Load Bearing Equipment, Family of Combat Support Equipment, Clothing & Flame Resistant Organizational Gear, and Combat Field Feeding Systems Items utilize various acquisition strategies. These programs leverage heavily on current developments and technology in commercial industry. As a result, the government's R&D phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate, the Naval Research Laboratory or the U.S. Army Natick Research, Development & Engineering Center via Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts. ID/IQ contracts are used to decrease the government risk, allow maximum contract flexibility and capitalize on the savings realized by utilizing Economic Order Quantities. Shelters: The Shelter acquisition strategy is to modify non-developmental Items (NDI) to further meet the requirements of the Marine Corps, to support development of multi-service items through inter-service agreements and to adopt Commercial-Off-the-Shelf (COTS)/NDI Marine Corps Specific items. Family of Field Medical Equipment: These programs leverage heavily on current development and technology in the commercial medical industry. The field medical acquisition strategy is to modify non-developmental items (NDI) and adopt Commercial-Off-The-Shelf (COTS) items.		
(U) E. MAJOR PERFORMERS:		
Family of Ballistic Protection Systems, Family of Mountain Cold Weather Clothing and Equipment, Family of Improved Load Bearing Equipment, Clothing & Flame Resistant Organizational Gear, and Family of Combat Support Equipment: U.S. Army Natick Research, Development and Engineering Center, Natick, Mass., and the Naval Research Laboratory, Washington DC. Shelters: TBD based on current technologies. Family of Field Medical Equipment: TBD based on current technologies.		
(U) SCHEDULE PROFILE: Not Applicable.		

Exhibit R-3 Cost Analysis						DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME									
RDT&E, N /BA 7 Operational Sys Development			0206623M Marine Corps Ground Combat/			C2503 Initial Issue - Family of Combat Equip Support & Services									
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO					
Family of Ballistic Protection Systems	MIPR	USASSCOM Natick, MA	1.718	0.588	12/07	1.105	12/08	0.830	03/10						
Family of Ballistic Protection Systems	MIPR	USASSCOM Natick, MA				2.907	06/09								
Family of Ballistic Protection Systems	WR	NRL, Washington DC	6.559	3.028	03/08	1.792	06/09	1.918	03/10						
Family of Ballistic Protection Systems	WR	ONR, Arlington VA	0.156					0.090	03/10						
Family of Ballistic Protection Systems	MIPR	AFIP, Washington DC		0.135	09/08										
Family of Ballistic Protection Systems	MIPR	USA, Picatinny, NJ		0.501	09/08										
Family of Ballistic Protection Systems	MIPR	USA, Fort Detrick, MD		0.524	09/08										
Family of Ballistic Protection Systems	MIPR	USA, Fort Rucker, AL		0.126	09/08										
Clothing & FR Organizational Gear	MIPR	USASSCOM Natick, MA	0.937	0.542	06/08	0.487	12/08	0.412	03/10						
Mountain Cold Weather Equipment	MIPR	USASSCOM Natick, MA	1.718	0.419	03/08	1.693	03/09	0.286	12/09						
Improved Load Bearing Equipment	MIPR	USASSCOM Natick, MA	0.935	0.436	06/08	0.505	07/09	0.342	03/10						
Combat Support Equipment	MIPR	USASSCOM Natick, MA				0.090	03/09	0.070	03/10						
Combat Field Feeding Systems	MIPR	USASSCOM Natick, MA	0.469	0.236	12/07	0.339	03/09	0.294	03/10						
Family of Field Medical	MIPR	USAMRMC, FT DETRICK,MD				0.104	12/08	0.106	12/09						
Family of Field Medical	MIPR	USAMRAA, FT DETRICK,MD				0.141	12/08	0.159	12/09						
Family of Field Medical	WR	NMRC, MD				0.470	12/08	0.530	12/09						
Family of Field Medical	MIPR	AFMESA, FT DETRICK,MD				1.636	03/09	1.373	03/10						
Family of Field Medical	FFP	Various (Test Articles)	3.123	1.226	03/08										
Subtotal Product Dev			15.615	7.761		11.269		6.410		0.000					
Remarks:															
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO					
Family of Field Medical	WR	NHRC, SAN DIEGO, CA	0.664	0.099	12/07	0.352	12/08	0.360	12/09						
Subtotal Support			0.664	0.099		0.352		0.360		0.000					
Remarks:															
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO					
Family of Ballistic Protection Systems	MIPR	USASSCOM Natick, MA	2.795	0.637	03/08	1.021	03/09	0.931	03/10						
Family of Ballistic Protection Systems	RCP	MCSC, Quantico VA	1.500	0.291	03/08	0.175	12/08	0.510	03/10						
Mountain Cold Weather Equipment	MIPR	USASSCOM Natick, MA	1.364	0.365	03/08	0.500	03/09	0.587	03/10						
Mountain Cold Weather Equipment	PR	MCSC, Quantico VA	0.341	0.202	12/07			0.050	03/10						
Combat Support Equipment	MIPR	USASSCOM Natick, MA	0.273	0.004	06/08	0.010	12/08								
Combat Support Equipment	MILSTRIP	DLA/DSCP China Lake CA	0.068	0.012	12/07										
Family of Shelters & Shelter Equipment	WR	USA NSRDEC, NATICK, MA	0.477	0.145	03/08	0.148	03/09	0.132	03/10						
Family of Field Medical	MIPR	USAMRMC, FT DETRICK,MD				0.081	06/09	0.060	06/10						
Family of Field Medical	MIPR	USAMRAA, FT DETRICK,MD				0.724	06/09	0.532	06/10						
Subtotal T&E			6.818	1.656		2.659		2.802		0.000					
Remarks:															

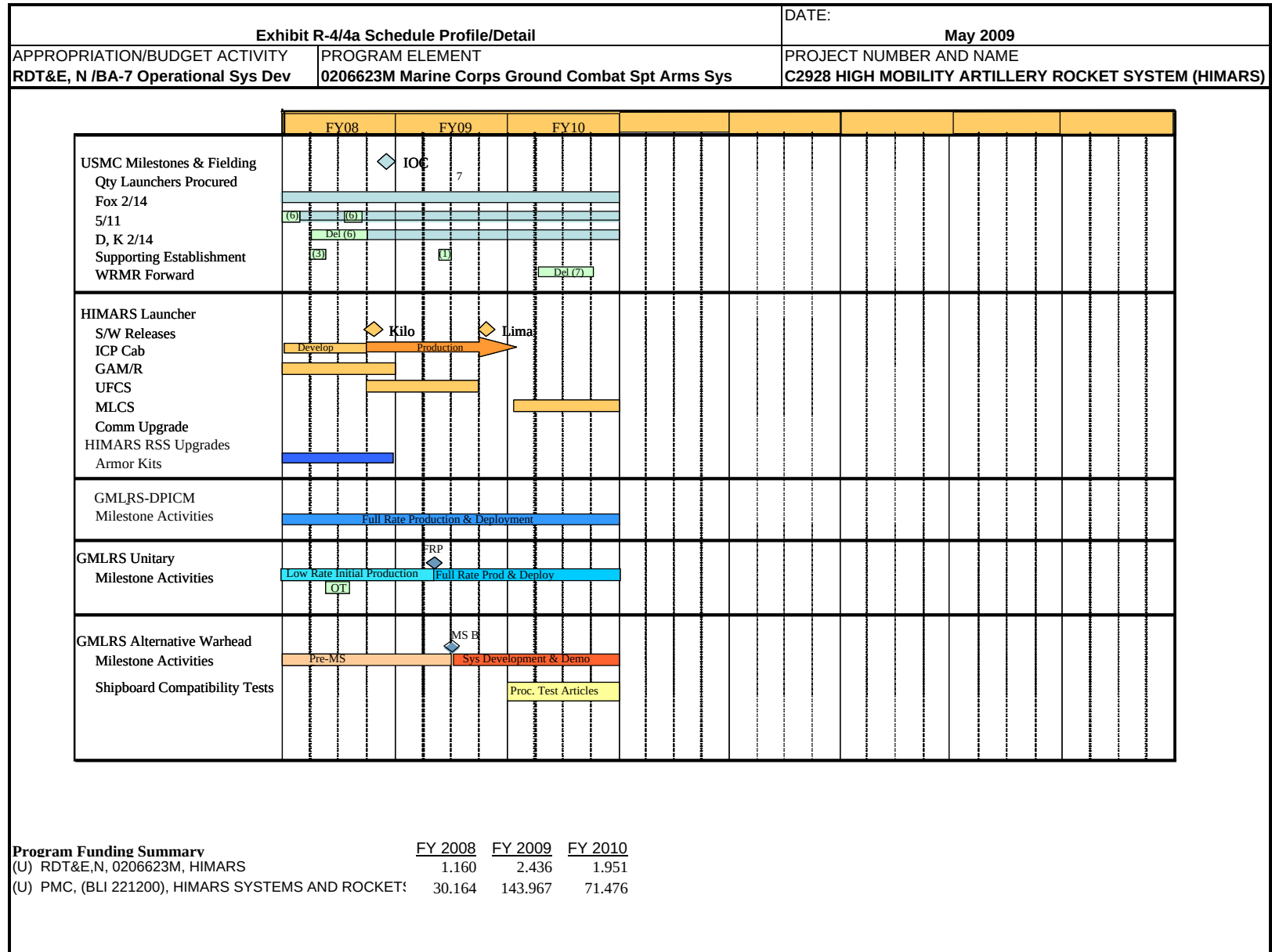
UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE: May 2009							
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Development				0206623M Marine Corps Ground Combat/			C2503 Initial Issue - Family of Combat Equip Support & Services							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO				
Clothing & FR Organizational Gear	MIPR	USASSCOM Natick, MA	0.631	0.084	06/08	0.113	06/09	0.051	03/10					
Mountain Cold Weather Equipment	RCP	MCSC, Quantico VA	0.633	0.340	12/07	0.377	06/09							
Combat Support Equipment	RCP	MCSC, Quantico VA	0.113	0.088	09/08	0.017	03/09	0.023	03/10					
Combat Field Feeding Systems	RCP	MCSC, Quantico VA	0.097					0.188	03/10					
Family of Field Medical Travel	RCP	MCSC, Quantico VA	0.146	0.023	VAR	0.030	VAR	0.030	VAR					
Subtotal Management			1.620	0.535		0.537		0.292		0.000				
Remarks:														
Total Cost			24.717	10.051		14.817		9.864		0.000				

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-7 Operational Sys Development		0206623M Marine Corps Ground Combat Support Arms Systems		C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL		
Project Cost	1.160	2.436	1.951	0.000	1.951		
RDT&E Articles Qty							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
HIMARS is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System Family of Munitions (MFOM). The system includes one launcher, two Re-Supply Systems, and the MFOM. HIMARS will provide the Fleet Marine Force with 24 hour ground-based, responsive General Support/General Support Reinforcing (GS/GSR) indirect fires which accurately engage targets at long range (60+km) with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore to include irregular warfare and distributed operations. HIMARS is a significant improvement over currently fielded ground fire support systems. During a 24 hour period, the system will be expected to conduct multiple moves and multiple fire missions. HIMARS will satisfy the Marine Corps requirement for an indirect fire system that is responsive, maneuverable, and is capable of engaging targets at long range.							
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:							
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO			
Accomplishment/Effort Subtotal Cost	0.594	1.980	1.401	0.000			
RDT&E Articles Qty							
Primary and Ancillary Hardware Development and Systems Engineering Support, includes Navy, Marine Corps, Army and contractor R&D efforts.							
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO			
Accomplishment/Effort Subtotal Cost	0.413	0.303	0.397	0.000			
RDT&E Articles Qty							
Support Test and Evaluation Program with Army. Support Test and Evaluation Program for Marine Corps Principle End Items.							
COST (\$ in Millions)	FY08	FY09	FY10	FY10 OCO			
Accomplishment/Effort Subtotal Cost	0.153	0.153	0.153	0.000			
RDT&E Articles Qty							
Program Management at Quantico, USMC Liaison Office at Army Program, USMC Test Unit at Ft Sill, and contractor support.							
(U) Total \$	1.160	2.436	1.951	0.000			
(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>FY10 OCO</u>			
(U) PMC (BLI 221200) HIMARS SYSTEMS AND ROCKETS	30.164	143.967	71.476	0.000			
(U) Related RDT&E: Not Applicable.							
(U) D. ACQUISITION STRATEGY:							
USMC HIMARS is procuring the Army rocket launcher, the current / future Multiple Launch Rocket System Family of Munitions (MFOM) and developing an Medium Tactical Vehicle Replacement (MTVR)-based Resupply System (truck(s) with associated trailer(s)). The Marine Corps launcher and ammo requirements closely match U.S. Army requirements. The US Army HIMARS program received increased funding so that it is now an Acquisition Category ACAT IC level program. Marine Corps Resupply System requirements are unique. Accordingly, the Marine Corps is an integrator and must ensure the required warfighting capability is fielded to the Marine Corps operating forces. The USMC has aligned funds to reflect an emphasis on not only hardware development, but also the integration of these principle end items while providing associated evaluation and oversight. Additionally, the Marine Corps program is establishing the training and support methodologies that will result in associated skill sets required within the Marine Corps. The Marine Corps strategy is incorporating Evolutionary Acquisition and capability upgrades to both the systems and rocket munitions. These improvements parallel the US Army's acquisition strategy.							
(U) E. MAJOR PERFORMERS:							
FY-09 Lockheed Martin Missile, Dallas, TX. Modifications to Launcher, GMLRS Development							
FY-09 Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing							

UNCLASSIFIED

Exhibit R-3 Cost Analysis						DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Development			0206623M Marine Corps Ground Combat Support Arms Systems			C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hardware Dev	SS/CPAF	Lockheed Martin, Dallas	12.820	0.059	12/07	1.661	12/08	1.207	11/09					
Ancillary Hardware Dev	MIPR	RTTC, Redstone, AL	1.064	0.225	12/07	0.120	12/08	0.120	12/09					
Systems Engineering	WR	NSWC-Dahlgren, VA	3.061	0.195	10/07	0.199	10/08	0.074	12/09					
Systems Engineering	WR	NSWC-Earle, NJ	0.896											
Systems Engineering	CPAF	Lockheed Martin, Dallas	0.605	0.115	12/07									
Subtotal Product Dev			18.446	0.594		1.980		1.401						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Integ Logistics Support	WR	NSWC-IHD, Earle NJ	0.140											
Subtotal Support			0.140	0.000		0.000		0.000						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Dev Test & Eval	WR	NSWC-Dahlgren, VA	2.344	0.213	10/07	0.180	10/08	0.274	11/09					
Dev Test & Eval	WR	Redstone Test Ctr, Huntsville, AL	1.193	0.200	12/07	0.123	12/08	0.123	12/09					
Dev Test & Eval	WR	NSWC-Carderock, MD	0.094											
Dev Test & Eval	MIPR	DAC, McAlester, OK	0.145											
Operational Test & Eval	WR	MCOTEA, Quantico, VA	1.074											
Subtotal T&E			4.850	0.413		0.303		0.397						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Program Mngmnt	WR	MCSC, Quantico, VA	1.996	0.075	10/07	0.075	10/08	0.075	10/09					
Program Mngmnt	FFP	CEOSS, Quantico VA	4.923	0.078	10/07	0.078	10/08	0.078	10/09					
Subtotal Management			6.919	0.153		0.153		0.153						
Remarks:														
Total Cost			30.355	1.160		2.436		1.951						



UNCLASSIFIED

[illegible]

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-7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supt Arms			C3098 Fire Support Systems				
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total			
Project Cost		5.923	8.856	8.730	0.000	8.730			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
This project develops joint and Marine Corps unique improvements to artillery technology, USMC unique Amphibious Armor Systems (AAS), and international weapons development. Two new initiatives have been approved, Common Laser Range Finder (CLRF) and MAGTF Meteorological Information Manager (MIMM). The CLRF Pre-Planned Product Improvement (P3I) is a Research and Development initiative to develop a lightweight, man-portable, True North Azimuth Determination System (TNADS). MIMM sustains the capability of Marine artillerymen to obtain accurate meteorological (Met) information through the development of 30 MMIM systems.									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: The research and development efforts for the two new initiatives, CLRF and MIMM, along with the continuing efforts for EFSS are detailed in the R4/R-4a.									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost		2.662	5.388	5.031	0.000				
RDT&E Articles Qty		Not Applicable	Not Applicable	Not Applicable	Not Applicable				
Expeditionary Fire Support System (EFSS): Program entered Milestone B in November 2004 and the award of a contract with cost plus award fee and firm fixed price line items. EFSS entered the System Development and Demonstration (SD&D) with a single vendor - General Dynamics Ordnance and Tactical Systems. Milestone C decision made in June 2005. Functional Configuration Audit began May 2006. LRIP decision made June 2006. Operation Testing (OT) completed on July 2007. Limited Full Rate Production Decision made in September 2007. Follow On Test and Evaluation (FOT&E) was completed in March 2008. Full Rate Production (FRP) decision made in May 2008. EFSS supports irregular warfare and distributed operations.									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost		0.181	0.299	1.364	0.000				
RDT&E Articles Qty		Not Applicable	Not Applicable	Not Applicable	Not Applicable				
Family of Artillery Munitions (FAM): Support R&D of Advanced Cannon Artillery (ACAAP) and Excalibur to include approved Insensitive Munitions (IM) and Weapons Systems Explosives Safety Review Board (WSESRB) testing, program support, and travel. Actively monitor U.S. Army artillery ammunition development programs in order to leverage off of and influence army developmental efforts. Beginning in FY10 funding for C2906 - Insensitive Munitions, will be incorporated into the FAM line. Two programs are included in the IM funding line, Insensitive Munitions 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. 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.									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost		2.749	2.159	0.858	0.000				
RDT&E Articles Qty		Not Applicable	Not Applicable	Not Applicable	Not Applicable				
Fire Support Mods (FSM): (Formerly known as Sustainment / Readiness) Joint participation in artillery and fire support improvement projects for replacement capabilities. Projects include the Digital Aiming Circle, the M198 Howitzer, LW 155mm Howitzer and more accurate gun laying technology .									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost		0.331	1.010	0.000	0.000				
RDT&E Articles Qty		Not Applicable	Not Applicable	Not Applicable	Not Applicable				
Meteorological Measuring Sets (MMS): The RDT&E dollars listed above will be utilized to adapt the Air Force Weather Agency Predictive Weather Model as required input to howitzer fire control. It will also be used to develop meteorological sensors conducive to battlefield operations.									
COST (\$in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	1.477	0.000				
RDT&E Articles Qty		Not Applicable	Not Applicable	Not Applicable	Not Applicable				
Modeled Meteorological Information Manager (MMIM): (Replacing MMS in FY10) The RDT&E dollars listed above will be utilized to adapt the Air Force Weather Agency Predictive Weather Model as required input to howitzer fire control. It will also be used to develop meteorological sensors conducive to battlefield operations.									
(U) Total \$		5.923	8.856	8.730	0.000				

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supt Arms			PROJECT NUMBER AND NAME C3098 Fire Support Systems																															
(U) C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;"><u>FY 2008</u></th> <th style="text-align: right;"><u>FY 2009</u></th> <th style="text-align: right;"><u>FY 2010</u></th> <th style="text-align: right;"><u>FY 2010 OCO</u></th> <th style="text-align: right;"><u>FY 2010 Total</u></th> </tr> </thead> <tbody> <tr> <td>PMC BLI# 473300 Fire Supp Mod (Sustainment)</td> <td style="text-align: right;">13.498</td> <td style="text-align: right;">2.646</td> <td style="text-align: right;">1.894</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">1.894</td> </tr> <tr> <td>PMC BLI# 473300 MMIM</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.686</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.686</td> </tr> <tr> <td>PMC BLI# 206400 Expeditionary Fire Support Sys</td> <td style="text-align: right;">3.869</td> <td style="text-align: right;">22.037</td> <td style="text-align: right;">19.591</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">19.591</td> </tr> <tr> <td>PMC BLI# 700000 Prime Vendor Spares - (EFSS)</td> <td style="text-align: right;">0.664</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> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> (U) Related RDT&E: (U) D. ACQUISITION STRATEGY: These programs range from off-the-shelf modifications to developmental items. Fire power enhancement used selected upgrades from Army developmental programs to create a system that more readily meets Marine Corps requirements. EFSS has used an evolutionary acquisition approach fielding a near term capability in FY07 while leveraging emerging technologies to mature the technology by FY09 and beyond. (U) E. MAJOR PERFORMERS:						<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>	<u>FY 2010 Total</u>	PMC BLI# 473300 Fire Supp Mod (Sustainment)	13.498	2.646	1.894	0.000	1.894	PMC BLI# 473300 MMIM	0.000	0.000	0.686	0.000	0.686	PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591	0.000	19.591	PMC BLI# 700000 Prime Vendor Spares - (EFSS)	0.664	0.000	0.000	0.000	0.000
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2010 OCO</u>	<u>FY 2010 Total</u>																														
PMC BLI# 473300 Fire Supp Mod (Sustainment)	13.498	2.646	1.894	0.000	1.894																														
PMC BLI# 473300 MMIM	0.000	0.000	0.686	0.000	0.686																														
PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591	0.000	19.591																														
PMC BLI# 700000 Prime Vendor Spares - (EFSS)	0.664	0.000	0.000	0.000	0.000																														

Exhibit R-3 Cost Analysis						DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems			C3098 Fire Support Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 010 Cost	FY 010 Award Date					
PRODUCT DEVELOPMENT		SEE BELOW												
EFSS	RCP	GDOTS, St. Petersburg, F	16.489	1.160	1Q08	2.502	1Q09	2.512	1Q10					
EFSS	VAR	VARIOUS	1.630	0.378	2Q08	0.703	2Q09	0.169	2Q10					
Fire Support Mods	VAR	VARIOUS	2.925	1.500	TBD	1.279	TBD	0.524	TBD					
MMS	WR	NAVMAR, San Deigo, CA	1.000	0.331	1Q08	0.900	TBD							
CLRF	VAR	VARIOUS												
MMIM	VAR	VARIOUS						1.387	1Q10					
Subtotal Product Dev			22.044	3.369		5.384		4.592						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 010 Cost	FY 010 Award Date					
PROGRAM SUPPORT		SEE BELOW												
EFSS	RCP	CTQ, Quantico, Va	3.258	0.305	1Q08	0.500	1Q09	0.500	1Q10					
EFSS	WR	NSWCDD, Dahlgren, VA	2.164	0.100	1Q08	0.300	1Q09	0.400	1Q10					
Fam Artillery Munitions	WR/RCP	BAEST, Stafford, VA	0.618	0.181	1Q08	0.299	TBD	1.364	TBD					
Fire Support Mods	VAR	VARIOUS	2.084	1.249	TBD	0.880	TBD	0.334	TBD					
Subtotal Support			8.124	1.835		1.979		2.598						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 010 Cost	FY 010 Award Date					
T&E		SEE BELOW												
EFSS	WR	NSWCDD, Dahlgren, VA	1.930	0.119	2Q08	0.313	2Q09	0.400	2Q10					
EFSS	WR	MCPD, Fallbrook, CA	1.913	0.200	2Q08	0.500	2Q09	0.450	2Q10					
MMS	WR	MCOTEA, MCTSSA				0.110	TBD							
MMIM	WR	MCOTEA, MCTSSA						0.090	3Q10					
Subtotal T&E			3.843	0.319		0.923		0.940						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 010 Cost	FY 010 Award Date					
MANAGEMENT		SEE BELOW												
EFSS	RCP	GDOTS, St. Petersburg, F	4.423	0.400	1Q08	0.570	1Q09	0.600	1Q10					
CLRF	VAR	VARIOUS												
Subtotal Management			4.423	0.400		0.570		0.600						
Remarks:														
Total Cost			38.434	5.923		8.856		8.730						

Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C3098 Fire Support Systems

Expeditionary Fire Support System (EFSS)

<u>M I L E S T O N E S A N D P H A S E S</u>	FY 08	FY09	FY10
EFSS	IOC		
CONTRACT AWARDS	FRP		
TEST			
DEVELOPMENT OPERATIONAL	DOT		
PRODUCTION			
	FULL RATE		

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N (C3098) EFSS	2.662	5.388	5.031
PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591
PMC BLI# 700000 Prime Vendor Spares (EFSS)	0.664	0.000	0.000

EFSS SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010
Initial Operational Capability	3Q		
Full Rate Production	3Q		

Exhibit R-4/4a Schedule Profile/Detail		DATE:
APPROPRIATION/BUDGET ACTIVITY		May 2009
RDTE&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME C3098 Fire Support Systems

Modeled Meterological Information Manager (MMIM)

	FY08	FY09	FY10
USER EVALUATIONS			
MMIM AAP DECISION			
SYSTEM INTEGRATION			
SYSTEM DEMO			
LRIP			

Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N (C3098) MMIM

PMC BLI# 473300 Modeled Meterological Info. Manager

FY 2008 FY 2009 FY 2010

0.000 0.000 1.477

0.000 0.000 0.686

MMIM SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010
User Evaluations		3Q	
AAP Decision		4Q	
System Integration			1Q -- 2Q
System Demo			2Q -- 3Q
LRIP			3Q --

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-7 Operational Systems Development		0206623M Marine Corps Ground Combat Supporting Arms Systems				C4002 Family of Raid/Reconnaissance Equipment			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL			
Project Cost		2.945	0.961	4.044	0.000	4.044			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
(U) Family of Raid/Reconnaissance Equipment (FRRE) - project supports multiple airborne/parachuting and specialized reconnaissance related programs focusing on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces. This includes improving airborne capability equipment and items for direct action missions that use specialized raid equipment.									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO	
Accomplishment/Effort Subtotal Cost		2.423		0.961		1.078		0.000	
RDT&E Articles Qty		20		10		VAR			
Family of Raid/Reconnaissance Equipment (FRRE): FY08 includes OCO received for Joint Precision Airdrop System (JPADS) for development of evaluation/test plans and performance testing of Ultra Light Weight Airdrop System (ULW PADS) prototypes; an increment of JPADS family of steerable, extended glide aerial delivery systems to deliver critical supplies/equipment when precision and standoff required for ground threat, terrain, winds. FY10 efforts include integrating new materials into Multi-Mission Parachute System family of canopies for improved performance; development of 3000psi bottle for Parachutist's High Altitude Oxygen System (PHAOS); evaluation of next generation Automatic Activation Device (AAD) for parachuting safety, improvements to Parachutist's Individual Equipment Kit (PIEK), incorporate fire resistance into clothing; develop new Tandem Offset Resupply Delivery System (TORDS) main canopy; integrate new signature reduction technologies to Full Spectrum Battle Equipment; and update High Altitude High Opening Parachute Navigation System (HAHOPNS) software to provide position data on other parachutists.									
		FY 2008		FY 2009		FY 2010		FY 2010 OCO	
Accomplishment/Effort Subtotal Cost		0.027		0.000		0.000		0.000	
RDT&E Articles Qty									
Family of Small Craft: Procurement of ruggedized laptops for use as diagnostic tools for test and evaluation of the Non-Gasoline Burning Outboard Engine.									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO	
Accomplishment/Effort Subtotal Cost		0.495		0.000		2.966		0.000	
RDT&E Articles Qty						15			
Underwater Reconnaissance Capability (URC): FY10 efforts include procurement of prototypes for the pre-planned product improvement of the heads up display for the Combatant Diver Full Face Mask (CDFFM). Other efforts include external diver warming systems, analysis of facility requirements for nitrogen-oxygen system in preparation for procurements of the upgraded underwater breathing apparatus, evaluation of reliability challenges presented by fielded systems, hardening of the PVS-14 for underwater use.									
(U) Total \$		2.945		0.961		4.044		0.000	

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-7 Operational Systems Development	0206623M Marine Corps Ground Combat Supporting Arms Systems	C4002 Family of Raid/Reconnaissance 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>
PMC BLI 651800 Amphibious Support Equipment	17.255	13.745	39.876
PMC BLI 700000 Jt Air Drop Sys	0.800	0.000	0.000
PMC BLI 700000 URC	1.007	0.000	0.254

(U) Related RDT&E: Not Applicable.

(U) D. ACQUISITION STRATEGY:

(U) FRRE: Acquisition strategy for JPADS ULW includes market research survey to reveal commercially available systems with potential to meet requirements, followed by evaluation to further refine concept of operations and tailor performance specification requirements and avoid non-essential attributes. Full and open competition for production systems is planned. Base production contract with First Article Test will integrate SAASM GPS into the vendor's system, as well as optimize system for use with Marine Corps canopies. Options on contract will provide for procurement of production systems and supporting logistics elements upon successful completion of integration efforts. Planned Firm Fixed Price IDIQ contract will allow other DoD elements to procure systems using our contract vehicle if desired. In FY10, acquisition strategy is to fund engineering changes and product upgrade testing and development for PHAOS, AAD, HAHOPNS, and TORDS.

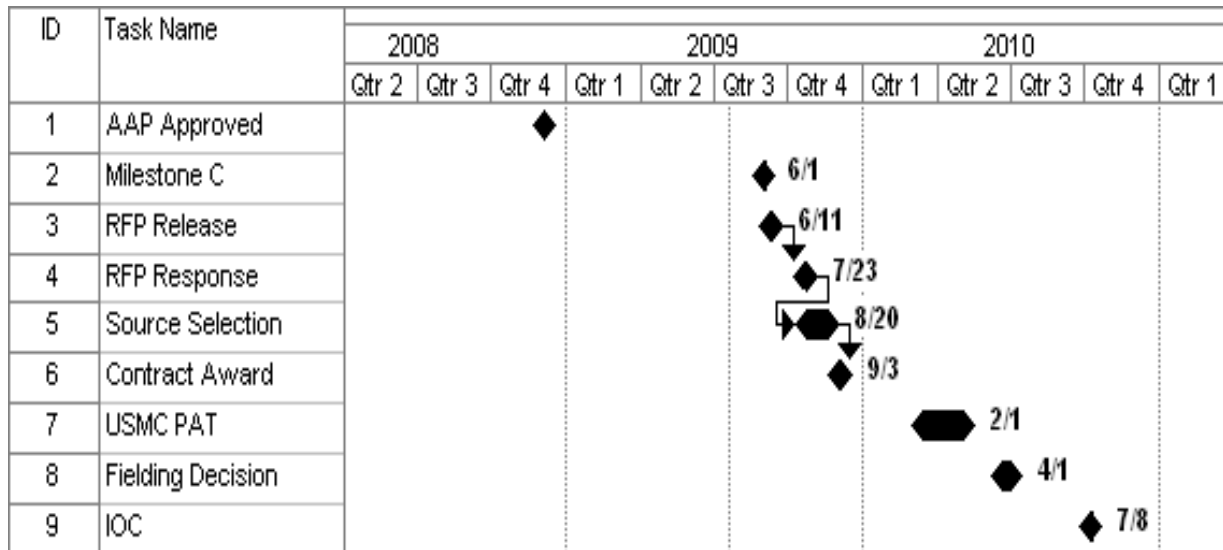
(U) URC: The acquisition strategy consists of market surveys to identify off-the-shelf/non-developmental item baseline competitions followed by release of desired capabilities/specifications and establishment of the trade space parameters. Project dependent, expect to down-select to best value. Follow-on testing/evaluations as required to be conducted. For the CDFFM, the "head's up display" will be a development effort. A Request For Information will be issued to identify companies with a demonstrated ability to develop the display. Responding companies will be visited to evaluate capabilities, followed by issuance of Request For Proposal and evaluation of best value and demonstrated performance. For technology upgrades to existing projects during FY10, engineering changes and product upgrade development and testing is planned.

(U) E. MAJOR PERFORMERS:

FY08: MARCORSYSCOM, Quantico VA	Hardware development; systems engineering
FY08: NSWG, Panama City FL	Developmental support; operational Test and evaluation
FY09: MARCORSYSCOM, Quantico VA	Hardware development
FY10: MARCORSYSCOM, Quantico VA	Hardware development; systems engineering; program management support

Exhibit R-4-4a Project Schedule/Detail			DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat Supporting Arms Systems	PROJECT NUMBER AND NAME C4002 Family of Raid and Reconnaissance Equipment		

FAMILY OF RAID RECON EQUIP - Joint Precision Air Drop System Ultra Light Weight (JPADS-ULW)



Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N, 4002, FRRE	1.962	0.588	0.000
(U) PMC, BLI 651800 AMPHIB SPT EQUIP	6.594	0.815	5.583
(U) PMC, BLI 700000 JT AIR DROP SYS	0.800	0.000	0.000

	FY 2008	FY 2009	FY2010
Family of Raid Recon Equip - JPADS ULW			
AAP Decision	4Q		
Milestone C (FRP Decision)		3Q	
Full Rate Production (Contract Award)		4Q	
IOC			4Q

Exhibit R-4-4a Project Schedule/Detail		DATE: May 2009																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat Supporting Arms Systems	PROJECT NUMBER AND NAME C4002 Family of Raid and Reconnaissance Equipment																																								
UNDERWATER RECONNAISSANCE CAPABILITY - Tactical Hydrographic Survey Equipment (THSE)																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">ID</th> <th style="width: 45%;">TASK NAME</th> <th style="width: 15%;"></th> <th style="width: 15%;">2008</th> <th style="width: 20%;">2009</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>DARPA DESIGN AND TESTING 9/29/08</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>PROOF OF CONCEPT TESTING 10/30/08</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>DARPA PHASE II DESIGN/TESTING 9/15/09</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>MILESTONE C/FRP 11/23/09</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>FRP CONTRACT AWARD 3/31/10</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>IOC 9/30/10</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			ID	TASK NAME		2008	2009	2010					1	DARPA DESIGN AND TESTING 9/29/08				2	PROOF OF CONCEPT TESTING 10/30/08				3	DARPA PHASE II DESIGN/TESTING 9/15/09				4	MILESTONE C/FRP 11/23/09				5	FRP CONTRACT AWARD 3/31/10				6	IOC 9/30/10			
ID	TASK NAME		2008	2009																																						
2010																																										
1	DARPA DESIGN AND TESTING 9/29/08																																									
2	PROOF OF CONCEPT TESTING 10/30/08																																									
3	DARPA PHASE II DESIGN/TESTING 9/15/09																																									
4	MILESTONE C/FRP 11/23/09																																									
5	FRP CONTRACT AWARD 3/31/10																																									
6	IOC 9/30/10																																									
<table style="width: 100%;"> <tr> <td style="width: 40%;">Program Funding Summary</td> <td style="width: 10%; text-align: center;">FY 2008</td> <td style="width: 10%; text-align: center;">FY 2009</td> <td style="width: 10%; text-align: center;">FY 2010</td> </tr> <tr> <td>(APPN, BLI #, NOMEN)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) RDT&E,N, 4002, URC</td> <td style="text-align: right;">0.495</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">2.966</td> </tr> <tr> <td>(U) PMC, BLI 651800 AMPHIBIOUS SPT EQUIP</td> <td style="text-align: right;">2.793</td> <td style="text-align: right;">4.524</td> <td style="text-align: right;">8.468</td> </tr> <tr> <td>(U) PMC, BLI 700000 SPARES/REPAIR PARTS</td> <td style="text-align: right;">1.007</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.254</td> </tr> </table>			Program Funding Summary	FY 2008	FY 2009	FY 2010	(APPN, BLI #, NOMEN)				(U) RDT&E,N, 4002, URC	0.495	0.000	2.966	(U) PMC, BLI 651800 AMPHIBIOUS SPT EQUIP	2.793	4.524	8.468	(U) PMC, BLI 700000 SPARES/REPAIR PARTS	1.007	0.000	0.254																				
Program Funding Summary	FY 2008	FY 2009	FY 2010																																							
(APPN, BLI #, NOMEN)																																										
(U) RDT&E,N, 4002, URC	0.495	0.000	2.966																																							
(U) PMC, BLI 651800 AMPHIBIOUS SPT EQUIP	2.793	4.524	8.468																																							
(U) PMC, BLI 700000 SPARES/REPAIR PARTS	1.007	0.000	0.254																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">FY 2008</th> <th style="width: 10%; text-align: center;">FY 2009</th> <th style="width: 10%; text-align: center;">FY2010</th> </tr> </thead> <tbody> <tr> <td>Underwater Reconnaissance Capability - THSE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone C (FRP Decision)</td> <td></td> <td></td> <td style="text-align: center;">1Q</td> </tr> <tr> <td>Full Rate Production (Contract Award)</td> <td></td> <td></td> <td style="text-align: center;">2Q</td> </tr> <tr> <td>IOC</td> <td></td> <td></td> <td style="text-align: center;">4Q</td> </tr> </tbody> </table>					FY 2008	FY 2009	FY2010	Underwater Reconnaissance Capability - THSE				Milestone C (FRP Decision)			1Q	Full Rate Production (Contract Award)			2Q	IOC			4Q																			
	FY 2008	FY 2009	FY2010																																							
Underwater Reconnaissance Capability - THSE																																										
Milestone C (FRP Decision)			1Q																																							
Full Rate Production (Contract Award)			2Q																																							
IOC			4Q																																							

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supporting Arms Systems				PROJECT NUMBER AND NAME C9C85 Marine Personnel Carrier (MPC)			
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY2010 Total			
Project Cost		0.000	0.000	3.134	0.000	3.134			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Marine Personnel Carrier (MPC) is part of a portfolio of capabilities that provide closure to real world operational gaps and shortfalls in the ability of the MAGTF to conduct ground based maneuver tasks. The MPC, as the medium capability category platform, provides a bridge in capability between the EFV and JLTV and a balance between the performance, protection and payload attributes. The MPC family of vehicles includes the baseline armored personnel carrier and two supporting mission role variants: a command & control variant and a recovery & maintenance variant. (MPC was previously funded under project C1555).									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO	
Accomplishment/Effort Subtotal Cost		0.000		0.000		3.134		0.000	
RDT&E Articles Qty									
MARINE PERSONNEL CARRIER - MPC: Develop Marine-PC fording capabilities with Appliqué Armor, fabricate prototypes, PMO & matrix support, PMO travel, and conduct DT/OT of Marine-PC prototypes.									
(U) Total \$		0.000		0.000		3.134		0.000	

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME C9C85 Marine Personnel Carrier (MPC)
(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>FY2010 OCO</u>	
(U) RDTE,N, C1555, LAV MPC	9.741	5.769
	0.000	0.000
(U) Related RDT&E: N/A		
(U) D. ACQUISITION STRATEGY: The Marine Personnel Carrier (MPC) program will utilize Full and Open competition. The MPC is a family of vehicles consisting of a personnel carrier, a command and control platform and a maintenance and recovery vehicle. After Milestone A, a source selection will be held to select up to three contractors. Each of these contractors will provide a prototype personnel carrier vehicle that will be subjected to Government evaluation. The results of this evaluation will be used to support both a Milestone B decision as well as another source selection to choose the two best competitors that will be carried through the Engineering & Manufacturing Development (EMD) phase (on the personnel carrier only). The results of the two competitors EMD efforts will be used to support a Milestone C decision as well as another source selection to choose the ultimate personnel carrier source for Low Rate Initial Production. The selected source will also be tasked to perform EMD on the command and control and maintenance and recovery vehicles.		
(U) E. MAJOR PERFORMERS:		
Marine-PC		
FY08	Currently under Project C1555	
	Georgia Tech Research Institute (GTRI), Atlanta, GA. Modeling and Simulation. Apr 08	
	Nevada Automotive Test Center (NATC), Carson City, NV. Mobility Testing. Dec 07	
FY09	Currently under Project C1555	
	Nevada Automotive Test Center (NATC), Carson City, NV. Mobility Testing. Dec 08	
	Space & Naval Warfare Systems (SPAWARS), North Charleston, SC C4I Engineering & Program Management Support. Jan 09.	
	BADENOCH, Troy, MI Digital Architectural Requirements. Feb 09	
	Waterways Experiment Station (WES), Vicksburg, MS. Swim Modeling. Mar 09	
FY10	TBD	

Exhibit R-3 Cost Analysis										DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems					C9C85 Marine Personnel Carrier (MPC)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
System Development (MPC)	Various	TBD												
Subtotal Product Dev			0.000	0.000		0.000		0.000						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Technical Eng. Services (MPC)	Various	TBD						1.093	2Q10					
Subtotal Support			0.000	0.000		0.000		1.093						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Develop/OperatTest & Eval (MPC)	Various	TBD						0.367	1Q10					
Subtotal T&E			0.000	0.000		0.000		0.367						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Program Management (MPC)	Various	Various						1.674	1Q10					
Subtotal Management			0.000	0.000		0.000		1.674						
Remarks:														
Total Cost			0.000	0.000		0.000		3.134						

Exhibit R-4-4a Project Schedule/Detail			DATE: May 2009																																																																																	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME																																																																																		
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C9C85 Marine Personnel Carrier (MPC)																																																																																		
(U) D. SCHEDULE PROFILE: <u>MARINE PC</u> Milestone A: Milestone B: DT OT 2nd Qtr, FY 2010 Milestone C: Contract Award: IOC: FOC: <u>Program Funding Summary</u> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2008</u></th> <th style="width: 10%; text-align: center;"><u>FY 2009</u></th> <th style="width: 10%; text-align: center;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td><u>(APPN, BLI #, NOMEN)</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td><u>(U) RDT&E,N C1555, LAV PIP</u></td> <td style="text-align: center;">9.741</td> <td style="text-align: center;">5.769</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td><u>(U) RDT&E,N C9C85, MPC</u></td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">3.134</td> </tr> </tbody> </table>						<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>(APPN, BLI #, NOMEN)</u>				<u>(U) RDT&E,N C1555, LAV PIP</u>	9.741	5.769	0.000	<u>(U) RDT&E,N C9C85, MPC</u>	0.000	0.000	3.134																																																																
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																																																																	
<u>(APPN, BLI #, NOMEN)</u>																																																																																				
<u>(U) RDT&E,N C1555, LAV PIP</u>	9.741	5.769	0.000																																																																																	
<u>(U) RDT&E,N C9C85, MPC</u>	0.000	0.000	3.134																																																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">LAV SCHEDULE DETAIL</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> </tr> </thead> <tbody> <tr> <td>MARINE PC</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone A:</td> <td></td> <td></td> <td>2Q</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone B:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Milestone C:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Award:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>IOC:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FOC:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Operational Test to be conducted with LRIP vehicles.					LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					MARINE PC								Milestone A:			2Q					Milestone B:								DT								OT								Milestone C:								Contract Award:								IOC:								FOC:							
LAV SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010																																																																																	
MARINE PC																																																																																				
Milestone A:			2Q																																																																																	
Milestone B:																																																																																				
DT																																																																																				
OT																																																																																				
Milestone C:																																																																																				
Contract Award:																																																																																				
IOC:																																																																																				
FOC:																																																																																				

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-7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supt Arms			C9C71 PERM EFSS USMC																							
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY2010 TOTAL																						
Project Cost		4.242	0.000	0.000	0.000	0.000																						
RDT&E Articles Qty																												
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) EFSS includes a suite of ammunition that can be safely transported and stored and that has an objective range capability of 17 kilometers. Precision Extended Range Munition (PERM) will enable the EFSS to achieve the required extended range and will provide a precision capability. Insensitive Munitions (IM) components being developed are required for all EFSS ammunition including PERM to allow for safe transport and storage. (U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>4.242</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Precision Extended Range Munition (PERM): to continue uninterrupted development and qualification of ammunition components that support PERM. This development was recently certified as Insensitive Munition (IM) and went through Follow On Test and Evaluation (FOT&E) which completed in March 2008. Previous add commenced PERM effort with the development of Insensitive Munition (IM) compliant ammunition for EFSS. This funding will continue to support the precision guidance capability for the EFSS ammunition. (U) Total \$ 4.242 0.000 0.000 0.000 (U) C. OTHER PROGRAM FUNDING SUMMARY: <table border="1"> <thead> <tr> <th>Line Item No. & Name</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> </thead> <tbody> <tr> <td>PMC BLI# 206400 Expeditionary Fire Support Sys</td> <td>3.869</td> <td>22.037</td> <td>19.591</td> </tr> </tbody> </table> (U) Related RDT&E: (U) D. ACQUISITION STRATEGY: EFSS will use an evolutionary acquisition approach fielding a near term capability in FY08 while leveraging emerging technologies to mature the technology by FY09 and beyond. (U) E. MAJOR PERFORMERS: General Dynamics Tactical and Ordnance Systems (GDOTS)									COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000	RDT&E Articles Qty				Line Item No. & Name	FY 2008	FY 2009	FY 2010	PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010																									
Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000																									
RDT&E Articles Qty																												
Line Item No. & Name	FY 2008	FY 2009	FY 2010																									
PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591																									

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supt Arms			PROJECT NUMBER AND NAME C9999 Congressional Adds			
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY 2010 OCO	FY 2010 Total			
Project Cost	6.942	0.000	0.000	0.000	0.000			
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
(U) EFSS includes a suite of ammunition that can be safely transported and stored and that has an objective range capability of 17 kilometers. Precision Extended Range Munition (PERM) will enable the EFSS to achieve the required extended range and will provide a precision capability. Insensitive Munitions (IM) components being developed are required for all EFSS ammunition including PERM to allow for safe transport and storage.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000	0.000				
RDT&E Articles Qty								
Precision Extended Range Munition (PERM) C9C71: This Congressional Add funds continued uninterrupted development and qualification of ammunition components that support PERM. This development must stay on-track so that the Insensitive Munition (IM) ammunition components are certified and ready to be included in the Operational Test of the EFSS system scheduled to commence in April 07 and to support initial fielding of the basic system during FY07. Previous add commenced PERM effort with the development of compliant ammunition for EFSS. This funding will complete the IM ammunition testing and certification and commence the precision guidance capability for the EFSS ammunition.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	1.543	0.000	0.000	0.000				
RDT&E Articles Qty								
Tractable Durable Net Complex Shaped Body & Extremity Armor C9C72: Develop low cost, highly effective ceramic armor for extended body coverage that can defend against lethal threats such as tungsten carbide core Armor-Piercing (AP) and AP-M2 rounds.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	1.157	0.000	0.000	0.000				
RDT&E Articles Qty								
Ultrasonic Consolidation of Embedded Sensors C9C73: Design, development, test and fielding of consolidated/advanced embedded key sensors and tracking devices to unobtrusively monitor critical condition information to the logistics and tactical front as well as tracking the location and status of critical parts and field resources.								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
Accomplishment/Effort Subtotal Cost	0.000	1.000	0.000	0.000				
RDT&E Articles Qty								
MARCORP Computer Research C9E22A: Design, development of a joint ruggedized modular processing computer portable maintenance (PMA) for use as a hand-held device to enable enhanced access to total life cycle management tools and data.								
(U) Total \$	6.942	1.000	0.000	0.000				
(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>FY 2010 OCO</u>				
(U) Related RDT&E:								
(U) D. ACQUISITION STRATEGY:								
(U) E. MAJOR PERFORMERS:								

UNCLASSIFIED

UNCLASSIFIED

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-7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supt Arms			C9C71 PERM EFSS USMC																							
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY2010 TOTAL																						
Project Cost		4.242	0.000	0.000	0.000	0.000																						
RDT&E Articles Qty																												
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) EFSS includes a suite of ammunition that can be safely transported and stored and that has an objective range capability of 17 kilometers. Precision Extended Range Munition (PERM) will enable the EFSS to achieve the required extended range and will provide a precision capability. Insensitive Munitions (IM) components being developed are required for all EFSS ammunition including PERM to allow for safe transport and storage. (U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>4.242</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Precision Extended Range Munition (PERM): to continue uninterrupted development and qualification of ammunition components that support PERM. This development was recently certified as Insensitive Munition (IM) and went through Follow On Test and Evaluation (FOT&E) which completed in March 2008. Previous add commenced PERM effort with the development of Insensitive Munition (IM) compliant ammunition for EFSS. This funding will continue to support the precision guidance capability for the EFSS ammunition. (U) Total \$ 4.242 0.000 0.000 0.000 (U) C. OTHER PROGRAM FUNDING SUMMARY: <table border="1"> <thead> <tr> <th>Line Item No. & Name</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> </thead> <tbody> <tr> <td>PMC BLI# 206400 Expeditionary Fire Support Sys</td> <td>3.869</td> <td>22.037</td> <td>19.591</td> </tr> </tbody> </table> (U) Related RDT&E: (U) D. ACQUISITION STRATEGY: EFSS will use an evolutionary acquisition approach fielding a near term capability in FY08 while leveraging emerging technologies to mature the technology by FY09 and beyond. (U) E. MAJOR PERFORMERS: General Dynamics Tactical and Ordnance Systems (GDOTS)									COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000	RDT&E Articles Qty				Line Item No. & Name	FY 2008	FY 2009	FY 2010	PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010																									
Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000																									
RDT&E Articles Qty																												
Line Item No. & Name	FY 2008	FY 2009	FY 2010																									
PMC BLI# 206400 Expeditionary Fire Support Sys	3.869	22.037	19.591																									

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supt Arms		PROJECT NUMBER AND NAME C9999 Congressional Adds			
COST (\$ in Millions)	FY 2008	FY 2009	FY2010	FY 2010 OCO	FY 2010 Total		
Project Cost	6.942	0.000	0.000	0.000	0.000		
RDT&E Articles Qty							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
(U) EFSS includes a suite of ammunition that can be safely transported and stored and that has an objective range capability of 17 kilometers. Precision Extended Range Munition (PERM) will enable the EFSS to achieve the required extended range and will provide a precision capability. Insensitive Munitions (IM) components being developed are required for all EFSS ammunition including PERM to allow for safe transport and storage.							
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:							
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost	4.242	0.000	0.000	0.000			
RDT&E Articles Qty							
Precision Extended Range Munition (PERM) C9C71: This Congressional Add funds continued uninterrupted development and qualification of ammunition components that support PERM. This development must stay on-track so that the Insensitive Munition (IM) ammunition components are certified and ready to be included in the Operational Test of the EFSS system scheduled to commence in April 07 and to support initial fielding of the basic system during FY07. Previous add commenced PERM effort with the development of compliant ammunition for EFSS. This funding will complete the IM ammunition testing and certification and commence the precision guidance capability for the EFSS ammunition.							
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost	1.543	0.000	0.000	0.000			
RDT&E Articles Qty							
Tractable Durable Net Complex Shaped Body & Extremity Armor C9C72: Develop low cost, highly effective ceramic armor for extended body coverage that can defend against lethal threats such as tungsten carbide core Armor-Piercing (AP) and AP-M2 rounds.							
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost	1.157	0.000	0.000	0.000			
RDT&E Articles Qty							
Ultrasonic Consolidation of Embedded Sensors C9C73: Design, development, test and fielding of consolidated/advanced embedded key sensors and tracking devices to unobtrusively monitor critical condition information to the logistics and tactical front as well as tracking the location and status of critical parts and field resources.							
(U) Total \$	6.942	0.000	0.000	0.000			
(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>FY 2010 OCO</u>			
(U) Related RDT&E:							
(U) D. ACQUISITION STRATEGY:							
(U) E. MAJOR PERFORMERS:							

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-7 Operational Sys Dev		0206623M Marine Corps Ground Combat Spt Arms Systems				C2237 Amphibious Vehicle Test Branch				
		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total				
Project Cost		0.872	0.920	0.906						
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The Amphibious Vehicle Test Branch (AVTB) is a one-of-a-kind Department of Defense test facility for amphibious vehicles and supports the requirements of all services. The AVTB conducts developmental, combined developmental/operational, and follow-on testing and evaluation of production hardware. It also conducts Product Assurance Testing and Substitute or alternative parts and material testing for amphibious vehicles and associated equipment. Because of its year-round temperate climate, diverse terrain, and 17 miles of coastline, the AVTB is ideal for the amphibious vehicle, as well as ship related testing. The AVTB is in close proximity to San Clemente Island which is used frequently for live fire sea-to-shore testing and high-speed water testing. The AVTB is committed to testing product improvement programs, engineering change proposal design changes, and field change requests. The Amphibious Vehicle Test Branch (AVTB) serves as the primary Test & Evaluation facility for the Expeditionary Fighting Vehicle (EFV) Program, the Marine Corps' number one priority ground weapon system acquisition program.										
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO					
Accomplishment/Effort Subtotal Cost		0.700	0.711	0.713						
RDT&E Articles Qty										
Provide the necessary support assets required to conduct safe and accurate simultaneous developmental testing on EFV prototypes. Provide the maintenance, refurbishment, upgrade, and replacement of test equipment and instrumentation as necessary to provide program support, supplies, and services at the AVTB test site as well as various off-site testing locations to support scheduled EFV Developmental Testing. This includes the upgrade of instrumentation for over the horizon (OTH) capability in developing weapons systems to support operational maneuver from the sea, providing organic supply support including management operations, general accounting, and a maintenance float of equipment; and providing intermediate maintenance (third echelon) of organic non-developmental communication electronic and ordnance equipment.										
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO					
Accomplishment/Effort Subtotal Cost		0.172	0.209	0.193						
RDT&E Articles Qty										
Provide funding for necessary services provided by Marine Corps Base, Camp Pendleton, California for electricity, heating, and other power charges; and long distance telephone support. Provide funding for calibration of laboratory test equipment and maintenance services provided by MCLB Barstow and 1st Force Service Support Group (FSSG).										
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO					
(U) Total \$		0.872	0.920	0.906						
(U) D. ACQUISITION STRATEGY: Work will be led in-house. Necessary contractor support will be provided by Marine Corps Base Camp Pendleton via existing contracts. General Services Administration will be used for vehicle leasing contract.										
(U) E. MAJOR PERFORMERS: MCTSSA, Camp Pendleton, CA - Maintenance, refurbishment, upgrade, and replacement of test equipment.										
(U) SCHEDULE PROFILE: Testing conducted at AVTB includes all aspects of Marine Corps Amphibious Assault Vehicles. During the upcoming year, AVTB will be dedicated to the Developmental Testing of the EFV, which will require intense reliability testing of all EFVs assigned to the Test Branch. In addition, AVTB will support various communications testing and operational testing of the EFV in order to prepare for the future integration of EFVs into the Fleet Marine Force (FMF).										

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT (PE) NAME AND NO. 0206624M Marine Corps Combat Services Support						
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
Total PE Cost	124.955	9.620	17.057	0.000	17.057			
C0201 Logistical Vehicle System Replacement (LVSR)	5.571	4.141	1.500	0.000	1.500			
C2316 Combat Service Support Engineering Equipment	114.069	0.572	10.306	0.000	10.306			
C2509 Motor Transport Modernization	1.790	0.601	2.131	0.000	2.131			
C2929 Testing Measuring Diagnostic Equip (TMDE) & SE	3.525	1.981	1.494	0.000	1.494			
C9872 Autonomic Logistics	0.000	2.325	0.000	0.000	0.000			
C9C90 MTRV Mod	0.000	0.000	1.626	0.000	1.626			
Quantity of RDT&E Articles								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element (PE) provides funding for Marine Air-Ground Task Force requirements for Combat Service Support equipment improvement. It will enhance combat breaching capabilities of the ground combat elements, logistics, maintenance and transportation. The PE also provides improvements in all areas of Combat Service Support Equipment Vehicles by determining the replacement for the heavy, medium and light fleet vehicles. Alternative Power Sources for Communications Equipment (APSCE) is a suite of devices that provide the commander with the capability to use existing power to operate his communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators. The Marine Corps Family of Automatic Test Systems (ATS), formerly TETS, provides automatic testing capability for use by technicians both in garrison and forward edge of Battlefield.								
B. PROGRAM CHANGE SUMMARY								
	FY2008	FY2009	FY2010					
Funding:								
FY 2009 President's Budget:	12.750	9.646	3.396					
FY 2010 President's Budget:	124.955	9.620	17.057					
Total Adjustments:	112.205	-0.026	13.661					
Summary of Adjustments:								
a. Congressional Adjustments:		-0.019						
- FY08 GWOT:	111.210							
b. SBIR/STTR Transfer:	-1.623							
c. Program Adjustments:	2.618	-0.002	13.871					
d. Rate/Misc Adjustments:	0.000	-0.005	-0.210					
Subtotal	112.205	-0.026	13.661					

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-7 Operational Sys Dev		0206624M Marine Corps Combat Services Support			C0201 Logistical Vehicle Sys Replacement (LVSR)			
		FY 2008	FY 2009	FY2010	FY2010OCO	FY2010 TOT		
		5.571	4.141	1.500	0.000	1.500		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
The Logistical Vehicle System Replacement (LVSR) program will replace the current Logistical Vehicle System (LVS) fleet. This vehicle will increase mobility, maintainability, and reliability for the heavy fleet, while increasing off-road payload. Three LVSR variants will replace the current five LVS variants. The Cargo variant will be fielded prior to the LVSR Tractor and Wrecker variants which are options on the LVSR cargo variant production contract. The Flatrack Refueling Capability (FRC) program will replace the M970 Semi-Trailer refueling in both the Force Service Support Group (FSSG) and the Marine Air Wings (MAWs) for ground refueling missions.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		2.297	0.300	0.000	0.000			
RDT&E Articles Qty								
LVSR: Test and Evaluation.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.150	0.200	0.000			
RDT&E Articles Qty								
LVSR: Engineering/Program Management								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	2.986	0.000	0.000			
RDT&E Articles Qty								
LVSR: Engineering Support. Tractor/Wrecker								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		2.537	0.000	1.300	0.000			
RDT&E Articles Qty								
LVSR: Operational Test and Evaluation.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.737	0.000	0.000	0.000			
RDT&E Articles Qty		1						
FRC: Prototype Development								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.605	0.000	0.000			
RDT&E Articles Qty								
FRC: Developmental Test								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.000	0.100	0.000	0.000			
RDT&E Articles Qty								
FRC: Program Management and Support Costs								
(U) Total \$		5.571	4.141	1.500	0.000			

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206624M Marine Corps Combat Services Support	PROJECT NUMBER AND NAME C0201 Logistical Vehicle Sys Replacement (LVSR)

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY2010 OCO
(U) PMC Line (BLI# 509300) LVSR	24.758	273.051	217.390	59.219

(U) Related RDT&E:

- (U) PE 0206623M Marine Corps Ground Combat Supporting Arms Systems
- (U) PE 0603640M Marine Corps Advanced Technology Demonstration
- (U) PE 0604804A Logistics and Engineering Equip/Engr Development
- (U) PE 0206313M Marine Corps Communications

(U) D. ACQUISITION STRATEGY: The Logistics Vehicle System Replacement (LVSR) program consists of two separate phases. During the first phase, the System Development and Demonstration (SD&D) phase, two contracts were awarded to procure prototypes for developmental testing. The winner of the SD&D phase was awarded a production contract to produce Low Rate Initial Production (LRIP) vehicles for operational testing. The other two LVSR variants, the Tractor and Wrecker variants have been designed, built and are being tested under the LVSR Cargo production contract.

(U) D. ACQUISITION STRATEGY: The Flatrack Refueling Capability (FRC) program original acquisition strategy consisted of a joint procurement contract with the US Army. FY07 RDTE funds were used to procure two prototypes developed by DSR Systems Inc. After development and initial testing the Army decided not to procure the DSR system. Our revised acquisition strategy will only include US Marine Corps requirements. Further analysis has resulted in the new acquisition strategy focused to contract for Commercially available Items via a Small Business Set Aside procurement. These funds will procure one prototype for Developmental Testing and Field Users Evaluation (FUE). After successfully testing we will procure the AO.

(U) E. MAJOR PERFORMERS:

Mar '04	American Truck Corp	3 Vehicle Prototypes
Mar '04	Oshkosh Truck Corp	3 Vehicle Prototypes
May'07	DSR System Incorporated	2 Prototypes

Exhibit R-3 Cost Analysis						DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME									
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Serv			C0201 Logistical Vehicle System Replacement (LVSR)									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
LVSR Variant Prototypes	RCP	MCSC Quantico, VA	16.793	0.000		0.000		0.000							
LVSR Source Selection	RCP	MCSC Quantico, VA	0.248	0.000											
FRC Prototypes	RCP	DSR Systems Incorporat	3.920	0.000		0.000		0.000							
FRC Prototype	RCP	TBD	0.000	0.637	09/08	0.000		0.000							
Subtotal Product Dev			20.961	0.637		0.000		0.000							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
LVSR Development Design & Test	MIPR	OshKosh, WI	0.175	0.000		0.000									
LVSR Variant Test	MIPR	TACOM, Warren, MI	0.110	0.000		0.000									
LVSR Corrosion Test	WR	NSWC Philadelphia	0.140	0.000		0.000									
LVSR Development Test	MIPR	Aberdeen Test Center	4.220	1.425	03/08	0.000									
LVSR Development Test	RC	OshKosh, WI	0.000	1.622	10/07	0.000									
LVSR Development & Test	WR	NSWC Indian Head, MD	0.024	0.000		0.000									
FRC Modeling and Simulation	RCP	NSWC, Carderock, MD	0.355	0.000		0.000									
FRC Developmental T&E	RCP	NATC, NV	0.000	0.000		0.605	03/09	0.000							
Subtotal Developmental Cost			5.024	3.047		0.605		0.000							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
LVSR Engineer & Tech Support	WR	NTSC, Orlando, FL	0.194	0.000		0.000									
LVSR Engineer Change Support	RCP	MCSC Quantico, VA	0.569	0.000		2.986	12/08								
Subtotal Engineer & Tech Support			0.763	0.000		2.986		0.000							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
LVSR Operational T&E	WR	MCOTEA	1.023	1.357	12/07	0.300	12/08	1.300	04/10						
LVSR Operational T&E	WR	Fort Greely and 29 Palm	0.000	0.100	01/08										
LVSR Operational T&E	RCP	OshKosh, WI		0.330	04/08										
Subtotal Operational Support			1.023	1.787		0.300		1.300							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
LVSR Contractor Suppt	RCP	TBD	4.079	0.000				0.100	12/09						
LVSR Prgrm Mgmt Spt	WR	MCSC Quantico, VA	0.798	0.000		0.150	12/08	0.100	12/09						
FRC Contractor Suppt	RCP	Sverdrup, Dumfries, VA.	0.000	0.050	05/08	0.050	12/08								
FRC Prgrm Mgmt Spt	WR	MCSC Quantico, VA	0.000	0.050	05/08	0.050	12/08								
Subtotal Management			4.877	0.100		0.250		0.200							
Remarks:															
Total Cost			32.648	5.571		4.141		1.500							

Exhibit R-4-4a Project Schedule/Detail

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

UNCLASSIFIED

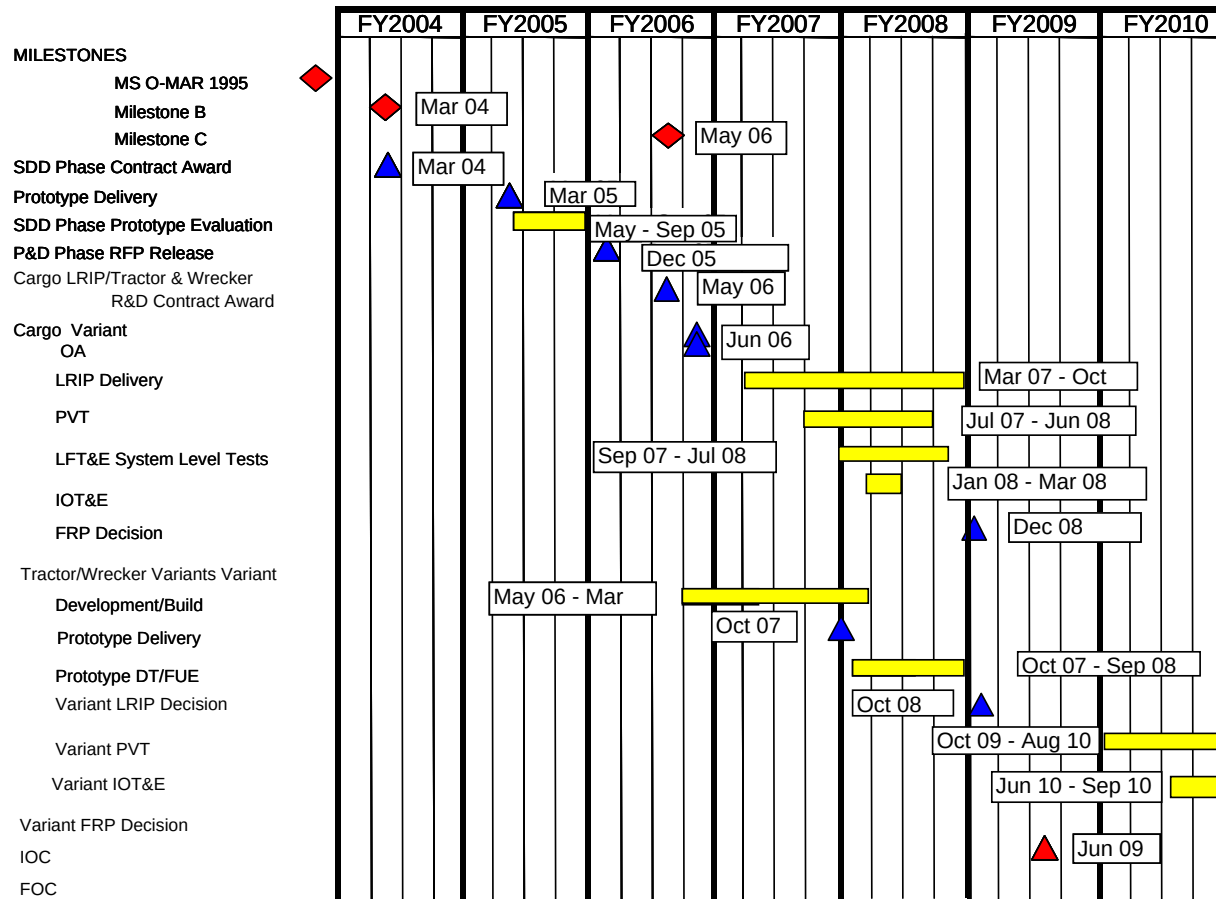
PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys Dev

0206624M Marine Corps Combat Services Spt

C0201 Logistical Vehicle System Replacement (LVSr)

Logistical Vehicle System Replacement



Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N (C0201 LVSR)

(U) PMC Line (BLI# 509300) LVSR

FY 2008

FY 2009

FY 2010

4.834

3.436

1.500

24.758

273.051

276.609

Exhibit R-4-4a Project Schedule/Detail

May 2009

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206624M Marine Corps Combat Services Spt	C0201 Logistical Vehicle System Replacement (LVSR)

LVSR SCHEDULE DETAIL				FY 2008	FY 2009	FY 2010				
Release RFP										
Source Selection										
Contract Award										
Cargo Prototype Delivery										
Operational Assessment										
Cargo Variant										
Milestone C										
LRIP Delivery										
PVT				3Q						
IOT&E				2Q						
FRP Decision				4Q						
Tractor/Wrecker Variants										
Prototype Delivery				1Q						
LRIP Delivery					4Q					
PVT						1Q				
IOT&E						3Q				
FRP Decision										
IOC					3Q					
FOC										

EXHIBIT R-2a, RDT&E Project Justification					UNCLASSIFIED		DATE: May 2009																																
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME																																					
RDT&E, N /BA-7 Operational Sys Dev		0206624M Marine Corps Combat Services Spt			C2316 Combat Services Support Engineering Equipment																																		
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total																																	
Project Cost		114.069	0.572	10.306	0.000	10.306																																	
RDT&E Articles Qty																																							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project includes improvements in all areas of the M1A1 main battle tank. The M1A1 tank provides armor protected firepower to the USMC ground combat element. Its advanced thermal sights provide superior target acquisition and target identification. Coupled with its 120mm cannon and suite of ammunition, it is the primary armor defeating weapon on the battlefield, that also provides lethal supporting fires to supported maneuver units. Continued funding is required to address obsolescence and support pre-planned product improvements. Corrosion Prevention and Control Program (CPAC): Funding will also address corrosion prevention and control issues for all Marine Corps tactical ground and ground support equipment. CPAC RDT&E funding will identify corrosion prone areas of legacy systems against new process, procedure and material solutions and new technologies for implementation during system acquisition. The M1A1 Survivability/Lethality Program effort includes critical product improvements including the application of additional armor, integration of counter-sniper fire technology, and improvement to existing secondary armanment systems. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximan survivability. Joint Assault Bridge (JAB) is an armored vehicle used for rapidly employing, short-gap, assault crossing system, capable of spanning natural and manmade obstacles up to 60 feet (18.29) while under fire for up to Military Load Class (MLC) 70-ton vehicles. The JAB consists of a rebuilt and upgraded M1A1 Tank chassis with existing MLC70 scissors bridge and a modified BR90 launcher. The JAB will provide the MAGTF with the capability to conduct assault and tactical wet and dry gap crossings in all types of climate and terrain, including slopes, trenches and vertical steps. The M1A1 based vehicle will provide the survivability, maintainability, and maneuverability required to keep pace with the maneuver force. Mine Resistant Ambush Protected Vehicles (MRAP) increase the survivability and mobility of Joint Forces operating in hazardous fire areas. The expanded use of Improvised Explosive Devices (IED) of various types and the continual use of rocket propelled grenades (RPGs) and small arms fire (SAF) in the area of operation requires a vehicle capable of surviving the IED/RPG/SAF threat. Funding will provide ballistic/survivability objective and threshold testing and spiral upgrade development for these critical vehicles. This spiral development project will enhance the capabilities of the Route Reconnaissance and Clearance (R2C) systems, a family of systems that is currently fielded in support of OIF via the UUNS process. This research and development effort will integrate future vehicles, robots, and associated equipment to provide standoff detection, marking, and neutralization of Explosive Hazards such as mines and Improvised Explosive Devices (IEDs). Enhancements for R2C will provide capabilities that are not found in the current inventory to defeat explosive hazards and will protect Marines and equipment while conducting route and area clearance operations. The integration of the next generation of armored security and support vehicles, Vehicle Mounted Mine Detectors (VMMDs), specialized robots, and a new suite of detection, marking, and neutralization systems will enable maneuver commanders to make timely and informed decisions in avoiding or neutralizing explosive hazards that impede their missions. Multiple detection and marking capabilities will detect a broader spectrum of explosive hazards and achieve higher overall effectiveness rates, while standoff and remote-controlled detection, marking, and neutralization capabilities will enhance force protection and system survivability. The Assault Breacher Vehicle (ABV) is a tracked combat engineer vehicle that provides deliberate and in-stride breaching capability of minefields and complex obstacles to the Ground Combat Element (GCE) of the Marine Air Ground Task Force (MAGTF). The ABV combines crew protection and vehicle survivability with the speed and mobility to keep pace with the maneuver force. The ABV is assigned to and employed by the Combat Engineer Battalion (CEB) as part of a synchronized operation to rapidly breach obstacles and create lanes for the MAGTF. FY2010 / FY2011 funding will be used to develop a Counter Improvised Explosive Device (CIED) capability, integrate an Insensitive Munition (IM) compliant line charge and integrate mine roller capability for the system. Standoff CIED capability from under armor will provide a significant increase in system flexibility and lethality while improving crew protection. An IM compliant line charge will permit safe loading of the charge while on the transport vessel well deck, enabling the ABV to begin performing its mission immediately upon touching the beach. Thus, the crew will not be forced to load the line charge on the shore, possibly under fire. Integration of a mine roller will increase the ABVs proofing capability, thus increasing mine cl																																							
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2010 OCO</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>1.829</td> <td>0.572</td> <td>1.221</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> M1A1 Modifications: Continue joint participation and evaluation of prospective modifications including component enhancements, advanced fire control systems, survivability systems, safety modifications, mobility and others. <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th>FY 2010 OCO</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>0.000</td> <td>0.000</td> <td>0.474</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> M1A1 Survivability/Lethality Program: Product improvements to the M1A1 Main Battle Tank, including added Hull armor, external mounted secondary armament, counter sniper protection systems, and other critical product improvements essential to maintain combat dominance.										COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	Accomplishment/Effort Subtotal Cost	1.829	0.572	1.221	0.000	RDT&E Articles Qty					COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	Accomplishment/Effort Subtotal Cost	0.000	0.000	0.474	0.000	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO																																			
Accomplishment/Effort Subtotal Cost	1.829	0.572	1.221	0.000																																			
RDT&E Articles Qty																																							
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO																																			
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.474	0.000																																			
RDT&E Articles Qty																																							

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			May 2009	
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Spt	C2316 Combat Services Support Engineering Equipment		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.169	0.000
RDT&E Articles Qty				
Corrosion Prevention and Control: The useful life of Marine Corps assets will be extended through a comprehensive CPAC RDT&E program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	108.460	0.000	0.000	0.000
RDT&E Articles Qty				
MRAP Mine Resistant Ambush Protected Vehicles: MRAP vehicles increase the survivability and mobility of Joint Forces operating in hazardous fire areas. The expanded use of Improvised Explosive Devices (IED) of various types and the continual use of rocket propelled grenades (RPGs) and small arms fire (SAF) in the area of operation requires a vehicle capable of surviving the IED/RPG/SAF threat. Funding will provide ballistic/survivability objective and threshold testing and spiral upgrade development for these critical vehicles.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	3.780	0.000	0.000	0.000
RDT&E Articles Qty				
Joint Assault Bridge (JAB): Continue system integration with M1A1 tank chassis, BR90 bridge launcher, and MLC70 assault bridge. Continue Developmental testing.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	3.485	0.000
RDT&E Articles Qty				
Route Reconnaissance and Clearance (R2C): Begin integration of future family of vehicles with enhanced mobility and survivability for route clearance teams. Integrate comprehensive detection capabilities that detect and mark metallic, low metallic, and non-metallic explosive hazards; detect and mark explosive hazards at deeper depths; detect and mark explosive hazards at standoff forward of a vehicle; detect and mark explosive hazards at standoff to the sides of routes; remotely detect and mark explosive hazards in confined areas; clear routes of light debris (trash, boxes, etc.) which will enable Marines to visually scan and locate explosive hazards; identify anomalies and changes in the environment at standoff forward of a vehicle; and view explosive hazards through an optical viewing capability at standoff. Integrate current robots that can provide standoff detection, marking, and neutralization; be prepared to align with the Small Unmanned Ground Vehicle (SUGV) when that platform becomes mature. Develop enhanced standoff neutralization capabilities.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.000	0.000
RDT&E Articles Qty				
R2C: Program management and engineering support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 20010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.429	0.000
RDT&E Articles Qty				
R2C: Conduct Developmental Testing.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.528	0.000
RDT&E Articles Qty				
ABV: Three (3) identified system improvements / upgrades: Improve Counter Improvised Explosive Device (CIED) capability, integrate Insensitive Munitions (IM) compliant line charge, and integration of a vehicle width mine roller.				
(U) Total \$	114.069	0.572	10.306	0.000

EXHIBIT R-2a, RDT&E Project Justification					DATE:
					May 2009
APPROPRIATION/BUDGET ACTIVITY				PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev		0206624M Marine Corps Combat Services Spt		C2316 Combat Services Support Engineering Equipment	
(U) C. OTHER PROGRAM FUNDING SUMMARY:					
Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total
(U) PMC (BLI#206100) Mod Kits (M1A1 Mod	11.989	110.826	27.236	0.000	27.236
(U) PMC (BLI#206100) Safety Mods	80.523	1.653	0.000	0.000	0.000
(U) PMC (BLI#206100) M1A1 Survivability	0.000	0.000	0.637	0.000	0.637
(U) PMC (BLI#206100) Joint Assault Bridge	0.372	0.000	0.000	0.000	0.000
(U) PMC (BLI#209500) M1A1 FEP	14.674	14.663	0.000	0.000	0.000
(U) PMC (BLI#667000) CPAC	0.000	0.000	0.490	0.000	0.490
(U) PMC Line (BLI# 652000)EOD Sys-MRAP	1435.000	0.000	0.000	0.000	0.000
(U) PMC Line (BLI# 652000) EOD Sys- JAB	0.000	10.133	19.789	0.000	19.789
(U) PMC Line (BLI# 652000)EOD Sys- ABV	24.938	11.500	20.814	0.000	20.814
(U) PMC SPARES BLI# 700049 BA-7- ABV	1.521	0.559	0.000	0.000	0.000
(U) Related RDT&E:					
(U) PE 0206623M Marine Corps Ground Combat Supporting Arms Systems					
(U) PE 0603640M Marine Corps Advanced Technology Demonstration					
(U) PE 0604804A Logistics and Engineering Equip/Engr Development					
(U) PE 0206313M Marine Corps Communications					
(U) D. ACQUISITION STRATEGY:					
(U) The M1A1 MODIFICATION Program leverages Army developmental programs to create a system that more readily meets Marine Corps requirements. Modification includes safety, reliability, corrosion control, and technology up-upgrades to meet Marine Corps requirements. M1A1 Mods will exercise options on existing contracts of varying types to conduct research and analysis associated with the development of modifications and corrosion prevention to the M1A1 Tank and supporting platforms.					
(U) The M1A1 Survivability/Lethality Program will utilize Army initiatives and programs as much as possible, but will also involve unilateral USMC efforts to research, develop and acquire best value counter sniper protection systems. The program will use both in house contracting activities as well as other					
(U) CPAC Program The Program will execute the RDT&E Program through direct allocation of funding to the Naval Surface Warfare Center - Carderock Division Corrosion Research and Engineering Branch for comprehensive program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.					
(U) Joint Assault Bridge (JAB): Begin system integration with M1A1 tank chassis, BR90 bridge launcher, and MLC70 assault bridge to build first article JAB demonstrator. JAB is an armored vehicle used for rapidly employing, short-gap, assault crossing system, capable of spanning natural and manmade obstacles up to 60 feet (18.29) while under fire for up to Military Load Class (MLC) 70-ton vehicles. The JAB consists of a rebuilt and upgraded M1A1 Tank chassis with existing MLC70 scissors bridge and a modified BR90 launcher. The JAB will provide the MAGTF with the capability to conduct assault and tactical wet and dry gap crossings in all types of climate and terrain, including slopes, trenches and vertical steps. The M1A1 based launcher will provide the survivability, maintainability, and maneuverability required to keep pace with the maneuver force.					
(U) Government to Government (USMC-Army) system integration and manufacture. Anniston Army depot manufacturers the ABV, which consists of a re-manufactured M1A1 tank chassis/hull with a new turret designed to perform the combat engineer obstacle reduction and mine clearing mission. PM Engineer Systems performs system integration to include procurement of major subsystems via individual contracts with and delivers them to ANAD for integration. Competitive procurements resulted in selection of two major subsystems. These are the Front End Equipment (FEE) manufactured by Pearson Engineering, Ltd. and the Linear Demolition Charge system (LDCS) built by EG&G Albuquerque. Maximum use is made of existing GOTS / COTS item procurement to minimize program cost, performance and schedule risk.					

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C2316 Combat Services Support Engineering Equipment
(U) Route Reconnaissance and Clearance (R2C): Starting in FY10, procure a fleet of standardized Route Reconnaissance and Clearance systems based upon the successful route clearance teams operating in Iraq; use Capabilities Production Documents for current systems and leverage contracts already in place. Concurrently support a research and development effort to integrate future vehicles with enhanced mobility and survivability, a suite of improved detection and marking capabilities, and robots with greater detection, marking, and neutralization capabilities (U) E. MAJOR PERFORMERS: Aberdeen Proving Grounds, Aberdeen MD GDLS, Ottawa, Canada Picatinny Arsenal, PA FY09 Aberdeen Proving Grounds, Aberdeen MD FY10 NSWC Carderock, MD		

Exhibit R-3 Cost Analysis						DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME									
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Services Spt			C2316 Combat Services Support Engineering Equip									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
M1A1 Modifications	CPFF	Tank and Automotive Command (TACOM)		0.200	04/08	0.450	01/09	0.771	01/10						
M1A1 Modifications	FFP	Aberdeen Test Center		0.603	12/07	0.122	12/08	0.450	12/09						
M1A1 Modifications	FFP	Yuma Test Center		0.082	02/08										
M1A1 Modifications	FFP	CEOSS (MCSC)		0.107	06/08										
M1A1 Modifications	FFP	Fort Belvoir		0.200	08/08										
M1A1 Modifications	FFP	Benet Labs		0.250	08/08										
M1A1 Modifications	FFP	Picatinny Arsenal		0.414	05/08										
M1A1 SLES	CPFF	MCSC, Quantico, VA (Various)						0.474	12/09						
JAB Development	FFP	MCSC, Quantico, VA (Various)		2.225	Var										
ABV CIED Dev and integration	Var	Various	0.000					0.940	02/10						
R2C Sys Articles & Integration	Various	Various	0.000	0.000		0.000		3.485	11/09						
Subtotal Product Dev			0.000	4.081		0.572		6.120							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
Program Support (JAB)	RCP	MCSC, Quantico, VA (BAE Stafford)	0.855	0.520	11/07										
Program Support - R2C	RCP	EG&G, Stafford VA	0.000	0.000		0.000		1.000	11/09						
Subtotal Support			0.855	0.520		0.000		1.000							
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
CPAC	WR	Naval Surface Warfare Center - Carderock Divis	0.000	0.000		0.000		2.169	02/10						
JAB Test Support	VAR	MCOTEA, Quantico, VA		0.208	03/08										
JAB Test Support	MP	Aberdeen Proving Ground, Aberdeen, MD	0.612	0.800	11/07										
MRAP II Test Support	FFP	Ideal Innovations Inc. (I3), Arlington, VA		18.260	03/08										
MRAP II Test Support	FFP	BAE Systems, York, PA		11.178	03/08										
MRAP Test Support	MP	Aberdeen Test Center (ATC), Aberdeen, MD	26.089	12.627	03/08										
MRAP Test Support	MP	ARL, APG Maryland		18.046	04/08										
MRAP Test Support	MP	NAVSEA, Dahlgren, VA		3.660	04/08										
MRAP Test Support	MP	TACOM, Warren, MI		24.100	04/08										
MRAP Upgrades	FFP	Navistar Defense ,Warrenville, IL		6.878	07/08										
MRAP Upgrades	FFP	Force Protection Industries, Inc., Ladson, SC		10.902	04/08										
MRAP Upgrades	FFP	GDLS, Ottawa, Ontario		2.809	07/08										
ABV Test Support	MIPR	Aberdeen Proving Ground	0.000					0.610	02/10						
R2 Test Support	MIPR	Aberdeen Prvg Grnd, MD	0.000	0.000		0.000		0.407	11/09						
Subtotal T&E			26.701	109.468		0.000		3.186							
Total Cost			27.556	114.069		0.572		10.306							

Exhibit R-4/4a Schedule Profile Detail					DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDT&E, N /BA 7 Operational Sys			0206624M Marine Corps Combat Services Sp			C2316 Combat Services Support Engineering Equip			

ROUTE RECONNAISSANCE AND CLEARANCE									
Fiscal Year Quarter	08 I II III IV		09 I II III IV		10 I II III IV				
Spiral 1 Integration & DT									
Spiral 1 LRIP									
Spiral 1 LUE									
Spiral 1 IOT&E									
Spiral 1 Production & Fielding Decision									
Spiral 1 IOC/FOC									

Program Funding Summary

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
<u>(APPN, BLI #, NOMEN)</u>			
<u>(U) RDT&E</u>	0.000	0.000	4.914
<u>(U) PMC</u>	0.000	0.000	18.789

R2C SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010					
Spiral 1 Integration and Developmental Test			Q1-Q4					

[illegible]

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206624M Marine Corps Combat Services Support				PROJECT NUMBER AND NAME C2509 Motor Transportation Modification (MTM)					
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY10 OCO	FY10 Total					
Project Cost		1.790	0.601	2.131	0.000	2.131					
RDT&E Articles Qty											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
The Marine Corps Tactical Transportation Program manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintained in the Marine Corps for development and testing in support of fleet Service Life Extension Program (SLEP) initiatives, vehicle quality deficiency resolutions, safety initiatives, environmental/state transportation mandated vehicle changes, and system component refresh modifications efforts. Given transportation asset operational availability declines at a steady rate over time, SLEP, Fleet overhauls, and enhanced depot level modifications are essential in maintaining a viable transportation capability in the Marine Corps Operating Forces. Motor Transportation Modification (MTM) program line specifically develops Marine Corps unique improvements/modernizations to fielded transportation systems and supports monitoring the commercial automotive industrial base for technology insertions to increase Reliability Availability and Maintainability-Durability (RAM-D), reduce total ownership costs, resolve unplanned safety hazards, and monitor/implement emerging state and federal transportation/environmental regulations as required. This is a sustained program line for "level of effort" programs. Funding will focus on streamlined acquisitions of Commercial-Off-the-Shelf/Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPs, or rapid COTS/NDI fielding for the Fleet Operating Forces. High Mobility Multi-Wheeled Vehicle ECV (HMMWV-ECV) Armor program line is intended to allow the program office to investigate and test advanced armoring materials/concepts that would allow the HMMWV program office to quickly and continuously respond to the evolving threats. The Flatrack Refueling Capability (FRC) program will replace the M970 Semi-Trailer refueling in both the Force Service Support Group (FSSG) and the Marine Air Wings (MAWs) for ground refueling missions. Improved Recovery Vehicle (IRV) project includes improvements in all areas of the M88A2 Improved Recovery Vehicle. Continued funding is required to address obsolescence and support pre-planned product improvements. Additionally, funding will provide development activity by the OEM to address lessons learned and develop safety related ECPS to correct hazards noted during the standard day to day operation of the M88A2 Improved Recovery Vehicle											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		0.000		0.100		0.100		0.000		0.100	
RDT&E Articles Qty											
MTM: Program management and travel in support of Transportation Systems modifications, COTS/NDI modernizations.											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		0.576		0.501		0.496		0.000		0.496	
RDT&E Articles Qty											
MTM: Testing, integration, evaluation of Transportation Systems modifications.											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		1.214		0.000		0.000		0.000		0.000	
RDT&E Articles Qty											
MTM: Perform Armor Test and Evaluation for HMMWV FK4 in support of GWOT.											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		0.000		0.000		0.321		0.000		0.321	
RDT&E Articles Qty											
HMMWV: Test advanced Armoring Materials for the HMMWV											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		0.000		0.000		0.696		0.000		0.696	
RDT&E Articles Qty											
FRC: Developmental Test											
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO		FY 2010 Total	
Accomplishment/Effort Subtotal Cost		0.000		0.000		0.518		0.000		0.518	
RDT&E Articles Qty											
IRV: Continue joint participation with US Army on evaluation of prospective modifications including realibility, survivability and safety related vehicle improvements											
(U) Total \$		1.790		0.601		2.131		0.000		2.131	

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206624M Marine Corps Combat Services Support	PROJECT NUMBER AND NAME C2509 Motor Transportation Modification (MTM)

(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>FY2010 OCO</u>	<u>FY2010 Total</u>
(U) PMC Line (BLI# 523000) Motor T Mod	16.937	5.423	5.948	0.000	5.948
(U)PMC Line BLI# 504500 HMMWV	352.290	180.838	9.796	205.036	214.832
(U)PMC Line BLI# 509300 FRC	10.715	20.444	0.000	0.000	0.000
(U)PMC Line BLI# 509700 FRC	0.000	0.000	7.347	0.000	7.347
(U)PMC Line BLI# 206100 HRV	20.893	0.000	0.000	0.000	0.000
(U)PMC Line BLI# 206200 IRV	7.600	0.000	0.000	0.000	0.000

(U) Related RDT&E:

(U) PE 0206623M Marine Corps Ground Combat Supporting Arms Systems
 (U) PE 0603640M Marine Corps Advanced Technology Demonstration
 (U) PE 0604804A Logistics and Engineering Equip/Engr Development
 (U) PE 0206313M Marine Corps Communications

(U) D. ACQUISITION STRATEGY: The **MTM** program is a sustained program line for "level of effort" programs. Funding will focus on streamlined acquisitions of Commercial-Off-The-Shelf Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPS, or rapid COTS/NDI fielding for the Fleet Marine Forces (FMF).

(U) D. ACQUISITION STRATEGY: The **HMMWV** Program has procured armor in response to the threats faced in OIF and GWOT operations as needed. Since the initial procurement the HMMWV Program Office has aggressively sought out more advanced and effective armor solutions for the warfighter. This program line allows the HMMWV Program to continually seek the most advance materials/concepts that would allow the HMMWV Program Office to continuously respond to the evolving threats.

(U) D. ACQUISITION STRATEGY: The **Flatrack Refueling Capability (FRC)** program original acquisition strategy consisted of a joint procurement contract with the US Army. FY07 RDTE funds were used to procure two prototypes developed by DSR Systems Inc. After development and initial testing the Army decided not to procure the DSR system. Our revised acquisition strategy will only include US Marine Corps requirements. Further analysis has resulted in the new acquisition strategy focused to contract for Commercially available Items via a Small Business Set Aside procurement. These funds will procure one prototype for Developmental Testing and Field Users Evaluation (FUE). After successfully testing we will procure the AO.

(U) D. ACQUISITION STRATEGY: The **Improved Recovery Vehicle (IRV)** program also leverages Army developmental programs to create a system that more readily meets Marine Corps heavy recovery vehicle requirements. Improvements include safety, reliability, and technology upgrades.

(U) E. MAJOR PERFORMERS:

Navada Automotive Test Center
 Aberdeen Proving Grounds

Exhibit R-3 Cost Analysis						DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Service			C2509 Motor Transport Mod						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date	FY 10 Total Cost
Improved Recovery Veh	CPFF	TACOM	0.000	0.000		0.000		0.518	12/09			
			0.000	0.000								
Subtotal Product Dev			0.000	0.000		0.000		0.518		0.000		0.518
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date	FY 10 Total Cost
Development Test MTRV Trailer	RCP/FFP	CMDC, OK	0.000	0.263	01/08	0.000						
Development Test MTRV Trailer	WR	NSWC Carderock, MD	0.000	0.015	01/08	0.000						
Development Test MTRV Trailer	RCP/CPFF	NATC, NV	0.000	0.116	01/08	0.000						
Live Fire Testing LVS MAK	MIPR	APG, MD	0.000	0.028	01/08	0.100	01/09	0.000				
MTRV Development Testing	RC	NATC, NV	0.000	0.100	12/07	0.000		0.000				
MT Test	TBD	APG, MD	0.000	0.000		0.400	01/09	0.496	12/09			
HMMWV Test	RC	NATC, NV	0.000	1.268	09/08	0.000		0.321	12/09			
FRC Developmental Testing	TBD	TBD	0.000	0.000		0.000		0.696	10/09			
Subtotal Developmental Cost			0.000	1.790		0.500		1.513		0.000		1.513
Remarks: FY 10 and FY 11 show MT and HMMWV Test To Be Determine (TBD) efforts and cost are determined each year in accordance with the current readiness reports.												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date	FY 10 Total Cost
			0.000	0.000		0.000		0.000				
Subtotal Engineer & Tech Support			0.000	0.000		0.000		0.000		0.000		
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date	FY 10 Total Cost
			0.000	0.000		0.000		0.000				
			0.000	0.000		0.000		0.000				
			0.000	0.000		0.000		0.000				
Subtotal Operational Support			0.000	0.000		0.000		0.000		0.000		0.000
Remarks: FY 10 and FY 11 show OP Test To Be Determine (TBD) cost given are estimates, efforts and cost are determined each year in accordance with the current readiness reports.												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO Cost	FY 10 OCO Award Date	FY 10 Total Cost
Program Mangement and Travel	WR	MCSC	0.000	0.000		0.101	12/08	0.100	12/09			
			0.000	0.000		0.000		0.000				
Subtotal Management			0.000	0.000		0.101		0.100		0.000		0.100
Remarks:												
Total Cost			0.000	1.790		0.601		2.131		0.000		2.131

Exhibit R-4/4a
Page 17 of 24

Exhibit R-4-4a Project Schedule/Detail						May 2009		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N /BA 7 Operational Sys Dev	0206624M Marine Corps Combat Services Spt				C2509 Motor Transporation Modification (MTM)			

Flatrack Refueling Capability								
FRC SCHEDULE DETAIL	FY 2008	FY 2009	FY 2010	FY 2011				
Milestone B								
Contract Award			1Q					
Prototype Delivery			4Q					
DT				1Q				
FUE								

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 7 Operational Systems Development		0206624M Marine Corps Combat Services Spt			C2929 Testing Measuring Diagnostic Equip (TMDE) & SE			
COST (\$ in millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total		
Project Cost		3.525	1.981	1.494	0.000	1.494		
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
The Alternative Power Sources for Communications Equipment (APSCE) program is a suite of devices that provides the commander with the capability to use existing power to operate communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators. The Marine Corps Family of Automatic Test Systems (ATS) (formerly called Third Echelon Test Sets (TETS)), provides automatic test program capability for use by technicians both in Garrison and the forward edge of the battlefield; specifically in the area of interactive electronic tech manuals, condition/predictive based maintenance, embedded sensors and prognostics. The Marine Corps Automatic Test Equipment (MCATE) program provides development of sustainment technology for automatic test equipment used in organizational/intermediate maintenance facilities. The Autonomic Logistics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness. FY10 efforts will focus on system health application for additional platforms. Conduct developmental test and evaluation of platform level system health hardware and software.								
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.075	0.000	0.000	0.000			
RDT&E Articles Qty								
APSCE: Develop battery charging adaptor for the next generation tactical radio systems.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.661	1.170	0.000	0.000			
RDT&E Articles Qty								
ATS: Development of new technology testing applications in support of emerging weapon systems.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		0.638	0.537	1.243	0.000			
RDT&E Articles Qty								
MCATE: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.								
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO			
Accomplishment/Effort Subtotal Cost		2.151	0.274	0.251	0.000			
RDT&E Articles Qty								
AL: Weapon sensor data collection & processing for information conversion to provide situational awareness.								
(U) Total \$		3.525	1.981	1.494	0.000			
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2008	FY 2009	FY 2010	FY 2010 OCO				
(U) PMC Line (BLI# 418100) TETS	29.148	12.193		1.324				
(U) PMC Line (BLI# 418100) Autonomic Log	3.798	10.680	4.552					
(U) PMC Line (BLI# 418100) Calibration	1.961	2.102	9.935					
(U) Related RDT&E:								
(U) D. ACQUISITION STRATEGY:								
All work is being done in-house at Marine Corps Logistics Base (MCLB), Albany, GA., Naval Surface Warfare Center (NSWC) Corona and Seal Beach, CA. AL Competitive through Marine Corps Systems Command Contracts. All other work is being done in house and at Gov Engineering facilities.								
(U) E. MAJOR PERFORMERS: Automatic Test Equipment Program (ATEP), Albany, GA and Naval Surface Warfare Centers Corona and Seal Beach, CA.								

Exhibit R-3 Cost Analysis							DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME									
RDT&E, N /BA 7 Operational Systems Development			0206624M Marine Corps Combat Svs Spt				C2929 Testing Measuring Diagnostic Equip (TMDE) & Systems Engineering									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO						
Study & Hardware	FFP	MCSC, Quantico VA	2.427	0.664	08/08	0.506	05/09									
Eval Testing	RCP	MCSC, Quantico, VA	2.037	0.203	08/08											
Study and Hardware	RCP	NSWC, Corona, CA	1.457			0.300	05/09	0.983	12/09							
Program Support	FFP	MCSC, Quantico	0.048													
Subtotal Product Dev			5.969	0.867		0.806		0.983		0.000						
Remarks:																
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO						
Program Support	WR	ATEP, Ga	0.045	1.061	12/07											
Engineering Support	WR	NFESC, Port Hueneme, CA	0.595													
Travel	DTS	MCSC, Quantico VA	0.135													
Software Support	WR	Indian Head, MD	1.500													
Program Support	RCP	MCSC, Quantico VA	1.933	1.087	05/08	0.274	01/09	0.246	03/10							
Risk Study	RCP	ONR, Arlington, VA	0.452													
Study and Hardware	WR	NSWC, Corona CA	0.191													
Program Support	WR	MCSC, Quantico VA	2.138													
Engineering Support	MP	TACOM, Arsenal, NJ				0.307	03/09									
Software Support	WR	ATEP, GA	1.491	0.140	06/08	0.364	01/09	0.265	02/10							
Engineering Support	WR	ATEP, GA		0.200	01/08	0.230	01/09									
Subtotal Support			8.480	2.488		1.175		0.511		0.000						
Remarks:																
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO						
Eval Testing	RCP	MCOTEA, Quantico, VA	0.479	0.095	04/08											
Eval Testing	WR	NSWC, Carderock, MD	0.126													
T&E of Hardware	WR	NSWC, Carderock, MD	0.111	0.075	11/08											
Subtotal T&E			0.716	0.170		0.000		0.000		0.000						
Remarks:																
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	FY 10 OCO						
Subtotal Management			0.000	0.000		0.000		0.000		0.000						
Remarks:																
Total Cost			15.165	3.525		1.981		1.494		0.000						

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206624M Marine Corps Combat Services Spt				PROJECT NUMBER AND NAME C9872 Autonomic Logistics													
COST (\$ in millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total													
Project Cost		0.000	2.325	0.000	0.000	0.000													
RDT&E Articles Qty																			
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project C9872 - Autonomic Logistics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness.																			
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM R&D efforts to explore collection & processing of system health data from weapon systems sensor and digital data buss structures for system health information. Work includes diagnostic and prognostic algorithms.																			
COST (\$ in Millions)		FY 2008		FY 2009		FY 2010		FY 2010 OCO											
Accomplishment/Effort Subtotal Cost		0.000		2.325		0.000		0.000											
RDT&E Articles Qty																			
Autonomic Logistics C9872: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.																			
(U) Total \$		0.000		2.325		0.000		0.000											
(U) C. OTHER PROGRAM FUNDING SUMMARY: <table border="0"> <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>FY10 OCO</u></th> </tr> </thead> <tbody> <tr> <td>(U) PMC Line (BLI# 418100) Autonomic Log</td> <td>3.798</td> <td>10.680</td> <td>4.552</td> <td>0.000</td> </tr> </tbody> </table>										<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY10 OCO</u>	(U) PMC Line (BLI# 418100) Autonomic Log	3.798	10.680	4.552	0.000
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY10 OCO</u>															
(U) PMC Line (BLI# 418100) Autonomic Log	3.798	10.680	4.552	0.000															
(U) Related RDT&E:																			
(U) D. ACQUISITION STRATEGY:																			
(U) E. MAJOR PERFORMERS:																			

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009											
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206624M Marine Corps Combat Services Support				PROJECT NUMBER AND NAME C9872 Autonomic Logistics											
COST (\$ in millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total											
Project Cost		0.000	2.331	0.000	0.000	0.000											
RDT&E Articles Qty																	
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project C9872 - The Autonomic Logistics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness.																	
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM R&D efforts to explore collection & processing of system health data from weapon systems sensor and digital data buss structures for system health information. Work includes diagnostic and prognostic algorithms.																	
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO												
Accomplishment/Effort Subtotal Cost		0.000	2.325	0.000	0.000												
RDT&E Articles Qty																	
Autonomic Logistics C9872: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.																	
(U) Total \$		0.000	2.325	0.000	0.000												
(U) C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2008</u></th> <th style="text-align: center;"><u>FY 2009</u></th> <th style="text-align: center;"><u>FY 2010</u></th> </tr> <tr> <td>(U) PMC Line (BLI# 418100) Autonomic Log</td> <td style="text-align: center;">3.798</td> <td style="text-align: center;">10.680</td> <td style="text-align: center;">4.552</td> </tr> </table>										<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	(U) PMC Line (BLI# 418100) Autonomic Log	3.798	10.680	4.552
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>														
(U) PMC Line (BLI# 418100) Autonomic Log	3.798	10.680	4.552														
(U) Related RDT&E: (U) D. ACQUISITION STRATEGY: (U) E. MAJOR PERFORMERS:																	

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-7 Operational Sys Dev		0206624M Marine Corps Combat Services Support				C9C90 Medium Tactical Vehicle Replacement (MTVR)			
COST (\$ in Millions)		FY 2008	FY 2009	FY2010	FY2010 OCO	FY 2010 TOT			
Project Cost		0.000	0.000	1.626	0.000	1.626			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
The MTVR Modification program line funds numerous and very important modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, beneficial suggestions and other issues that affect vehicle reliability, availability, maintainability and readiness. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management and it allows the program office the flexibility to develop and implement improvements as need to respond to the evolving needs of the Marine Corps.									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.410	0.000				
RDT&E Articles Qty									
MTVR: Engineering Change Proposals									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.215	0.000				
RDT&E Articles Qty									
MTVR: Safety Initiatives									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.416	0.000				
RDT&E Articles Qty									
MTVR: Component Upgrades, Test on Prototypes									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.370	0.000				
RDT&E Articles Qty									
MTVR: Engine/Parts Obsolescence									
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY2010 OCO				
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.215	0.000				
RDT&E Articles Qty									
MTVR: Product Quality Deficiencies									
(U) Total \$		0.000	0.000	1.626	0.000				
(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>FY 2010 OCO</u>					
(U)PMC Line BLI# 508800 MTVR	78.783	30.832	10.792	131.044					
(U) Related RDT&E:									
N/A									
(U) D. ACQUISITION STRATEGY: The strategy for the MTVR Modification initiative is to be proactive in our approach. This will aid in the prevention of parts obsolescence, potential safety concerns, and support the needs of the Marine Corps. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management and it allows the program office the flexibility to develop and implement improvements as required to evolving needs. The anticipated life of the MTVR was partially based on the vehicle being at curb weight a large percentage of its life time. Due to the addition of the MTVR Armor System, various other components and the current high optempo, it is anticipated that the MTVR life expectancy will be lessened. It is important to ensure MTVR sustainment in any and all									
(U) E. MAJOR PERFORMERS:									

Exhibit R-3 Cost Analysis						DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Services			C9C90 Medium Tactical Vehicle Replacement								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	C9C90 Me FY 10 Cost	FY 10 Award Date					
			0.000	0.000		0.000		0.000						
			0.000	0.000										
Subtotal Product Dev			0.000	0.000		0.000		0.000						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
			0.000	0.000		0.000		0.000						
			0.000	0.000				0.000						
Component Upgrade, Prototype Testing	RC	NATC, NV	0.000	0.000				0.416	TBD					
Subtotal Test and Evaluation			0.000	0.000		0.000		0.416						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
ECPs	RC	Oshkosh Trucking, WI	0.000	0.000		0.000		0.410	TBD					
Engines/Part Obsolescence	RC	Oshkosh Trucking, WI						0.370	TBD					
Product Quality Deficiencies	RC	Oshkosh Trucking, WI						0.215	TBD					
Safety Initiatives	RC	Oshkosh Trucking, WI	0.000	0.000		0.000		0.215	TBD					
Subtotal Engineering Support Costs			0.000	0.000		0.000		1.210						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
			0.000	0.000		0.000		0.000						
			0.000	0.000		0.000		0.000						
			0.000	0.000		0.000		0.000						
Subtotal Operational Support			0.000	0.000		0.000		0.000						
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
			0.000	0.000		0.000		0.000						
			0.000	0.000		0.000		0.000						
Subtotal			0.000	0.000		0.000		0.000						
Remarks:														
Total Cost			0.000	0.000		0.000		1.626						

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: September 2008				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.						
RDT&E, N /BA-7 Operational Systems Development		0206625M USMC Intelligence / Electronic Warfare Systems (MIP)						
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
Total PE Cost	0.000	0.000	30.167	0.000	30.167			
C2272 Intelligence C2 Systems	0.000	0.000	30.167	0.000	30.167			
Quantity of RDT&E Articles								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
This Program Element (PE) includes funds for Intelligence Command and Control (C2) which supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.								
Notes:								
Funds for Project C2272 were realigned to PE 0206625M in FY10.								
B. PROGRAM CHANGE SUMMARY								
	FY2008	FY2009	FY2010					
Funding:								
FY 2009 President's Budget:	0.000	0.000	0.000					
FY 2010 President's Budget:	0.000	0.000	30.167					
Total Adjustments:	0.000	0.000	30.167					
Summary of Adjustments:								
a. Program Adjustments	0.000	0.000	30.601					
b. Rate/Misc Adjustments	0.000	0.000	-0.434					
Subtotal	0.000	0.000	30.167					

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-7 Operational Sys Dev		0206625M USMC Intelligence / Electronic Warfare Systems (MIP)			C2272 Intelligence C2 Systems				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 Total			
Project Cost		0.000	0.000	30.167	0.000	30.167			
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination. Global Command and Control System Integrated Imagery and Intelligence (GCCS I3) is a joint program that is designed to enhance the operational Commander's situation awareness and track management through the use of a standard set of integrated, linked tools and services that maximize commonality and interoperability across the tactical theater, and national communities. GCCS-I3 operates in joint and service specific battlespace and is interoperable, transportable, and compliant with the DoD mandated Common Operating Environment (COE). Distributed Common Ground/Surface System-Marine Corps (DCGS - MC) - formerly known as Distributed Common Ground/Surface-Integration (DCGS-I), is a collection of Service Systems that will contribute to joint and combined warfighter needs for ISR support, with the Global Information Grid (GIG) providing unconstrained communications circa 2010 to support the Department of Defense (DoD) Intelligence, Surveillance and Reconnaissance (ISR) Enterprise end-state. The DCGS Integrated Backbone (DIB) is the architecture that will tie the Service DCGS systems together into one Family of Systems (FOS). The DIB will provide the tools, standards, architecture, and documentation for the DCGS community to achieve a Multi-Intelligence (Multi-INT) (e.g. Imagery Intelligence (IMINT), Signal Intelligence (SIGINT), Measurement/Measuring and Signature Intelligence (MASINT), Counterintelligence/Human Intelligence (CI/HUMINT)), network centric environment with the interoperability to afford individual nodes' access to the information needed to execute their respective missions to include Irregular Warfare. The Marine Corps will conduct DIB integration research and development to meet a congressionally mandated implementation deadline. Trojan Spirit II - is an SHF multi-band satellite communications terminal, available in either HMMWV-mounted or transit case configuration, that provides dedicated tactical communications capability at the TS/SCI and Secret Collateral levels to USMC intelligence units. TROJAN SPIRIT terminals provide connectivity into JWICSSs, NSANET and SIPRNET via the TROJAN Network Control Center. Technical Control Analysis Center (TCAC). The primary mission of the TCAC is to provide the Radio Battalions (RadBn) with an automated Signals Intelligence (SIGINT) processing, analysis, and reporting capability. The TCAC system is designed to receive collected intelligence from tactical, theater and National level producers and provide a multi-source fused intelligence production capability to support the Marine Air Ground Task Force (MAGTF) commander via the Intelligence Analysis System (IAS), as well as the National Security Agency (NSA) and other National consumers. Joint Surveillance Target Attack Radar (JSTARS) connectivity program will research and integrate a client software connectivity solution which will allow the JSTARS Moving Target Indicator (MTI), Fixed Target Indication (FTI) and Synthetic Aperture Radar (SAR) data to be passed from the JSTARS Common Ground Station (CGS) to lower echelons within the MAGTF. Additionally, the Marine Corps will continue future MTI, CDL and MTI sensor capabilities research and development. Tactical Remote Sensor System (TRSS-PIP) - TRSS is a suite of hand emplaced and air-delivered unattended sensors, ground relays, and sensor monitoring stations, which are used by the Intelligence Battalions, Ground Sensor Platoons (GSPs). It provides the MEF/MAGTF Commander with an organic capability to conduct unattended, all-weather, semi-covert, ground surveillance of distant areas within his Area of Operations (AO). Through the use of seismic, acoustic, magnetic, infra-red, and imaging sensors, this suite provides an additional surveillance capability of personnel and/or vehicular activity, during tactical pre-assault, assault and post assault operations. TRSS covers gaps in the overall intelligence collection effort and reduces the requirement to employ Marines behind enemy lines for extended periods of time. Team Portable Collection System - Multi-Platform Capable (TPCS-MPC) - is a semi-automated, man/team portable system providing intercept, collection, direction-finding, reporting and collection management to MAGTF commander. It provides special signals intercept, and DF capability for each system and is modular, lightweight and team transportable. The next upgrades will be the multi-platform capability and will allow the system to exploit information from more technically advanced target sets and will provide the MAGTF commander with a modular and scalable carry on/carry off suite of equipment.									

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
Wide Field of View Persistent Surveillance (WVPS) (formerly Angel Fire) capability that supports persistent Intelligence, Surveillance and Reconnaissance (ISR), Improvised Explosive Device (IED) mitigation, and actionable intelligence in urban and other operations (e.g. disaster relief, security, etc). It delivers broad area, near real time, geo-registered imagery down to the tactical level of execution. Consisting of airborne and ground components such as the Airborne payload consists of an imager sensor (currently Electro-Optical (EO), on-board processors, and an air-to-ground communication link. Ground distribution network consist of the ground receive station, servers, storage and viewer client stations. AF is hosted on manned platforms, currently the King Air A-90p pilots fly the plane while the sensors can be controlled from the ground through autonomous software. The USMC objective EFVPS system will reside on an UAS. MAGTF Secondary Imagery Dissemination System (MSIDS) is the only ground prospective Family of Systems (FoS) that provides organic tactical digital imagery collection, transmission and receiving capability to the MAGTF Commander. MSIDS is comprised of components necessary to enable Marines to capture, manipulate, annotate, transmit or receive images in Near Real Time (NRT), internally with subordinate commands that are widely separated throughout the area of operations and externally with higher adjacent commands. MSIDS capability resides with the MAGTF G/S-2 sections and Ground Reconnaissance Battalions, Light Armored Reconnaissance Battalions, Infantry Battalion Scout Sniper Platoons and Marine Special Operations Command. The MSIDS FoS extends the digital imaging capability to all echelons within the MEF, down to and including battalions and squadrons. Captured images are capable of being forwarded throughout the MAGTF through the use of Base Station Workstation/Communication Interface (BW/CI), Out Station Workstation/Communication Interface (OW/CI) or existing C4ISR architecture. MSIDS FoS is currently employed in every location world-wide where the Marine Corps participates in military operations to include Irregular Warfare. MSIDS is currently, or has recently, been employed in Iraq, Kuwait, Afghanistan, Haiti, Philippines, and Horn of Africa. Intelligence Equipment Readiness (IER) - The IER provides a responsive capability to alleviate Marine Corps intelligence systems shortfalls created by the rapidly evolving missions, threats and command relationships associated with the Overseas Contingencies Operations (OCO). The program provides for rapid technology insertion, as well as quick reaction training and logistics, to meeting the time sensitive intelligence infrastructure requirements of Marine Corps Operatng Forces and the theater and service intelligence organizations supporting those forces. IER rapidly mitigates intelligence infrastructure shortfalls through exploitation of COTS, GOTS and Non-Developmental Item technology to the greatest extent practical. This effort also centralizes support for Marine Corps intelligence infrastructure items and systems that are not separately identified within the program funding lines. IER addresses requirements that span the entire Marine Corps intelligence systems architecture. Intelligence Analysis Systems (IAS) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence; it ensures that tactical intelligence is tailored to meet specific mission requirements to include Irregular Warfare. Radio Reconnaissance Equipment Program (RREP) provides the Radio Battalions, Radio Reconnaissance Platoons (RRP) and the Marine Corps Forces Special Operations Command (MARSOC) Direct Support Teams with mission unique Signals Intelligence/Ground Electronic Warfare (SIGINT/EW) Equipment suites. The latest suite of equipment, the SIGINT Suite 3 (SS-3) is comprised of technology and equipment necessary to prosecute advanced wireless signals. The RRP Marines are trained and equipped to support the full spectrum of Marine Expeditionary Unit Special Operations Capable (MEU SOC) mission profiles as well as provide real time, imbedded support to any special operations scenario. This provides the supported commander greater flexibility in employing his SIGINT assets when the use of conventional Radio Battalion assets are not feasible. RREP is currently maintaining the SS-3 using a spiral development approach that inserts the latest technology into the suite as it becomes mature and MARSOC. This enables the SS-3 to remain a current platform against emerging threats. Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) provides the MAGTF with integrated, standardized, and interoperable information (automated data processing), communication, and specialized equipment to conduct the full spectrum of tactical CI/Force Protection to include Irregular Warfare, HUMINT, and technical collection operations in accordance with (IAW) applicable national oversight directives. CIHEP provides each CI/HUMINT Company (CIHCo) with a suite of state-of-the-market equipment comprised of commercial-off-the-shelf, government-off-the-shelf, and non-developmental items (COTS/GOTS/NDI). It integrates audio, video, imagery, communications, technical surveillance and computer equipment into lightweight, modular, scalable, deployable packages. CIHEP enhances the capability to collect, receive, process, and disseminate CI/HUMINT information from overt, sensitive, technical, tactical, and Force Protection, in the service, joint, and combined forces area of operations. Intelligence Broadcast Receiver (IBR) provides Marine tactical commanders access to National level Near Real-Time intelligence data provided over the Integrated Broadcast Service. IBR is employed across the MAGTF echelons through the following Host Systems; Intelligence Analysis System; Tactical Air Operations Center; Technical Control and Analysis Center; Tactical Air Command Center; Joint STARS Common Ground Station; Tactical Electronic Reconnaissance Processing and Evaluation System and Common Air Command and Control Systems and Joint Stars Work Station. Tactical Exploitation of National Capabilities (TENCAP) is a program designed to enhance the ability of tactical Marine Corps forces to exploit the capabilities of national intelligence-gathering systems. Congressionally directed, it requires close liaison with the intelligence community and involves complex and highly-sensitive activities.		

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-7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.477	0.000
RDT&E Articles Qty				
GCCS-I3: Program Support, Integration and Software Engineering				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.761	0.000
RDT&E Articles Qty				
GCCS-I3: Software Engineering Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.109	0.000
RDT&E Articles Qty				
GCCS-I3: Engineering/Acq Logistics Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.379	0.000
RDT&E Articles Qty				
GCCS-I3: Program Testing				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.299	0.000
RDT&E Articles Qty				
DCGS-MC - USMC DCGS Testing and Evaluation Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.998	0.000
RDT&E Articles Qty				
DCGS-MC - Research and Development and Integration Efforts.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.007	0.000
RDT&E Articles Qty				
DCGS-MC - Engineering and Technical Services.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	11.875	0.000
RDT&E Articles Qty				
DCGS-MC - Design and Development of Hardware and Enterprise Services and test and development support to include Studies, analysis and evaluation.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.414	0.000
RDT&E Articles Qty				
TROJAN SPIRIT: Engineering and Technical Support.				

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-7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.836	0.000
RDT&E Articles Qty				
TCAC: Software development, integration and testing for TCAC with COE 4.X and future releases.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.070	0.000
RDT&E Articles Qty				
TCAC: Program Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.110	0.000
RDT&E Articles Qty				
JSTARS: Engineering and Technical, Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.122	0.000
RDT&E Articles Qty				
JSTARS: Future MTI capability into JSTARS ground elements.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.546	0.000
RDT&E Articles Qty				
TRSS-PIP: Software development of HHPM and Low Cost Imager; Improved Air Delivered Sensor (IADS) II; Encoder Transmitter Unit (ETU); Windows 2000 migration; and RSMS ver 3.1 field verification/version 4.1 and 4.2.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.020	0.000
RDT&E Articles Qty				
TRSS-PIP: Management support - MCSC				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.270	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of P3I Sensors and other Sensors Upgrades				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.200	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of Imaging Processor Board II				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.482	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of Urban Sensor Sets				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.151	0.000
RDT&E Articles Qty				
TRSS-PIP: Support IOT&E and Increment II efforts.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS-MPC: EDM Design.				

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-7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.552	0.000
RDT&E Articles Qty				
TPCS-MPC: System development.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.450	0.000
RDT&E Articles Qty				
TPCS-MPC: Training development and test support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.530	0.000
RDT&E Articles Qty				
TPCS-MPC: Program support and management.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.493	0.000
RDT&E Articles Qty				
WFVPS: Engineering and Technical Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.267	0.000
RDT&E Articles Qty				
MSIDS: Program Management and technical support for product development of program hardware and software refresh.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.200	0.000
RDT&E Articles Qty				
IER: Program Management and Technical Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.766	0.000
RDT&E Articles Qty				
IAS MOD KIT: Software Engineering and Management Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.645	0.000
RDT&E Articles Qty				
IAS MOD KIT: Program, Logistic and Admin Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.819	0.000
RDT&E Articles Qty				
RREP - Project Management and Technical support for Research and Testing of New technology for system refreshes.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.039	0.000
RDT&E Articles Qty				
CIHEP: Engineering, Integration and Technical support for technical refresh and update of program hardware/software upgrades.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.091	0.000
RDT&E Articles Qty				
CIHEP: Program Management Support for the technical refresh and update of program hardware/software upgrades.				

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-7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.495	0.000
RDT&E Articles Qty				
IBR: Engineering and technical service support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.150	0.000
RDT&E Articles Qty				
IBR: Contract and Program Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	3.389	0.000
RDT&E Articles Qty				
TENCAP: Program support and management; evaluate national intelligence data systems for MAGTF applicability.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.155	0.000
RDT&E Articles Qty				
TENCAP: Technical assessments of emerging national data dissemination capabilities.				
(U) Total \$	0.000	0.000	30.167	0.000
(U) C. OTHER PROGRAM FUNDING SUMMARY:				
Line Item No. & Name	FY 2010	FY 2010 OCO	FY 2010 Total	
PMC BLI 474700 DCGS DCGS	0.535	5.404	5.939	
PMC BLI 474700 Intel Support Eq TROJAN SPIRIT	0.107	0.000	0.107	
PMC BLI 474700 Mod Kit TCAC	0.916	0.168	1.084	
PMC BLI 474700 Mod Kit JSTARS	0.505	0.429	0.934	
PMC BLI 474700 Intel Support Eq TRSS-PIP	5.403	0.000	5.403	
PMC BLI 474700 Intel Support Eq TPCS	0.858	0.000	0.858	
PMC BLI 474700 Intel Support Eq WFVPS	4.311	0.000	4.311	
PMC BLI 474700 Intel Support Eq MSIDS	4.263	2.866	7.129	
PMC BLI 465200 Mod Kit IER	4.179	0.000	4.179	
PMC BLI 474700 Mod Kits IAS MOD Kit	2.670	1.864	4.534	
PMC BLI 474700 Intel Support Eq RREP	1.081	0.000	1.081	
PMC BLI 474700 Intel Support Eq CIHEP	6.558	0.000	6.558	
PMC BLI 474700 Intel Support Eq IBR	3.406	3.400	6.806	

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems	
(U) Related RDT&E: (U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II) (U) PE 0604270A (Intelligence and Electronic Warfare Common Sensor (IEWCS), TACJAM-A) (U) PE 0305885G (Tactical Cryptologic Program) (U) PE 0603730A (Tactical Surveillance System - Advanced Development), Army TENCAP, Project D560 (U) PE 0603766A (Tactical Electronic Surveillance System - Advanced Development), Army TENCAP, Project D907 (U) PE 0604740A (Tactical Surveillance System - Engineering Development), OSD TENCAP, Project D662 (U) PE 0902398M (United States Special Operations Command), Chariot Program (U) PE 0605867N (SEW Surveillance/Reconnaissance Support), Project Z1034 (D) ACQUISITION STRATEGY: (U) ACQUISITION STRATEGY GCCS-I3: This program promotes and ensures interoperability among USMC Intelligence Systems. Engineering and technical support is provided to PM Intel systems integration efforts for incorporation of the COE and GCCS-I3 software baseline. An Intelligence Integration Facility has been established at the Integrated Team Solution Facility. As such, this facility will be used as the hub for the entire integration effort of the GCCS-I3 initiative. (U) ACQUISITION STRATEGY DCGS-MC: The Marine Corps DCGS-MC project officer will leverage off of the USAF DCGS 10.2 Research, Development Test and Evaluation (RDT&E) effort and focus on the development of the DCGS Integrated Backbone (DIB) for the DCGS-MC. Additionally, the DCGS-MC will leverage off of MAGTF Legacy system DIB compliancy efforts. (U) ACQUISITION STRATEGY TROJAN SPIRIT: Procure and continuously improve USMC TROJAN SPIRIT systems to meet evolving Marine Corps operational needs while maintaining interoperability with the Army TROJAN Network and maintaining, as closely as practical, configuration common to the Army TROJAN SPIRIT systems. (U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements. (U) ACQUISITION STRATEGY JSTARS: JSTARS will utilize ongoing Army and Navy JSTARS contracts for development of client software, future CDL, MTI and MTI Sensor capabilities. IPv6 research was conducted in conjunction with other services and agencies. Incremental Development Plan (IDP) efforts will continue to the JSTARS software baseline. SPAWAR-Charleston, SC will oversee the integration and testing of these development efforts, ensuring USMC Command, Control, Communications, Computers and Intelligence (C4I) architecture capability. On-site contractor logistical support will be provided through the General Dynamics Intelligence, Information Command and Control, Equipment and Enhancements (ICE2) Equipment Logistics Support Contract out of Warner-Robbins Air Force Base, GA. Post Deployment Software Support (PDSS) will be provided through the Communications-Electronics Command (CECOM), Ft Monmouth, NJ and SPAWAR-Charleston, SC. Surveillance Control Data Link (SCDL) antenna and Ground Data Terminal (GDT) support will be through Cubic Defense Systems, San Diego, CA, via a General Dynamics support contract. (U) ACQUISITION STRATEGY TRSS: The TRSS are typically Non-Developmental Item (NDI) integration efforts, making maximum use of the efforts of hardware and software initially developed by other DoD organizations and programs. The initial phases of each Increments are cost-plus fixed-fee efforts, while the production phase, which encompasses the production, fielding, training and initial support of the systems, are firm-fixed price efforts. (U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities.			

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
(U) ACQUISITION STRATEGY TPC: The TPC will refresh and upgrade the existing TPC equipment as technology advances. As new technology emerges, the current fielded systems will need incremental hardware and software refreshes to sustain operational requirements and to meet the ORD requirement of compliance with the NGA US Imagery and Geospatial Information System. The TPC program uses existing Government contracts for hardware/software development and integration. Full-time contractor support is provided through the Commercial Enterprise Omnibus Support Services (CEOss) contract. Additional full time engineering and integration support is provided by Northrop Grumman Information Technology TASC through the Information Technology Omnibus Procurement II (ITOP II) contract under the auspices of the MCSC Information Technology Modernization 2000 (ITM2K) Project Office. Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements. (U) ACQUISITION STRATEGY TEG: The TEG Program Office leverages the advantages of its multi-service common software baseline and inherent Joint service interoperability. Development, integration, interoperability, security certification and accreditation and acquisition is divided between three prime contractors: Northrop Grumman Electronic Systems, Baltimore, MD (NGB) (through a classified contract); Space and Naval Warfare Systems Center, Charleston, SC (SSCC), and MTC Services Corporation. An incremental refresh is currently ongoing for the TEG Main. (U) ACQUISITION STRATEGY WFPS: MCCDC maintains sponsorship of the Angel Fire UUNS. Marine Corps funds Air Force Research Lab to support the United States Air Force (USAF) in the development of subsequent sensor spirals as a technology demonstration supporting Marines operating in the CENTCOM AOR. In keeping with the Program Decision Memorandum (PDM) of November 2007. Development, integration, interoperability and testing are divided between AFRL, Los Alamos National Laboratory (LANL) and the NRL. (U) ACQUISITION STRATEGY MSIDS: Full Operational Capability (FOC) in 2QTR FY03. Subsequent "increment refreshes" are under way in order to keep the systems from becoming unreliable and unsupportable. The increment refresh approach will effectively leverage technological advances. Each increment of upgrades will refresh 1/3 of the fielded components. (U) ACQUISITION STRATEGY IER: This program seeks to support a wide range of technology solutions based on the requests received from the Operating Forces and/or PM Intelligence Program of Record. The request must require solution evaluation beyond merely acquisition to be recommended as an Intelligence Systems Readiness (ISR) candidate. Each request will be validated by the ISR team and approved by the Project Officer and PM Intel before solution evaluation begins. The ISR program will use COTS/GOTS/NDI solutions to the greatest extent possible. (U) ACQUISITION STRATEGY IAS: The IAS program uses existing Government contracts for hardware and software development and integration. The system is comprised primarily of Commercial Off-the-Shelf (COTS) and Government Off-The-Shelf (GOTS) equipment. The IAS FoS utilizes an evolutionary strategy to ensure periodic incorporation of state-of-the-art technology that meets both current and future Marine Corps intelligence requirements while maintaining system readiness and reliability. (U) ACQUISITION STRATEGY RREP: Research, test and integrate new technology will keep pace with the evolving Marine Corps operational needs. Acquisition will maximize the use of NDI/COTS hardware and software to ensure the supporting units maintain cutting edge technology and collection capabilities. (U) ACQUISITION STRATEGY CIHEP: CIHEP will use the Integrated Team Solutions Facility for hardware and software upgrades as necessary. CIHEP will coordinate acquisition of communications equipment with the Program Manager Communications section for planned upgrades to the Communications Module. SPAWAR, Charleston will be utilized for the technology dictates. (U) ACQUISITION STRATEGY IBR: In house contracts will be used to conduct engineering studies and test and evaluation activities associated with the Marine Corps implementation of the Integrated Broadcast Service, Common Message Format, ENTR integration and test and evaluation. (U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.		

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems	
(U) E. MAJOR PERFORMERS:			
GLOBAL COMMAND AND CONTROL SYSTEM INTEGRATED IMAGERY AND INTELLIGENCE (GCCS I3)			
FY 10 Navy Systems Management Activity (NSMA),MTC Stafford, VA. Continue to provide funds for Engineering and Program support services. SPAWAR, Charleston, SC. Continue development, upgrades, integration, research and analysis for system refresh.			
DCGS-I			
FY10 NSMA, MTC, Stafford, VA Integrated Teams Solution Facility, Stafford, VA Continue to provide Engineering & technical services, studies, analysis and evaluation for DIB integration, and integration support.			
TROJAN SPIRIT			
FY10 CECOM, Ft. Monmouth, NJ - Provide funds for IPV6 and Black Transport Layer Upgrades to maintain capability			
TACTICAL CONTROL AND ANALYSIS CENTER (TCAC)			
FY 10 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA) (MTC, Stafford, VA) Continue to provide software development, integration and testing for future releases. SPAWAR, CHARLESTON, S.C. Continue to provide funds Systems integration Support. MCOTEA. Continue to provided testing support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Continue to provide funds for Engineering Support.			
TACTICAL REMOTE SENSOR SYSTEM (TRSS)			
FY10 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Provide for engineering and integration support. MCOTEA, Quantico, VA. Provide funding for engineering specialist for testing and related support SPAWAR, Charleston, SC. Provide funding for Urban Sensor Set Research			
TEAM PORTABLE COLLECTION SYSTEM - MULTI-PLATFORM CAPABLE (TPCS-MPC)			
FY10 SPAWAR, CHARLESTON, S.C. Continue to provide funds for prime systems integrator for TPCS-MPC EDM. NSMA (MTC), Stafford, VA, Continue to provide funds for program management and engineering support services MCOTEA. Provided Testing Support.			
JOINT SURVEILLANCE TARGET ATTACK RADAR (JSTARS)			
FY10 SPAWAR, Charleston, S.C. Continue to provide funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities research and development. NSMA, VA, Continue to provide engineering and technical support. Army CECOM, Ft. Monmouth NJ will provide future CDL capabilities research and development.			
MANPACK SIDS (MP SIDS)			
FY10 Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for engineering and program management support.			
INTELLIGENCE SYSTEM READINESS (ISR)			
FY10 SPAWAR, CHARLESTON, S.C. Continue to provide funds for engineering, testing, evaluation and training support.			
INTELLIGENCE ANALYSIS SYSTEM (IAS)			
FY10 SPAWAR, CHARLESTON, S.C. Continue to provide funds for development, upgrades, integration, research and analysis of hardware for system refresh. Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for Integration and hardware upgrade study.			
INTELLIGENCE BROADCAST RECEIVER (IBR)			
FY 10 NSMA, MTC, Stafford, VA - Continue to provide for Pgm Mgmt support for tech refresh and upgrade of program hardware and software.FY10			
COUNTERINTELLIGENCE AND HUMAN INTELLIGENCE (HUMINT) EQUIPMENT PROGRAM (CIHEP)			
FY10 NSMA, MTC, Stafford, VA - Continue to provide for Pgm Mgmt support for tech refresh and upgrade of program hardware and software. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Continue to provide funds for Program and technical support.			

UNCLASSIFIED

Exhibit R-3 Cost Analysis				DATE: May 2009											
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT					PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev		0206625M USMC Intelligence / Electronic Warfare Systems (MIP)					C2272 Intelligence C2 Systems								
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TENCAP	Various	L3 Communications Stafford, VA	25.055					3.544	12/09						
TPCS	RCP	VAR	4.793					0.802	03/10						
TRSS-PIP	RCP	VAR	2.668					2.298	12/09						
JSTARS	WR/MPR	SPAWAR Charleston, SC	0.000					0.110	12/09						
TROJAN SPIRIT	MIPR	CECOM Ft Monmouth, NJ	0.000					0.414	12/09						
DCGSI	RCP	VAR	8.101					13.258	11/09						
RREP	RCP	VAR	0.000					0.814	12/09						
Subtotal Product Development			40.617	0.000		0.000		21.240							
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TRSS-PIP	RCP	VAR	11.071					0.220	12/09						
DCGS	RCP	VAR	0.000					0.621	12/09						
MSIDS	RCP	Naval Support Management Activity Washington, DC	0.000					0.267	11/09						
TPCS	RCP	Naval Support Management Activity Washington, DC	7.916					0.530	12/09						
CIHEP	RCP	VAR	0.125					0.130	01/10						
IAS MOD KIT	RC/WR	VAR	3.818					1.411	01/10						
GCCS I3	RCP	VAR	5.325					1.617	02/10						
TCAC	RCP	VAR	3.418					1.856	12/09						
IBR	RCP	Naval Support Management Activity Washington, DC	0.286					0.645	11/09						
IER	WR	SPAWAR Charleston, SC	1.536					0.200	01/10						
JSTARS	RCP	Naval Support Management Activity Washington, DC	0.000					0.122	11/09						
RREP	RCP	VAR	0.000					0.005	02/09						
WVPS								0.493							
Subtotal Support			33.495	0.000		0.000		8.117							
Remarks:															

UNCLASSIFIED

Exhibit R-3 Cost Analysis				DATE: May 2009										
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT						PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev		0206625M USMC Intelligence / Electronic Warfare Systems (MIP)						C2272 Intelligence C2 Systems						
(Tailor to WBS, or Sys/Item Requirements)	Method & Type	Activity & Location	PY s Cost	FY 08 Cost	Award Date	FY 09 Cost	Award Date	FY 10 Cost	Award Date					
TRSS-PIP	RCP	MCOTEA Quantico, VA	0.452					0.151	12/09					
DCGS	RCP	MCOTEA Quantico, VA	0.000					0.300	12/09					
TCAC	REAL	MCOTEA Quantico, VA	0.060					0.050	12/09					
GCCS I3	MPR	Joint Interoperability Test Command Ft Huachuca, AZ	0.199					0.109	03/11					
TPCS	MIPR	MCOTEA Quantico, VA	1.137					0.200	10/09					
Subtotal T&E			1.848	0.000		0.000		0.810						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
DCGS	RCP	VAR	2.280					0.000						
TCAC	WR	Naval Air Warfare Center, Pax River, MD	0.506					0.000						
Subtotal Management			2.786	0.000		0.000		0.000						
Remarks:														
Total Cost			78.746	0.000		0.000		30.167						

DATE:

May 2009

Exhibit R-4/4a Schedule Profile/Detail

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

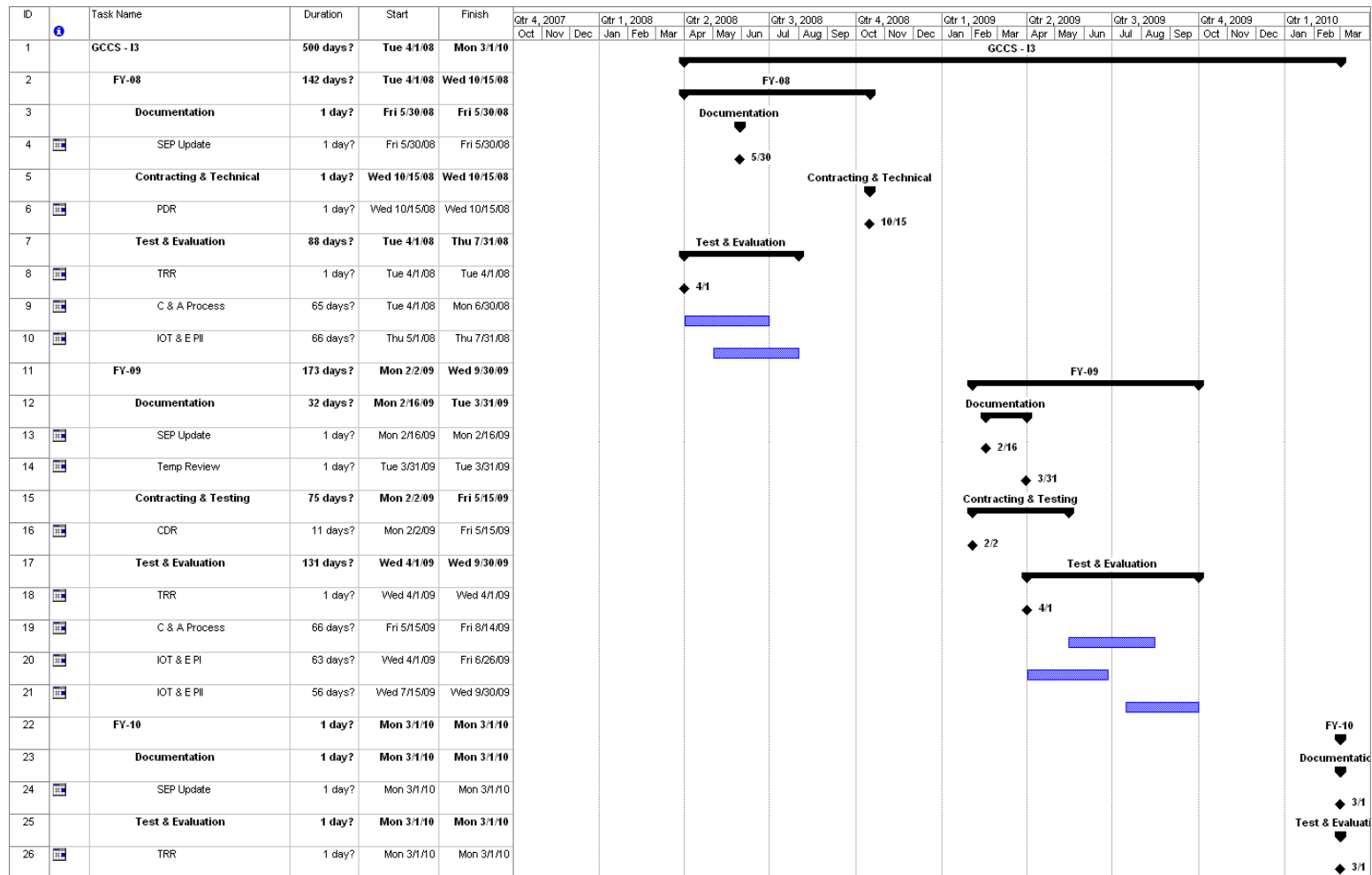
PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys Dev

0206625M USMC Intelligence / Electronic Warfare Systems (MIP)

C2272 Intelligence C2 Systems

GCCS-I3 MILESTONE CHART

Line Item No. & NameFY 2008FY 2009FY 2010

(APPN, BLI #, NOMEN)

(U) RDT&E,N 0206313M/0206625M, C2272

0.041

1.226

1.726

Exhibit R-4/4a Schedule Profile/Detail		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems

GCCS-I3	2008	2009	2010	
Documentation				
SEP Update	3Q			
Contracting and Technical				
PDR		1Q		
Test & Evaluation	3-4Q			
TRR	3Q			
C&A Process	3Q			
IOT&E PII	3-4Q			
Documentation		2Q		
SEP Update		2Q		
Temp Review		2Q		
Contracting and Testing		2-3Q		
CDR		2Q		
Test & Evaluation		3-4Q		
TRR		3Q		
C&A Process		3-4Q		
IOT&E PII		3-4Q		
Documentation			2Q	
SEP Update			2Q	
Test & Evaluation			2Q	
TRR			2Q	

Exhibit R-4/4a Schedule Profile/Detail			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems	

DCGS MILESTONE CHART

EVENTS	FY08	FY09	FY10
MILESTONES	A		B
CDD Approved			▲
CPD			
Testing & Reviews			
DT			▲
FAT			
Test Readiness Review			
IOT&E			
Contracts			
Contract Award	▲		
Production and Fielding			
Limited Deployment			
Full Deployment			
Fielding			

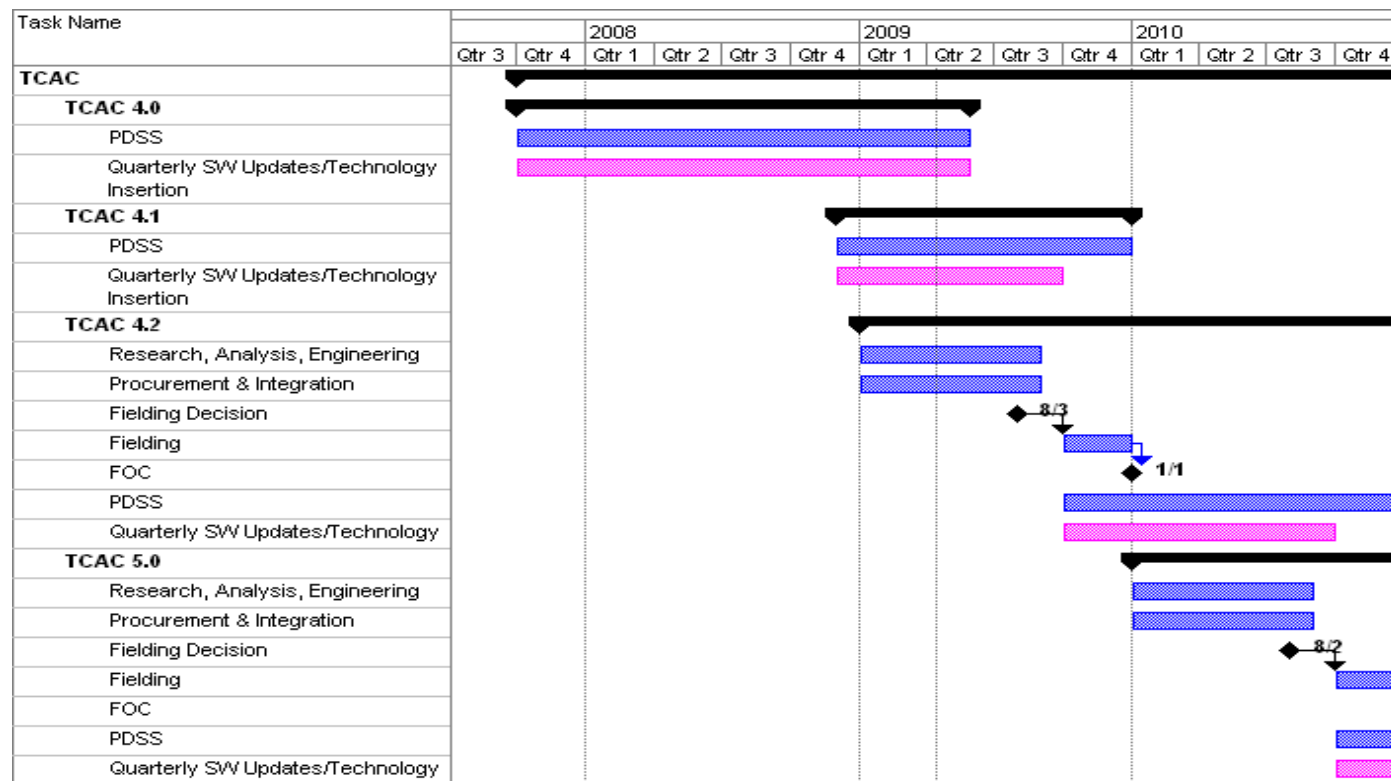
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
(APPN, BLI #, NOMEN)				
(U) RDT&E,N (0206313M/0206625M)	3.946	4.291	14.179	-
(U) PMC BLI 474700 Intell Supp Equip DCGS	0.000	0.115	5.939	

Exhibit R-4/4a Schedule Profile/Detail		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems

DCGS	2008	2009	2010
MILESTONES A	A		B
CDD Approved			2Q
CPD			
Testing & Reveiws			
DT			1Q
FAT			
Test Readiness Review			
IOT&E			
Contracts			
Contract Award	1Q		
Production and Fielding			
Limited Deployment			
Full Deployment			
Fielding			

Exhibit R-4/4a Schedule Profile/Detail			DATE:
			May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems	

TCAC MILESTONE CHART

**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N (0206313M/0206625M)	1.053	1.447	1.933
(U) PMC BLI 465200 Mod Kits TCAC	9.065		
(U) PMC BLI 474700 Intel Support Equip TCAC	0.000	4.007	1.084

Exhibit R-4/4a Schedule Profile/Detail			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME		
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems		
TCAC SCHEDULE DETAIL				
TCAC 4.0	2006	2008	2010	
PC06	1Q-----2Q			
Quarterly SW Update/Technology Insertion	1Q-----2Q			
TCAC 4.1	4Q-----4Q	1Q		
PC08	4Q-----4Q			
Quarterly SW Update/Technology Insertion	4Q-----4Q			
TCAC 4.2	4Q-----4Q			
Research, Analysis, Engineering		1Q---3Q		
Procurement & Integration		1Q---3Q		
Fielding Decision		3Q		
Fielding		3Q---4Q		
FOC		3Q---4Q		
PC09		3Q-----4Q		
Quarterly SW Update/Technology Insertion		3Q-----4Q		
TCAC 6.0			3Q---4Q	
Research, Analysis, Engineering			3Q---4Q	
Procurement & Integration			3Q---4Q	
Fielding Decision			3Q	
Fielding			3Q---3Q	
PC09			3Q---3Q	
Quarterly SW Update/Technology Insertion			3Q---3Q	

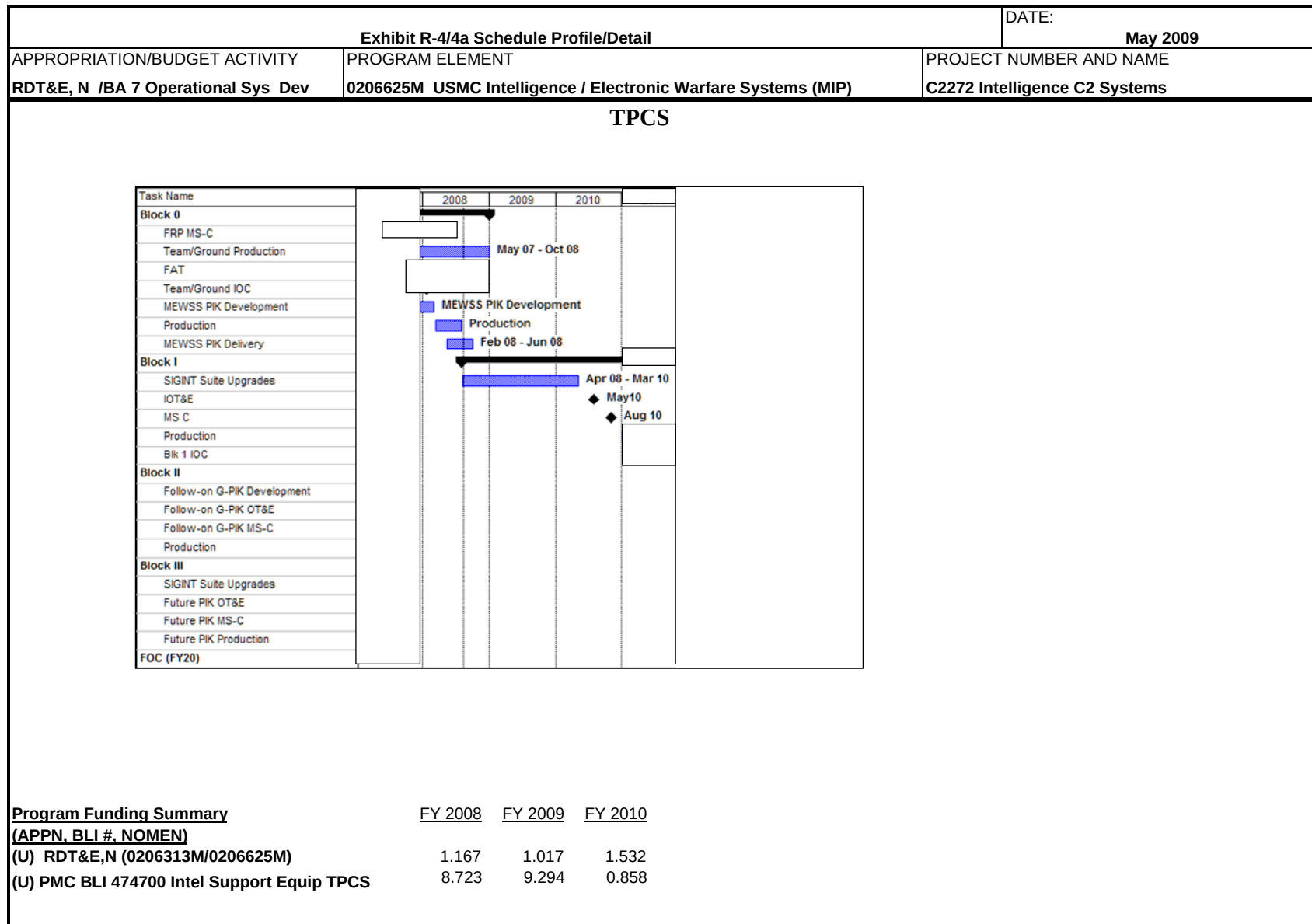
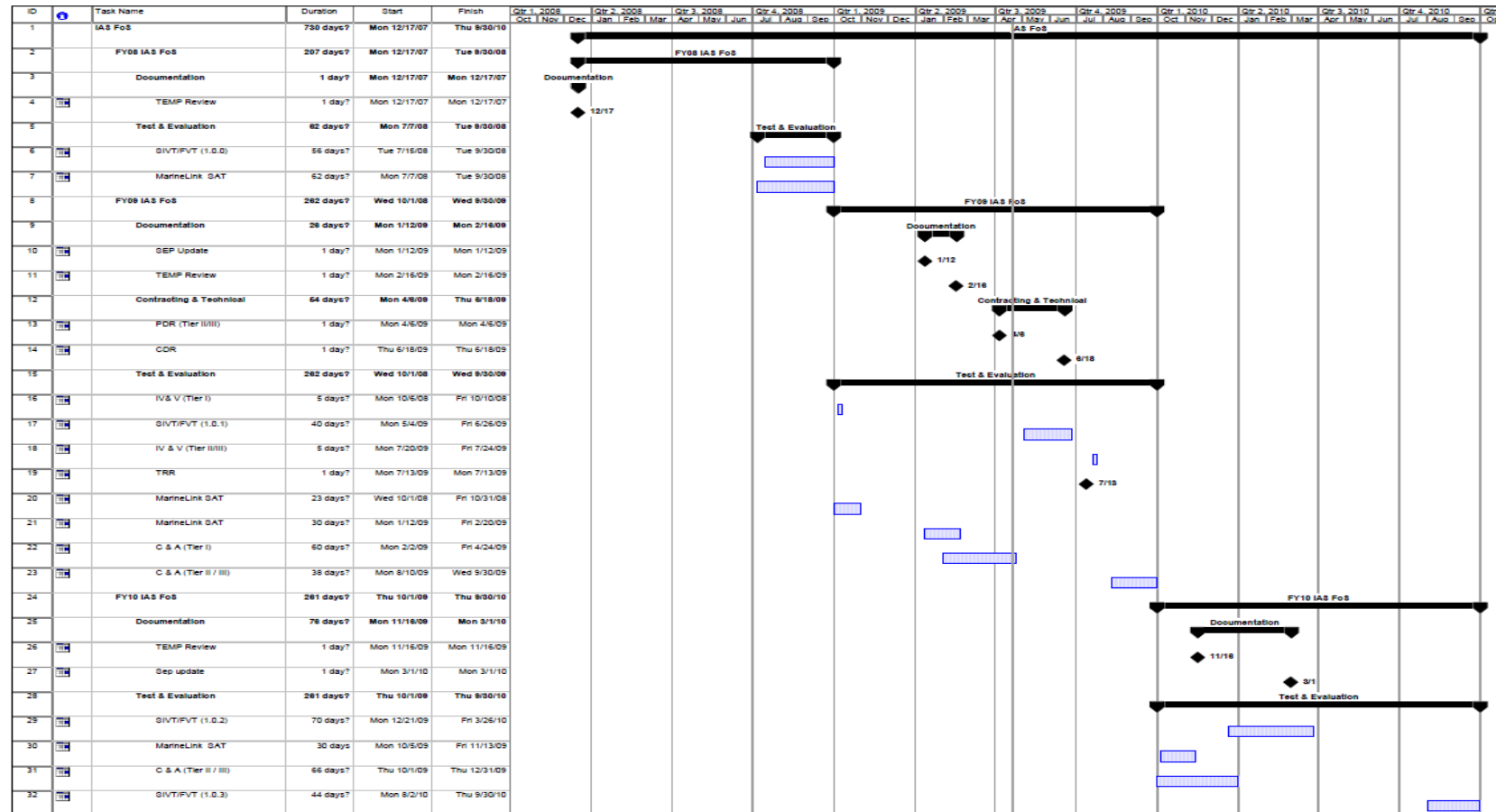


Exhibit R-4/4a Schedule Profile/Detail		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems	

Exhibit R-4/4a Schedule Profile/Detail			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems	

IAS MILESTONE CHART



Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2008	FY 2009	FY 2010
(U) RDT&E,N (0206313M/0206625M)	0.786	1.063	1.411
(U) PMC BLI 474700 Intel Support Equip IAS	0.000	1.059	4.534
(U) PMC BLI 465200 Mod Kits IAS	15.286	0.000	0.000

Exhibit R-4/4a Schedule Profile/Detail							DATE:
							May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT					PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)					C2272 Intelligence C2 Systems	
IAS FOS SCHEDULE DETAIL	2008	2009	2010				
IOS Fos							
Documentation	1Q						
Temp Review	1Q						
Test & Evaluation	4Q	1Q					
S/W Integration & Test - 1.0	4Q						
MarineLink SAT	4Q	1Q					
FY09-IOS Refresh (IOSv2A)							
Documentation							
SEP Update		2Q					
Temp Review		2Q					
Contracting and Technical		3Q					
PDR		3Q					
CDR		3Q					
Test & Evaluation							
IV&V (Tier I)		1Q					
SWFVT (1.0.1)		1Q					
IV&V (TIER II)		3Q					
TRR		4Q					
MarineLink SAT		2Q					
C&A (Tier I)		2-3Q					
FY10 - IAS FoS							
Documentation							
Temp Review			1Q				
SEP Update			2Q				
Test & Evaluation							
S/W Integration & Test - 2.0			1-2Q				
MarineLink SAT			1Q				
C&A (Tier I)		4Q	1Q				
SWFVT (1.0.3)			4Q				

Exhibit R-4/4a Schedule Profile/Detail					DATE:
					May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)			C2272 Intelligence C2 Systems	
	PRIOR	FY08	FY09	FY10	
TRSS RDT&E					
ISR / DCGS Integration / Sensor Software Upgrades					
Sensor Systems Upgrades					
Urban Sensor Set (USS)					MS B
Development and Test					
Internal Processor Board III Integration					
Ground Sensor Surveillance Vehicle Testing					
MCOTEA Support					

Program Funding Summary	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(APPN, BLI #, NOMEN)			
(U) RDT&E,N (0206313M/0206625M)	0.489	0.709	2.669
(U) PMC BLI 474700 Intel Support Equip IAS	62.265	12.307	5.403

Exhibit R-4/4a Schedule Profile/Detail		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	May 2009
RDT&E, N /BA 7 Operational Sys Dev	0206625M USMC Intelligence / Electronic Warfare Systems (MIP)	C2272 Intelligence C2 Systems

TRSS	2008	2009	2010
ISR / DCGS Integration / Sensor Software	1Q----4Q	1Q----4Q	1Q----4Q
System Integration	1Q----3Q	1Q----3Q	1Q----3Q
MS B			2Q
SSCC, Urban Sensor Development and			2Q----4Q
ARL, Internal Processor Board III	2Q----4Q	1Q----4Q	1Q----3Q
Ground Sensor Surveillance Vehicle		2Q----3Q	
MCOTEA Support			1Q----4Q

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						0207161N, TACTICAL AIM MISSILES	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	4.808	6.629	2.298				
0457 AIM-9X	4.808	6.629	2.298				

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

The AIM-9X Sidewinder short-range air-to-air missile is a long term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air missile (AMRAAM). Air superiority in the short-range air-to-air missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category IC (ACAT-IC) joint service program with Navy lead.

The program is in full rate production (FRP) with Lot 8 contract awarded January 2008. Beginning with the Lot 9 contract award, scheduled for award in May 2009, the missile will include the preplanned product improvements (P3I) that resolve critical obsolescence issues such as as the Active Optical Target Detector (ie Fuze) and new CPU processor, as well as improvements to the performance of the missile such as data link capabilities, battery improvements, safety improvements and appropriate software updates.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2008	FY 2009	FY 2010	
Previous President's Budget:	4.350	6.679	2.328	
Current BES Budget:	4.808	6.629	2.298	
Total Adjustments	0.458	-0.050	-0.030	

Summary of Adjustments

Congressional Rescissions				
Congressional Adjustments		-0.032		
SBIR/STTR/FTT Assessments	-0.027			
Program Adjustments	0.485		-0.029	
Rate/Misc Adjustments		-0.018	-0.001	
Subtotal	0.458	-0.050	-0.030	

Schedule:

The Block II software release plan has been updated to reflect that the Operational Flight Software (OFS) 9.200 efforts are limited to rehost the current OFS 8.200 series software into the new Block II hardware and to introduce the basic functions of the replacement fuze. New Block II capabilities will be introduced with fielding OFS 9.300 software series. Therefore, the test scope was reduced for OFS 9.200 software series and increased for OFS 9.300. DT/OT event schedule has been updated due to delays in development of the Active Optical Target Detector (AOTD).

Technical: Not Applicable.

UNCLASSIFIED

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-7		0207161N, TACTICAL AIM MISSILES			0457, AIM-9X																																																																															
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010																																																																																
0457 AIM-9X		4.808	6.629	2.298																																																																																
RDT&E Articles Qty		Not Applicable																																																																																		
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: AIM-9X (Sidewinder) is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X short range Air-to-Air missile modification program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the short range Air-to-Air Missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead). B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th></th> </tr> </thead> <tbody> <tr> <td>Continued Test & Evaluation of System</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>.427</td> <td>.784</td> <td>.705</td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Funding required for Test & Evaluation (T&E) and associated Governmental support required to ensure the AIM-9X missile integration with threshold US Navy aircraft platforms. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th></th> </tr> </thead> <tbody> <tr> <td>Continued Systems Engineering Mgmt</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>4.066</td> <td>5.680</td> <td>1.427</td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Continuation of Primary Hardware Development/Pre-Planned Product Improvement (P3I) efforts for the AIM-9X fuze, Systems Engineering/Program Management, as well as support required to ensure AIM-9X missile integration with threshold US Navy aircraft platforms. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> <th></th> </tr> </thead> <tbody> <tr> <td>Continued Transportation & Travel for program management</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>.315</td> <td>.165</td> <td>.166</td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Transportation/Travel for AIM-9X effort. C. OTHER PROGRAM FUNDING SUMMARY: <table style="width: 100%;"> <thead> <tr> <th></th> <th>FY 2008</th> <th>FY 2009</th> <th>FY 2010</th> </tr> </thead> <tbody> <tr> <td>WPN - BLI 220900 (P1-5), PE 0204162N & 0206138M</td> <td>53.389</td> <td>57.327</td> <td>56.845</td> </tr> <tr> <td>MPAF - BLI 3479 (P1-3), PE 0207161F</td> <td>52.334</td> <td>76.995</td> <td>79.974</td> </tr> <tr> <td>RDTE Air Force - PU 4132 (R1-126), PE 0207161F</td> <td>7.692</td> <td>5.732</td> <td>6.017</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The Low-Rate Initial Production (LRIP) 4, LOT 4, Firm-Fixed-Price (FFP) contract was awarded 4/04. ASN(RD&A) approved the Full-Rate Production (FRP) decision in May 2004. FRP 1, LOT 5 contract was awarded 11/04. FRP 1, LOT 5 through FRP 3 LOT 7 contracts were awarded 11/06. Rewards or penalties are provided depending on Raytheon Systems Corporation (RSC) Performance relative to the Procurement Price Commitment Curve (PPCC) for LOTs 5 through 7 (FY 2005 through FY 2007). FRP 4 LOT 8 (FY 2008) contract was re-negotiated outside of the PPCC, and was awarded in JAN 2008. The FRP 5 LOT 9 (FY 2009) contract will be awarded in May 2009, and will be the first lot of Block II missiles for USG only (no FMS) and will incorporate preplanned product improvements (P3I) that resolve critical obsolescence issues as well as missile performance improvements.										FY 2008	FY 2009	FY 2010		Continued Test & Evaluation of System					Accomplishments / Effort / Sub-total Cost	.427	.784	.705		RDT&E Articles Qty						FY 2008	FY 2009	FY 2010		Continued Systems Engineering Mgmt					Accomplishments / Effort / Sub-total Cost	4.066	5.680	1.427		RDT&E Articles Qty						FY 2008	FY 2009	FY 2010		Continued Transportation & Travel for program management					Accomplishments / Effort / Sub-total Cost	.315	.165	.166		RDT&E Articles Qty						FY 2008	FY 2009	FY 2010	WPN - BLI 220900 (P1-5), PE 0204162N & 0206138M	53.389	57.327	56.845	MPAF - BLI 3479 (P1-3), PE 0207161F	52.334	76.995	79.974	RDTE Air Force - PU 4132 (R1-126), PE 0207161F	7.692	5.732	6.017
	FY 2008	FY 2009	FY 2010																																																																																	
Continued Test & Evaluation of System																																																																																				
Accomplishments / Effort / Sub-total Cost	.427	.784	.705																																																																																	
RDT&E Articles Qty																																																																																				
	FY 2008	FY 2009	FY 2010																																																																																	
Continued Systems Engineering Mgmt																																																																																				
Accomplishments / Effort / Sub-total Cost	4.066	5.680	1.427																																																																																	
RDT&E Articles Qty																																																																																				
	FY 2008	FY 2009	FY 2010																																																																																	
Continued Transportation & Travel for program management																																																																																				
Accomplishments / Effort / Sub-total Cost	.315	.165	.166																																																																																	
RDT&E Articles Qty																																																																																				
	FY 2008	FY 2009	FY 2010																																																																																	
WPN - BLI 220900 (P1-5), PE 0204162N & 0206138M	53.389	57.327	56.845																																																																																	
MPAF - BLI 3479 (P1-3), PE 0207161F	52.334	76.995	79.974																																																																																	
RDTE Air Force - PU 4132 (R1-126), PE 0207161F	7.692	5.732	6.017																																																																																	

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT 0207161N, TACTICAL AIM MISSILES		PROJECT NUMBER AND NAME 0457, AIM-9X									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	Award Date	FY 2010 Cost	Award Date						
PRODUCT DEVELOPMENT													
Primary Hdw Development (Navy Fuze/OFS)	C-CPIF/AF	Raytheon Missile Systems Company, Tucson, AZ	3.100										
Primary Hdw Development (Fuze P3I)	SS-CPFF	Raytheon Missile Systems Company, Tucson, AZ	11.350										
Aircraft Integration	C/CPFF	McDonnell Douglas, St.Louis, MO	2.691	4.368	Apr 2009	1.040	Apr 2010						
Aircraft Integration	WX	NAWCWD, China Lake, CA	2.330	1.082	May 2009	.266	May 2010						
Systems Eng (WD)	WX	NAWCWD, China Lake, CA	36.035	.230	Nov 2008	.121	Nov 2009						
All Prod DevCost from program implementation thru FY2002			192.194										
SUBTOTAL PRODUCT DEVELOPMENT			247.700	5.680		1.427							

Remarks: Prior year award fees earned is 93%. EMD Contract Target Value includes both Navy and Air Force funding. All other fields represent

TEST & EVALUATION													
Dev Test & Eval (WD)	WX	NAWCWD, China Lake, CA	29.843	.310	Nov 2008	.160	Nov 2009						
Navy Test & Eval (Gov Op Test-WD)	WX	NAWCWD, China Lake, CA	.100	.474	May 2009	.545	May 2010						
Navy Test & Eval - (Cont Dev Test Ray)	SS-CPFF	Raytheon Missile Systems Company, Tucson, AZ	.210										
Oper Test & Eval (OPTEVFOR) (GOVT)	WX	OPTEVFOR, Norfolk, VA	2.828										
All Prod DevCost from program implementation thru FY2002			4.927										
SUBTOTAL TEST & EVALUATION			37.908	.784		.705							

MANAGEMENT													
Transportation - Material	MD	NAVAIR, Patuxent River, MD	.060	.015	Nov 2009	.016	Nov 2010						
Travel	WX	NAWCAD, Patuxent River, MD	1.878	.150	Various	.150	Various						
Management and Support Services	CPFF	Jorge Scientific Corp, Lexington Park MD	.170										
All Prod DevCost from program implementation thru FY2002			7.526										
SUBTOTAL MANAGEMENT			9.634	.165		.166							

Total Cost			295.242	6.629		2.298							

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:																																				
EXHIBIT R4, Schedule Profile																								DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME															
RDT&E, N/BA-7									0207161N-Tactical AIM Missiles												0457-AIM-9X															
Fiscal Year	2008				2009				2010																											
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
	1	2	3	4	1	2	3	4	1	2	3	4																								
Primary Hardware Development																																				
AOTD P3I (AKA FUZE)																																				
Test & Evaluation Milestones																																				
Developmental Test																																				
Integrated Test (DT/OT)																																				
Operational Test																																				
Production Milestones																																				
Contract Awards																																				
Deliveries																																				

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:								
Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT AND NAME 0207161N, TACTICAL AIM MISSILES				PROJECT NUMBER AND NAME 0457-AIM-9X			
Schedule Profile	FY 2008	FY 2009	FY 2010					
AOTD P3I	1Q - 4Q	1Q - 4Q	1Q-2Q					
Operational Test OT-IIIB	1Q - 4Q	1Q						
Developmental Test DT-IIIC	3Q - 4Q	1Q - 4Q						
Operational Test OT-IIIC		4Q	1Q - 2Q					
Developmental Test DT-IIID		4Q	1Q					
Integrated Test IT-IIID			2Q - 4Q					
Operational Test OT-IIID								
Full Rate Production (FRP 4) Award Lot 8	2Q							
Full Rate Production (FRP 5) Award Lot 9		3Q						
Full Rate Production (FRP 6) Award Lot 10			2Q					
Full Rate Production (FRP 7) Award Lot 11								
Full Rate Production (FRP 8) Award Lot 12								
Full Rate Production (FRP 9) Award Lot 13								
Full Rate Production (FRP 10) Award Lot 14								
Full Rate Production (FRP 11) Award Lot 15								

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7							R-1 ITEM NOMENCLATURE 0207163N AMRAAM	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	2.496	8.509	3.604					
0981 AMRAAM	2.496	8.509	3.604					

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

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

B. PROGRAM CHANGE SUMMARY

Funding:	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	
Previous President's Budget:	2.497	8.556	3.635	
Current BES:	2.496	8.509	3.604	
Total Adjustments	-0.001	-0.047	-0.031	

Summary of Adjustments				
Congressional Rescissions				
Congressional Adjustments		-0.024		
SBIR/STTR/FTT Assessments	-0.001			
Program Adjustments			-0.030	
Rate/Misc Adjustments		-0.023	-0.001	
Subtotal	-0.001	-0.047	-0.031	

Schedule:

Delays in integrating developmental hardware into flight testing and lower than planned flight test efficiencies have extended the forecast completion date for System Development and Demonstration (SDD) to June 2009. This results in a corresponding change to the forecasted OT start/complete dates and the F/A-18 IOC dates.

The Lot 22 production award was changed to 3rd quarter FY2008 due to protracted negotiations.

FY2010 missile production contract award has been moved from January to February per executive service (USAF) schedule decision.

Phase 4 SIP/SWUP start delayed to 3rd quarter FY2009 due to schedule adjustments.

MRM Concept Development start delayed to 3rd quarter FY2009 due to task definition revisions.

Technical:

Not Applicable.

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009																																																				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7						PROJECT NUMBER AND NAME 0981 AMRAAM																																																			
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010																																																				
0981 AMRAAM			2.496	8.509	3.604																																																				
RDT&E Articles Qty																																																									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1"> <tr> <td>Continued aircraft integration</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>0.887</td> <td>1.304</td> <td>1.307</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Continue aircraft integration activities and test and evaluation for Navy unique requirements.</td> </tr> </table> <table border="1"> <tr> <td>Continued to identify potential improvements</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>0.350</td> <td>2.580</td> <td>0.850</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.</td> </tr> </table> <table border="1"> <tr> <td>Continued Phase 4 SDD efforts</td> <td>FY 2008</td> <td>FY 2009</td> <td>FY 2010</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td>1.259</td> <td>4.625</td> <td>1.447</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Continue system engineering and test activities in AMRAAM Phase 4 program which include conducting Proof of Manufacturing (POM) testing, final testing of Phase 4 software aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for System Improvements Program (SIP) planning with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. Commence Medium Range Missile (MRM) Concept Development to fund the initial exploratory efforts for future technological advancements to combat evolving threats.</td> </tr> </table>										Continued aircraft integration	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	0.887	1.304	1.307	RDT&E Articles Qty				Continue aircraft integration activities and test and evaluation for Navy unique requirements.				Continued to identify potential improvements	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	0.350	2.580	0.850	RDT&E Articles Qty				Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.				Continued Phase 4 SDD efforts	FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost	1.259	4.625	1.447	RDT&E Articles Qty				Continue system engineering and test activities in AMRAAM Phase 4 program which include conducting Proof of Manufacturing (POM) testing, final testing of Phase 4 software aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for System Improvements Program (SIP) planning with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. Commence Medium Range Missile (MRM) Concept Development to fund the initial exploratory efforts for future technological advancements to combat evolving threats.			
Continued aircraft integration	FY 2008	FY 2009	FY 2010																																																						
Accomplishments / Effort / Sub-total Cost	0.887	1.304	1.307																																																						
RDT&E Articles Qty																																																									
Continue aircraft integration activities and test and evaluation for Navy unique requirements.																																																									
Continued to identify potential improvements	FY 2008	FY 2009	FY 2010																																																						
Accomplishments / Effort / Sub-total Cost	0.350	2.580	0.850																																																						
RDT&E Articles Qty																																																									
Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.																																																									
Continued Phase 4 SDD efforts	FY 2008	FY 2009	FY 2010																																																						
Accomplishments / Effort / Sub-total Cost	1.259	4.625	1.447																																																						
RDT&E Articles Qty																																																									
Continue system engineering and test activities in AMRAAM Phase 4 program which include conducting Proof of Manufacturing (POM) testing, final testing of Phase 4 software aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for System Improvements Program (SIP) planning with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. Commence Medium Range Missile (MRM) Concept Development to fund the initial exploratory efforts for future technological advancements to combat evolving threats.																																																									

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009								
APPROPRIATION/BUDGET ACTIVITY RDTE&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM	PROJECT NUMBER AND NAME 0981 AMRAAM									
C. OTHER PROGRAM FUNDING SUMMARY: <table><thead><tr><th></th><th><u>FY2008</u></th><th><u>FY2009</u></th><th><u>FY2010</u></th></tr></thead><tbody><tr><td>220600 AMRAAM WPN/P1# 4 \$</td><td>86.000</td><td>92.955</td><td>145.506</td></tr></tbody></table> Related RDT&E PE 0207130F F-15 PE 0204126N F/A-18 Squadrons PE 0207163F AMRAAM PE 0207133F F-16 PE 0604239F F-22 PE 0207134F F-15E D. ACQUISITION STRATEGY: Annualized AMRAAM production procurements will continue across the FYDP with periodic pre-planned product improvements and Value Engineering Change Proposals (VECP). The 328th Armament Systems Group (328 ARSG) will revisit instituting a Long Term Pricing Agreement (LTPA) upon Raytheon's ability to consistently achieve monthly deliveries of 30 - 35 AIM120Ds.					<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	220600 AMRAAM WPN/P1# 4 \$	86.000	92.955	145.506
	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>								
220600 AMRAAM WPN/P1# 4 \$	86.000	92.955	145.506								

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME								
RDT&E, N / BA-7			0207163N AMRAAM		0981 AMRAAM								
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 (EGLIN))	SS/CPAF	RAYTHEON COMPANY, TUCSON AZ	41.804	0.941	5/09	0.789	1/10						
Award Fees (EGLIN)	SS/CPAF	VARIOUS	5.876	0.166	5/09	0.139	1/10						
Primary Hdw Development (DAHLGREN)	WX	NSWC DAHLGREN D C XDM1 DAHLGREN VA	0.043	0.024	11/08	0.025	11/09						
Primary Hdw Development	TBD	TBD		3.000	5/09								
Primary Hdw Development (NAWCAD)	WX	NAWCAD, PATUXENT RIVER MD	0.365	0.208	11/08	0.207	11/09						
Primary Hdw Development (NAWCWD)	WX	NAWCWD, PT MUGU CA	0.454	0.086	11/08	0.087	11/09						
Prior Years Hardware Dev	Various	VARIOUS	20.520										
SUBTOTAL PRODUCT DEVELOPMENT			69.062	4.425		1.247							
Remarks: Percentage of award fees actually awarded in past award fee periods is 15%.													
SUPPORT													
Development Support (BOEING)	SS/CPAF	MCDONNELL DOUGLAS CORP, ST LOUIS MO	3.607	2.100	01/09	0.400	01/10						
Development Support (NSMA)	RX	NAVY SYST MGT ACT, ARLINGTON VA	2.287	0.250	12/08	0.250	12/09						
Studies & Analyses - JHU/APL	SS/FFP	NAVSEASYS COM, WASHINGTON DC	0.710	0.230	01/09	0.200	01/10						
Prior Years Dev/Acft Integ	Various	VARIOUS	11.366										
SUBTOTAL SUPPORT			17.970	2.580		0.850							
Remarks:													
TEST & EVALUATION													
Dev Test & Eval (NAWCWD)	WX	NAWCWD, PT MUGU CA	5.102	1.304	11/08	1.307	11/09						
SUBTOTAL TEST & EVALUATION			5.102	1.304		1.307							
Remarks:													
MANAGEMENT													
Travel (PMA-2592)	MIPR	PMA-259 EGLIN AFB FL	2.124	0.200	10/08	0.200	10/09						
Prior Years Management	Various	VARIOUS	4.002										
SUBTOTAL MANAGEMENT			6.126	0.200		0.200							
Remarks:													
Total Cost			98.260	8.509		3.604							
Remarks:													

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R4, Schedule Profile														DATE: May 2009														
APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT NUMBER AND NAME														PROJECT NUMBER AND NAME														
RDT&E, N / BA-7 0207163N AMRAAM														0981 AMRAAM														
Fiscal Year	2008				2009				2010																			
	1	2	3	4	1	2	3	4	1	2	3	4																
Pre-Planned Product Improvement (P3I) Phase 3																												
IOC C7		▲																										
Phase 3 SWUP		▲																										
		F/A18 & F/A22																										
		IOC																										
Pre-Planned Product Improvement (P3I) Phase 4																												
SDD									△																			
SYSTEM DT/OT Start									Complete																			
IOC		▲							OT Start (E/F)																			
Phase 4 SIP/SWUP		Free Flight DT							Start																			

UNCLASSIFIED

UNCLASSIFIED

[illegible]

UNCLASSIFIED

CLASSIFICATION:		UNCLASSIFIED																																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7			R-1 ITEM NOMENCLATURE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)																																																
COST (In Millions)	FY 2008	FY 2009	FY 2010																																																
Total PE Cost	18.353	11.910	8.431																																																
3131 / Intratheater Connectors (Concept Studies)	4.888	3.934	1.752																																																
3134 / Intratheater Connectors (Contract Design)	13.465	7.976	6.679																																																
A. MISSION DESCRIPTION: Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide Combatant Commanders high-speed, intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments. 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>18.530</td> <td>11.960</td> <td>8.648</td> </tr> <tr> <td>FY10 President's Budget</td> <td>18.353</td> <td>11.910</td> <td>8.431</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.177</td> <td>-0.050</td> <td>-0.217</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>-0.032</td> <td>0.000</td> </tr> <tr> <td>SBIR/STTR/FTT Assessment</td> <td>-0.153</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Program Adjustments</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>-0.024</td> <td>-0.018</td> <td>-0.217</td> </tr> <tr> <td>Total</td> <td>-0.177</td> <td>-0.050</td> <td>-0.217</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	18.530	11.960	8.648	FY10 President's Budget	18.353	11.910	8.431	Total Adjustments	-0.177	-0.050	-0.217	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-0.032	0.000	SBIR/STTR/FTT Assessment	-0.153	0.000	0.000	Program Adjustments	0.000	0.000	0.000	Rate/Misc Adjustments	-0.024	-0.018	-0.217	Total	-0.177	-0.050	-0.217
Funding:	FY 2008	FY 2009	FY 2010																																																
FY09 President's Budget	18.530	11.960	8.648																																																
FY10 President's Budget	18.353	11.910	8.431																																																
Total Adjustments	-0.177	-0.050	-0.217																																																
(U) Summary of Adjustments																																																			
Congressional Rescissions	0.000	0.000	0.000																																																
Congressional Adjustments	0.000	-0.032	0.000																																																
SBIR/STTR/FTT Assessment	-0.153	0.000	0.000																																																
Program Adjustments	0.000	0.000	0.000																																																
Rate/Misc Adjustments	-0.024	-0.018	-0.217																																																
Total	-0.177	-0.050	-0.217																																																

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3131/Intratheater Connectors (Concept Studies)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.888	3.934	1.752				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint High Speed Vessel (JHSV) Program is a Navy led acquisition for a high-speed, shallow draft, commercial-based ship capable of intra-theater personnel and cargo lift for the Armed Services. The ship is not intended to be a combatant and must operate in benign or secured environments. The technologies supporting this capability were evaluated during the completed Analysis of Alternatives. JHSV capability is intended to bridge the gap between low-speed sea lift and high-speed airlift by transporting personnel, equipment, and supplies over operational distances with access to littoral offload points including austere, minor and degraded ports while in support of the Overseas Contingency Operations (OCO)/Theater Security Cooperation Program (TSCP); Intra-theater Operational/Littoral Maneuver and Sustainment; and Seabasing. The program is guided by four principles/assumptions: 1) Leverage previous Navy, Marine Corps, Army, and SOF work with high speed vessels, including both ACTDs and leased demonstrators. 2) Focus on commercially available, non-developmental item (NDI) platform designs and subsystems. 3) Incorporate survivability features that meet commercial Safety of Life at Sea (SOLAS) requirements for personnel onboard and commercial (T-Ship) Anti-Terrorism/Force Protection (AT/FP) requirements. 4) Affordability will be a prime consideration.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)	PROJECT NUMBER AND NAME 3131/Intratheater Connectors (Concept Studies)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	4.888	3.934	1.752
RDT&E Articles Quantity	0	0	0
R&D efforts for Intratheater Connector - addressing spiral technology development and risk mitigation efforts through demonstration of tools and monitoring systems for hull fatigue unique to lightweight hull forms. Continuing to conduct R&D in areas involving lightweight aluminum flight decks, advanced fendering systems, and safe transport of ammunition and dangerous goods aboard lightweight vessels. FY 08 - Continue the Deployable Airbeam Fendering System (DAFS) study required to integrate and refine such a system for future JHSV seabasing operations. Continued alternative non-skid Phase 1 testing to address the feasibility of mechanical deck treatment as alternative to non-skid coating. Assess commercial High Expansion (HIE) Foam for safekeeping of ordnance carried in vehicles in the mission bay. In preparation for milestone B conduct/attend In-Process Reviews (IPRs) and a Preliminary Design Review (PDR). Continue efforts in support of Developmental Testing and Evaluation. FY 09 - Continue DAFS Integration and alternative non-skid testing (Phase II). Continue feasibility studies of HIE Foam for safe transport of ammunition and dangerous goods aboard JHSVs. Continue efforts in support of Developmental Testing & Evaluation (DT&E) FY 10 - Continue efforts in support of DT&E. Continue modeling and simulation in support of LFT&E. Continue DAFS Study and alternative non-skid testing.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
SCN 3043 Joint High Speed Vessel (JHSV)	0.000	182.260	177.956
D. ACQUISITION STRATEGY:			
Two-phased strategy with competitive preliminary design effort leading to downselect to a single contractor. FPI contract type will be used for construction.			

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					PROJECT NUMBER AND NAME 3131/Intratheater Connectors (Concept Studies)				
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				
Modeling & Simulation	C-CPIF	Alion/CSC	1.737	0.255	JAN-09	0.125	JAN-10				
Risk Mitigation Efforts	C-CPIF	Alion	0.528	0.182	JAN-09	0.025	JAN-10				
Subtotal Product Development			2.265	0.437		0.150					
Remarks:											
Integrated Logistics Support	C-CPIF	Alion	1.377	0.000		0.000					
Technical Data	WR	NSWC-CD/NRL	1.298	0.450	JAN-09	0.000					
Studies & Analyses	WR	NSWC-CD/NATICK/OSD	1.324	0.200	JAN-09	0.100	JAN-10				
Subtotal Support Costs			3.999	0.650		0.100					
Remarks:											
Developmental Test & Evaluation	WR	COTF/JITC	0.294	0.075	JAN-09	0.250	JAN-10				
Subtotal Test and Evaluation			0.294	0.075		0.250					
Remarks:											
Contractor Engineering Support	C-CPIF	CSC	2.213	0.711	JAN-09	0.384	JAN-10				
Government Engineering Support	WR	NSWC-CD/NSWC-DD	3.768	0.926	JAN-09	0.384	JAN-10				
Program Management Support	C-CPIF	Alion	3.637	1.035	JAN-09	0.384	JAN-10				
Travel	WR	NAVSEA	0.250	0.100	JAN-09	0.100	JAN-10				
Subtotal Management Services			9.868	2.772		1.252					
Remarks:											
Total Cost			16.426	3.934		1.752					

CLASSIFICATION:		UNCLASSIFIED											
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					PROJECT NUMBER AND NAME 3131/Intratheater Connectors (Concept Studies)				
Fiscal Year		2008				2009				2010			
		1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones					 MS B								
Preliminary Design & Feasibility Studies													
Design Development													
Award Lead Vessel *Army funded													
Award Second Vessel													
Award Third Vessel *Army Funded													
Award Fourth Vessel													

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3131/Intratheater Connectors (Concept Studies)		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Milestone B		4Q					
Award Lead Vessel *Army Funded		4Q					
Award Second Vessel			4Q				
Award Third Vessel *Army Funded			4Q				
Award Fourth Vessel				4Q			

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3134/Intratheater Connectors (Contract Design)		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	13.465	7.976	6.679				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint High Speed Vessel Program is a Navy led acquisition for a high-speed, shallow draft, commercial-based ship capable of intra-theater personnel and cargo lift for the Armed Services. The ship is not intended to be a combatant and must operate in benign or secured environments. The technologies supporting this capability were evaluated during the completed Analysis of Alternatives. JHSV capability is intended to bridge the gap between low-speed sea lift and high-speed airlift by transporting personnel, equipment, and supplies over operational distances with access to littoral offload points including austere, minor and degraded ports while in support of the Overseas Contingency Operations (OCO)/Theater Security Cooperation Program (TSCP); Intra-theater Operational/Littoral Maneuver and Sustainment; and Seabasing. The program is guided by four principles/assumptions: 1) Leverage previous Navy, Marine Corps, Army, and SOF work with high speed vessels, including both ACTDs and leased demonstrators. 2) Focus on commercially available, non-developmental item (NDI) platform designs and subsystems. 3) Incorporate survivability features that meet commercial Safety of Life at Sea (SOLAS) requirements for personnel onboard and commercial (T-Ship) Anti-Terrorism/Force Protection (AT/FP) requirements.							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)	PROJECT NUMBER AND NAME 3134/Intratheater Connectors (Contract Design)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	13.465	7.976	6.679
RDT&E Articles Quantity	0	0	0
Program Acquisition Efforts for Intratheater Connector - conducting Industry Day to engage potential shipbuilders to comment on the JHSV Performance Spec, solicitation for proposals for JHSV Preliminary Designs, evaluation of the proposals/designs, and downselect from the proposed designs to establish a competitive range for the follow-on Detail Design & Construction Award. Milestone B preparation entails both statutory and regulatory documentation required for a Milestone decision. FY08 - Continue preliminary design efforts leading to shipbuilding contract award in 4th quarter FY08. Commence work on the Preliminary Survivability Assessment report (PSAR). Provide Operational Test Agency (OTA) support through OPTEVFOR, MCOTEA and ATEC. FY09 - Continue work on the Preliminary and Design Survivability Assessment report (PSAR and DSAR). Assess critical issues associated with JHSV operational capabilities and limitations, the effectiveness of the equipment configuration and interfaces, the manning concept, the concept of operations, and the risks to a successful completion of IOT&E. Update the LFT&E management plan and complete the Verification, Validation and Accreditation report (VV&A). FY10 - Continue efforts for the Design Survivability Assessment (DSAR) report. Begin the test plan development for the Total Ship Survivability Trial (TSST). Continue systems engineering.			
C. OTHER PROGRAM FUNDING SUMMARY:			
Line Item No. and Name	FY 2008	FY 2009	FY 2010
SCN 3043 Joint High Speed Vessel (JHSV)	0.000	182.260	177.956
D. ACQUISITION STRATEGY:			
Two-phased strategy with competitive preliminary design effort leading to downselect to a single contractor. FPI contract type will be used for detail design and construction.			

CLASSIFICATION:		UNCLASSIFIED									
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)						PROJECT NUMBER AND NAME 3134/Intratheater Connectors (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				
Ship Integration	C-CPIF	Alion/CSC	3.778	2.000	JAN-09	2.000	JAN-10				
Systems Engineering	C-CPIF	CSC	2.000	1.249	JAN-09	0.960	JAN-10				
Subtotal Product Development			5.778	3.249		2.960					
Remarks:											
Development Support	WR	NSWC-CD	2.000	0.000		0.000					
Integrated Logistics Support	C-CPIF	Alion	1.276	0.000		0.000					
Configuration/Acquisition Management	C-CPIF	Alion/CSC	1.138	0.886	JAN-09	0.885	JAN-10				
Technical Data	WR	NSWC-CD	0.755	0.000		0.000					
Subtotal Support Costs			5.169	0.886		0.885					
Remarks:											
Operational Test & Evaluation	WR	COTF/MCOTEA/ATEC	0.533	0.949	JAN-09	0.681	JAN-10				
Live Fire Test & Evaluation	WR	VAR	1.348	0.985	JAN-09	0.752	JAN-10				
Subtotal Test and Evaluation			1.881	1.934		1.433					
Remarks:											
Contractor Engineering Support	C-CPIF	CSC	0.659	0.593	JAN-09	0.474	JAN-10				
Government Engineering Support	WR	NSWC-CD/NSWC-DD	0.966	0.734	JAN-09	0.552	JAN-10				
Program Management Support	C-CPIF	Alion	1.051	0.480	JAN-09	0.275	JAN-10				
Travel	WR	NAVSEA	0.150	0.100	JAN-09	0.100	JAN-10				
Subtotal Management Services			2.826	1.907		1.401					
Remarks:											
Total Cost			15.654	7.976		6.679					

CLASSIFICATION:		UNCLASSIFIED													
EXHIBIT R-4, SCHEDULE PROFILE										DATE May 2009					
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					PROJECT NUMBER AND NAME 3134/Intratheater Connectors (Contract Design)						
Fiscal Year				2008				2009				2010			
				1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones							 MS B								
Preliminary Design & Feasibility Studies															
Design Development															
Award Lead Vessel *Army funded															
Award Second Vessel															
Award Third Vessel *Army Funded															
Award Fourth Vessel															

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL							DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3134/Intratheater Connectors (Contract Design)		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Milestone B		4Q					
Award Lead Vessel *Army funded		4Q					
Award Second Vessel			4Q				
Award Third Vessel *Army Funded			4Q				
Award Fourth Vessel				4Q			

CLASSIFICATION:								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /				R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)				
BA 7								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	715.169	651.227	474.009					
0728 EHF Satellite Communications (SATCOM) Terminals	98.371	121.883	82.880					
0731 Fleet Satellite Communications	11.846	8.091	1.067					
2472 Mobile User Objective System	593.425	515.278	387.526					
9122 Advanced Wideband System/Transformational Communications	7.472	5.178	2.536					
9999 Congressional Adds	4.055	0.797						
Quantity of RDT&E Articles	4	0	0					
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) 0728 EHF SATCOM Terminals: The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS) and Global Broadcast System (GBS). The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System and WGS Operational Requirements Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms. The Commercial Broadband Satellite Program (CBSP) will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. Program efforts include investigation of emergent technologies through studying, development, and testing of insertion feasibility. (U) 0731 Fleet Satellite Communications: The Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) Control System provides replacement of all non-Chairman Joint Chiefs Staff Instruction (CJCSI) 6251.01 UHF MILSATCOM legacy equipment at Naval Computer & Telecommunications Area Master Station (NCTAMS) Atlantic (LANT), NCTAMS Pacific (PAC), Naval Computer & Telecommunications Station (NCTS) Naples and NCTS Guam; also replaces non-supportable aging WSC-5 terminals. Provides centralized control of full UHF Follow-On (UFO) satellite constellation. Expands channel control capacity with Digital Modular Radio (DMR) at NCTAMS/NCTS; each site will control up to 152 non-processed UHF MILSATCOM channels in adjacent satellite coverage areas using both physical and virtual channel control techniques. Remains backward compatible with all versions of all Demand Assigned Multiple Access (DAMA) waveforms; supports future waveform modifications and additions. Implements decentralized management of UHF SATCOM communications assets. Automated planning and management of UHF MILSATCOM resource with the Network Management System (NMS). Maintains planning reference data: terminals, networks, configuration codes. Defines and ranks communication service requirements. CJCSI 6251.01 Rev B states MILSTD-188-181C/182B/183B (Integrated Waveform or IW) as optional waveforms for terminals. This requires mandatory implementation into JMINI Control System. Beginning in FY 2009, funding supports development of next generation JMINI control system to replace non-supported equipment, reduce system components, support technology insertion and system re-architecture.								

Exhibit R-2, RD TEN Budget Item Justification

CLASSIFICATION:	
EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA 7 R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:	
(U) 0731 Fleet Satellite Communications (continued): The Sensitive Compartmented Information Networks (SCI Networks) is an evolutionary acquisition program designed to provide enabling technology necessary to provide Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and procedural security will be used to control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will greatly expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, Indications and Warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). The SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems. The SCI Networks program will start migrating to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Adaptive Network Edge Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). (U) Maritime integrated Broadcast Service (MIBS) (formerly Tactical Data Information Exchange Subsystem Broadcast (TADIXS-B)) Program Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard US Navy ships, submarines, aircraft, and other joint platforms. It will provide means to disseminate organically derived data from Navy platforms to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to delivery near real time data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including; Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare (USW), Electronic Warfare (EW). The program encompass all Maritime (Navy, Coast Guard, and Air Force) IBS systems (Joint Tactical Terminal - Maritime (JTT-M) and a Radiant Ether (RE) follow-on like system known as Network Enabled IBS (NEIBS)). These systems will provide the Navy, Coast Guard other joint platforms with a coherent approach to fielding maritime IBS systems to take advantage of all available pathways and services. (U) NEIBS (Radiant Ether follow-on): An IBS network solution that provides IBS data to users via SIPRNET, while minimizing utilized bandwidth. NEIBS is a concept for net-centric software-based processing of Integrated Broadcast Service-Simplex (IBS-S) and Integrated Broadcast Service-Interactive (IBS-I) data. The software will receive IBS data through the shipboard network. It will reside on the ship's General Secret (GENSER) Local Area Network (LAN), providing IBS data to required Tactical Data Processors (TDPs) via Transmission Control Protocol/Internet Protocol (TCP/IP). (U) Manage and resource / coordinate resourcing of experiments and pilot testing of Internet Protocol version 6 (IPv6) technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6. (U) 2472 Mobile User Objective System: The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS Program requirements are baselined to the 15 January 2008 Capability Production Document (CPD) Increment 1 validated by Joint Requirements Oversight Council Memorandum (JROCM) 015-08, which was derived from the 17 July 2001 MUOS Operational Requirements Documents (ORD) as modified by JROCM 187-03, dated 23 September 2003. (U) This MUOS Research Development Test & Evaluation, Navy (RDTEN) effort supports a Milestone Decision Authority (MDA) approved On-Orbit Capability (OOC) in 2010 and Full Operational Capability (FOC) in 2014. A MUOS Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 to Lockheed Martin after Key Decision Point (KDP) B. The approval at KDP-B in September 2004 officially designated the MUOS Program as a DoD Space Major Defense Acquisition Program. The program completed its Build Approval Review in FY 2008. FY 2009 MUOS efforts focused on fabrication, assembly, integration and testing of the first two satellites, and continued fielding and testing of the ground equipment. In FY 2010, MUOS efforts will continue to work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure. Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.	

Exhibit R-2, RDTEN 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 0303109N Satellite Communications (Space)
BA 7	
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:	
(U) 9122 Advanced Wideband System/Transformational Communications: The Navy Transformational Communications (NTC) terminal program provides for the development and production of terminals to provide high capacity, reliable, Anti-Jam/Low Probability of Intercept (AJ/LPI) communications capability to the fleet. Terminals will support multiple data streams over Q-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals. Development will focus on a Local Area Network (LAN) to Antenna capability, including quality of service required for unique Navy missions. The Advanced Wideband System/Transformational Communications (AWS/TC) Program draft acquisition strategy consists of terminal suite development and environmental qualification, on-orbit testing, platform integration and test, software enhancements and regression testing throughout the life of the program. (U) 9999 Congressional Adds: The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Satellite Communication (SATCOM) (Military and Commercial) multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. The project was realigned to the Navy from the United States Air Force starting in FY 2004. This project includes conducting JIST-NET software development and engineering analysis. The project is currently in the system development and demonstration phase; and has been approved as a pre-acquisition project. The long-term goal is to provide dynamic real time or near real time apportionment, allocation, and adjudication of satellite resources for the warfighters based on priorities and requirements as assigned by the Operational Command. FY 2010 will be utilized for continued Navy Multiband Terminal (NMT), SCI Networks, MIBS/Radiant Ether, IPv6 transition, MUOS, and ASW/TC development.	

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		BA 7		
		0303109N Satellite Communications (Space)		
(U) B. PROGRAM CHANGE SUMMARY:				
(U) Funding:		FY 2008	FY 2009	FY 2010
FY 2009 President's Budget		724.771	652.463	500.926
FY 2010 President's Budget		715.169	651.227	474.009
Total Adjustments		(9.602)	(1.236)	(26.917)
Summary of Adjustments:				
Congressional Adjustments			(2.011)	
Program Adjustments			0.800	(15.296)
Rate/Miscellaneous Adjustments			(0.025)	(11.621)
Subtotal		0.000	(1.236)	(26.917)
(U) Schedule:				
Fleet Satellite Comm. (project 0731)				
Sensitive compartmented Information (SCI) Networks: Minor software delivery and testing updates. Events added for migration to Integrated Shipboard Network System (ISNS) Inc 2/Consolidated Adaptive Network Edge Services (CANES) beginning in FY 2009 to move to a Common Computing Environment (CCE) and Service Oriented Architecture (SOA). Full transition to CANES Inc 1 occurs in FY 2010.				
MIBS/Radiant Ether (RE): During the FY09 President's Budget Systems Integration was scheduled in FY09 (1QTR) through FY10 (4 QTR). Added Software Integration in FY09 (1-2 QTR) to allow time to determine which available Government-Off-The Shelf (GOTS) software will be used in Radiant Ether (RE). System Integration will begin after Software Integration is completed.				
Mobile User Objective System (project 2472)				
MUOS schedule updated to reflect changes to the test plan and Launch and On-Orbit Capability date for Satellite 1. Changes resulting from technical design challenges for spacecraft 1, causing contractor schedule margin erosion.				
(U) Technical:				
Mobile User Objective System (project 02472)				
No significant technical changes.				

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		98.371	121.883	82.880				
RDT&E Articles Qty		3						
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate / Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS), and Global Broadcast System (GBS). The new system will equip the warfighters with assured, jam resistant, secure communications as described in both the joint AEHF Satellite Communications System and the WGS Operational Requirement Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms. (U) The Commercial Broadband Satellite Program (CBSP) will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. FY 2010 will be utilized for continued Navy Multiband Terminal (NMT) development.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals																									
(U) B. Accomplishments/Planned Program																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;"></th> <th style="width: 12.5%;">FY 2008</th> <th style="width: 12.5%;">FY 2009</th> <th style="width: 12.5%;">FY 2010</th> </tr> <tr> <td>Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)</td> <td style="text-align: center;">10.167</td> <td style="text-align: center;">4.932</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> </table> (U) FY 2008: Commenced development of acquisition documentation including Acquisition Program Baseline (APB), Life Cycle Cost Estimate (LCCE), Test & Evaluation Master Plan (TEMP), Acquisition Strategy/Acquisition Plan (AS/AP), Integrated Logistics Assessment (ILA), Clinger-Cohen Act (CCA) compliance documentation, Information Support Plan (ISP), market research, and engineering studies. Purchased and tested Commercial off-the-shelf (COTS) terminals. (U) FY 2009: Complete development of acquisition documentation and testing of COTS terminals. (U) FY 2010: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="width: 50%;"></th> <th style="width: 12.5%;">FY 2008</th> <th style="width: 12.5%;">FY 2009</th> <th style="width: 12.5%;">FY 2010</th> </tr> <tr> <td>NMT Development, First & Second Phases</td> <td style="text-align: center;">88.204</td> <td style="text-align: center;">116.951</td> <td style="text-align: center;">82.880</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table> (U) Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of SATCOM-related program insertion. (U) First and second phases of Navy Multiband Terminal (NMT) development for System Design and Development (SDD) for ship, shore, and submarine platforms. (U) FY 2008: Continued design and development of 20 Q/Ka capable Engineering Development Models (EDM), X-band add-ons for submarines, and X/Ka kits for ships. Additional security measures were incorporated into the terminal software and hardware to support Department of Defense (DoD) Information Technology Security Certification and Accreditation Process (DITSCAP) certification prior to EDM fielding for Developmental Test /Operational Test (DT/OT). (U) FY 2009: Complete design and development of 20 Q/Ka capable EDMs, X-band add-ons for submarines, and continue development of X/Ka upgrade kits for ships. Additional security measures included in terminal software and hardware will be incorporated and tested via DITSCAP testing. EDMs will be delivered and installed on ship and submarine platforms and a shore site to support DT/OT and preparations for Milestone C. (U) FY 2010: Conduct Development Test/Operational Assessment (DT/OA) of Q/Ka-band capabilities and perform associated system modifications as merited by test results. Receive Milestone C approval. Develop X-band capability.					FY 2008	FY 2009	FY 2010	Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)	10.167	4.932	0.000	RDT&E Articles Quantity	3				FY 2008	FY 2009	FY 2010	NMT Development, First & Second Phases	88.204	116.951	82.880	RDT&E Articles Quantity			
	FY 2008	FY 2009	FY 2010																								
Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)	10.167	4.932	0.000																								
RDT&E Articles Quantity	3																										
	FY 2008	FY 2009	FY 2010																								
NMT Development, First & Second Phases	88.204	116.951	82.880																								
RDT&E Articles Quantity																											

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals		

(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>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
3215 - OPN Ship and Shore	26.336	26.190	19.455					
CBSP	26.336	26.190	19.455					
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>					
3216 - OPN Ship and Shore	0	0	72.496					
NMT	0	0	72.496					

(U) Related RDT&E:
 (U) PE 0303603F, MILSTAR
 (U) PE 0303601F, Air Force Satellite Communications

(U) D. ACQUISITION STRATEGY:

(U) NMT concept exploration contracts were awarded in FY 2001. Two System Development and Demonstration (SDD) contracts were competitively awarded in FY 2004 for the development and demonstration of four prototype terminals per vendor (eight total). In FY 2007, a down select to Raytheon occurred for the development, demonstration and procurement of 20 Engineering Development Models (EDMs) which will incorporate integrated multi-band capabilities for Q/Ka band, Submarine X-Band, and Ship X/Ka frequency band communication requirements.

U) CBSP will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. Acquisition documentation development and concept studies and analyses will be accomplished using existing contracts.

(U) F. METRICS:

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

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7				PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals				
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	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	CPAF	Various	176.954	0.800	10/08							
Hardware Development	C/FFP	Harris (Melbourne, FL)	6.551									
NMT EDM Development	CFAF	Raytheon (Marlborough, MA)	98.277	67.658	10/08	47.679	10/09					
Hardware Development	WR	SSC SD (San Diego, CA)	1.077									
Hardware Development	WR	SSC CH (Charleston, SC)										
Ancillary Hardware Development	CPAF	Raytheon (Marlborough, MA)	57.790									
Software Development	WR	NUWC (Newport, RI)	9.161									
Software Development	CPAF	Raytheon (Marlborough, MA)	3.692	22.680	10/08	12.214	10/09					
Software Development	WR	Various										
Systems Engineering	WR	SSC SD (San Diego, CA)	17.729	3.132	10/08	2.759	10/09					
Systems Engineering	WR	NUWC (Newport, RI)	15.539	5.294	10/08	5.411	10/09					
Systems Engineering	Various	Various	30.367	3.857	10/08	3.576	10/09					
Government Furnished Equipment (GFE)	Various	Various	10.214									
Subtotal Product Development			427.351	103.421		71.639						
Remarks:												
Development Support	WR	Various	7.637	2.000	10/08	1.375	10/09					
Logistics Support	Various	Various	1.582	1.021	10/08	0.702	10/09					
Studies & Analysis	WR	Various	6.459	0.243	10/08	0.167	10/09					
Information Assurance	Various	Various	1.684	1.068	10/08	0.734	10/09					
Subtotal Support			17.362	4.332		2.978						
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-7

0303109N Satellite Communications (Space)

0728 EHF SATCOM Terminals

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	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC SD	13.796	1.545	10/08							
Operational Test & Evaluation	WR	Various	0.556	1.400	10/08							
Subtotal T&E			14.352	2.945		0.000						

Remarks:

Contract Management	Various	Various	6.022	2.381	10/08	1.666	10/09					
Program Management	Various	Various	9.047	4.076	10/08	3.270	10/09					
Acquisition Management	Various	Various	3.791	4.429	10/08	3.020	10/09					
Acquisition Management	WR	NCCA	0.653									
Travel		Gov't Travel	0.687	0.300	10/08	0.307	10/09					
Subtotal Management			20.200	11.186		8.263						

Remarks:

Total Cost			479.265	121.883		82.880	0.000					

Remarks:

CLASSIFICATION:

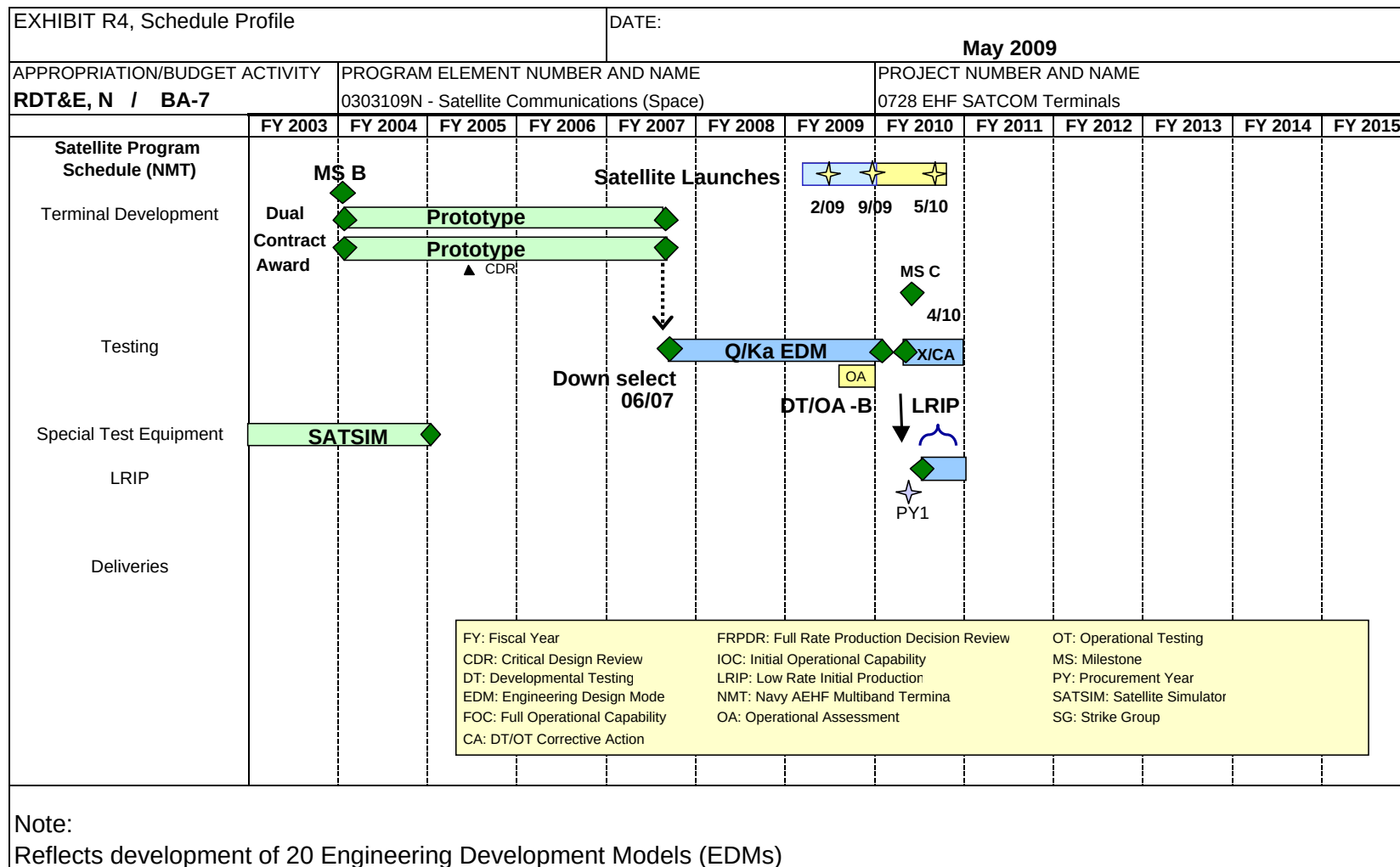


Exhibit R-4, RD TEN Schedule Profile

UNCLASSIFIED

CLASSIFICATION:

[illegible]

NOTE 1: FOC is scheduled for 2Q FY 2015.

Exhibit R-4a. RDTEN Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVIT		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E, N / BA-7		0303109N - Satellite Communications (Space)			0728 EHF SATCOM Terminals		

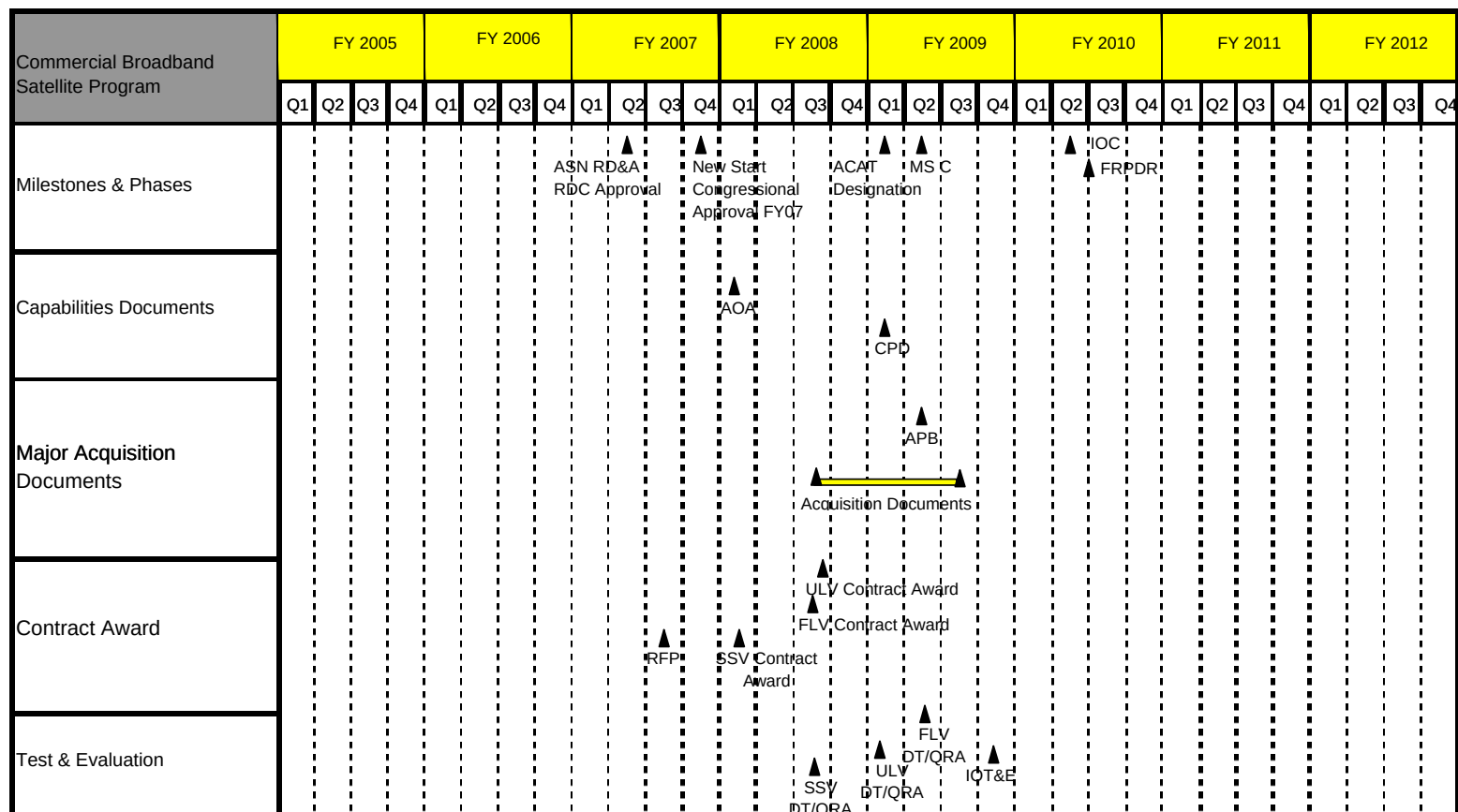


Exhibit R-4, RDTEN Schedule Profile

UNCLASSIFIED

CLASSIFICATION:

[illegible]

Exhibit R-4a, RD TEN Schedule Detail

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0731 Fleet Satellite Communications			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		11.846	8.091	1.067				
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
(U) The Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) Control System provides replacement of all non-Chairman Joint Chiefs Staff Instruction (CJCSI) 6251.01 UHF MILSATCOM legacy equipment at Naval Computer & Telecommunications Area Master Station (NCTAMS) Atlantic (LANT), NCTAMS Pacific (PAC), Naval Computer & Telecommunications Station (NCTS) Naples and NCTS Guam; also replaces non-supportable aging WSC-5 terminals. Provides centralized control of full UHF Follow-On (UFO) satellite constellation. Expands channel control capacity with Digital Modular Radio (DMR) at NCTAMS/NCTS; each site will control up to 152 non-processed UHF MILSATCOM channels in adjacent satellite coverage areas using both physical and virtual channel control techniques. Remains backward compatible with all versions of all Demand Assigned Multiple Access (DAMA) waveforms; supports future waveform modifications and additions. Implements decentralized management of UHF SATCOM communications assets. Automated planning and management of UHF MILSATCOM resources with the Network Management System (NMS). Maintains planning reference data: terminals, networks, configuration codes. Defines and ranks communications service requirements. CJCSI 6251.01 Rev B states MILSTD-188-181C/182B/183B (Integrated Waveform or IW) as optional waveforms for terminals. (U) The Sensitive Compartmented Information Networks (SCI Networks), is an evolutionary acquisition program designed to provide enabling technology necessary to provide Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and procedural security will be used to control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will greatly expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, indications and warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). The SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems. The SCI Networks program will start migrating to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Afloat Network Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). Full transition to CANES inc 1 occurs in FY2010. (U) Maritime integrated Broadcast Service (MIBS) (formerly Tactical Data Information Exchange Subsystem Broadcast (TADIXS-B)) Program Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard US Navy ships, submarines, aircraft, and other joint platforms. It will provide means to disseminate organically derived data from Navy platforms to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to delivery near real time data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including; Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare (USW), Electronic Warfare (EW). The program encompass all Maritime (Navy, Coast Guard, and Air Force) IBS systems (Joint Tactical Terminal - Maritime (JTT-M) and a Radiant Ether (RE) follow-on like system known as Network Enabled IBS (NEIBS)). These systems will provide the Navy, Coast Guard other joint platforms with a coherent approach to fielding maritime IBS systems to take advantage of all available pathways and services. (U) Network Enabled Integrated Broadcast Service (NEIBS) (RE follow-on): An IBS network solution that provides IBS data to users via SIPRNET, while minimizing utilized bandwidth. NEIBS is a concept for net-centric software-based processing of Integrated Broadcast Service-Simplex (IBS-S) and Integrated Broadcast Service-Interactive (IBS-I) data. The software will receive IBS data through the shipboard network. It will reside on the ship's General Secret (GENSER) Local Area Network (LAN), providing IBS data to required Tactical Data Processors (TDPs) via Transmission Control Protocol/Internet Protocol (TCP/IP). (U) Manage and resource / coordinate resourcing of experiments and pilot testing of Internet Protocol version 6 (IPv6) technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6. FY 2010 will be utilized for continued SCI Networks, MIBS and IPv6 Transition development.								

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-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
JMINI IW Development	7.611	6.579	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Funding supported joint services development with Defense Information Systems Agency (DISA) for Integrated Waveform (IW) Technology and software development into Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) control system architecture. Effort entailed system prototyping, Developmental Testing (DT) and waveform compliance testing.

(U) FY 2009: Complete IW Technology and software development into Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) control system architecture. Start and complete software development of the next JMINI control system to replace non-supported equipment, reduce system components, support tech insertion and system re-architecture. Effort is transferring to DISA in FY 2010.

(U) FY 2010: N/A

	FY 2008	FY 2009	FY 2010	
SCI Networks	4.062	0.698	0.653	
RDT&E Articles Quantity				

(U) FY 2008: Continued integration and implementation of SCI Networks and associated Special Intelligence Communications. Completed development of AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems. Continued development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2. Conducted Lab DT on AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems for Submarines and associated Broadcast Control Authority (BCA) shore sites. Performed Developmental Testing (DT) and Observation of Operational Capability (OOC) of COMPOSE 2.0.3 with AN/USQ-148D(V)2. Completed design and development of new server rack. Developed and integrated SCI Networks Common Computing Environment (CCE) system including hardware engineering, software integration, network design and Early Adopter Lab implementation.

(U) FY 2009: Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. Continue development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2 systems. Conduct Lab DT on AN/USQ-148G(V)2 and COMPOSE 3.5. Conduct DT and OOC on AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems for Submarines and associated Broadcast Control Authority (BCA) shore sites. Start migration to ISNS Inc 2/CANES.

(U) FY 2010: Complete development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2 systems. Program transitions from ISNS Inc2/CANES to CANES Inc1.

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-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
MIBS/Radiant Ether	0.000	0.622	0.200	
RDT&E Articles Quantity				

(U) FY 2008: N/A

(U) FY 2009: FY09 funding will support the integration of Network Enabled Integrated Broadcast Service (NEIBS) (formerly Radiant Ether (RE)) Internet Protocol (IP) based architecture to receive, process, display Integrated Broadcast Service (IBS) data for the Navy. Efforts will entail design architecture testing, documentation, Integrated Logistics Support (ILS) certification and training documentation.

(U) FY 2010: FY10 funding will continue to support the integration of NEIBS to receive, process, display IBS data for the Navy. Efforts will entail completing platform integration and developmental testing (DT), incorporate changes in architecture, technical documentation, & training curriculum resulting from DT.

	FY 2008	FY 2009	FY 2010	
IPv6 Transition	0.173	0.192	0.214	
RDT&E Articles Quantity				

(U) FY 2008: Managed and resourced / coordinated resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2008 included planning and Test & Evaluation (T&E) documentation required to support acquisition programs identified as critical IPv6 elements. Additionally, these funds were utilized to coordinate cross PEO and Joint Service efforts in order to reduce acquisition costs within Navy.

(U) FY 2009: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2009 will include continuation of FY 2008 efforts. Additionally, Navy programs of record supported will expand to begin to include software application migration and transition mechanism support.

(U) FY 2010: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2010 will include continuation of FY 2009 efforts. Additionally, Navy programs of record supported will continue to include software application migration and transition mechanism support.

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-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
OPN - Comm Auto - 3050 - SCI NETWORKS	19.097	19.555	40.655
OPN - Sat Comm - 3215 - JMINI	0.157	2.846	0.000
OPN - Maritime Integrated Broadcast Service- 2900 - MIBS	0.000	5.293	0.793

(U) D. ACQUISITION STRATEGY:

JMINI: The Integrated Waveform upgrade will be performed. It will be joint developed with DISA with a planned software upload date of June 2009. The JMINI Control System provides channel control to all UHF SATCOM DAMA waveforms globally. The Integrated Waveform capability is an enhancement to those MILSATCOM waveforms. Per NC FCB, JMINI Program and DISA are jointly developing technology for emergent delivery to the joint warfighter in June 2009. Technology transition to final implementation into the JMINI architecture has not been determined.

SCI Networks: SCI Network variants are comprised of Commercial Off the Shelf (COTS) equipment and Government Off the Shelf (GOTS) software integrated into SCI Networks designs associated with each class of ship. Next Generation versions are being considered for acquisition via the Lockheed Martin Q-70 contract vehicle.

MIBS: The Network Enabled Integrated Broadcast Service (NEIBS) will be comprised of GOTS software and commercial hardware. NEIBS will provide Internet Protocol (IP) based Integrated Broadcast Service (IBS) capability to the fleet. The efforts include platform integration, Development Test and Evaluation (DT&E) conducted in existing laboratory environment to ensure software maturity prior to Operational Test and Evaluation (OT&E).

IPv6: IPv6 testing and experimentation will be used to manage the risk of transition within existing Programs of Record (PORs). Ultimately, the results of the testing and experimentation will influence the acquisition of IPv6 capable products.

Exhibit R-2a, RDTEN Project Justification

EXHIBIT R4, Schedule Profile														DATE: May 2009																		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																		
RDT&E, N / BA-7				0303109N Satellite Communications (Space)										0731 Fleet Satellite Communications (MIBS/Radiant Ether)																		
Fiscal Year	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones																																
Analysis of IBS Alternatives																																
System/Software Integration																																
Equipment Delivery																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test/JITC																																
Acquisition Documentation																																
NEIBS Installs																																
Remarks:																																

UNCLASSIFIED

CLASSIFICATION:

[illegible]

Exhibit R-4a, RD TEN Schedule Detail

CLASSIFICATION:

EXHIBIT R4; Schedule Profile																DATE: May 2009															
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME															
RDT&E, N / BA-7				0303109N Satellite Communications (Space)												0731 Fleet Satellite Communications (SCI Networks)															
Fiscal Year		FY 2008				FY 2009				FY 2010																					
		1	2	3	4	1	2	3	4	1	2	3	4																		
Acquisition Milestones (see notes 1 & 2)							▲						▲																		
				MS B ISNS Inc2/CANES				CANES Inc 1 Transition																							
Prototype Phase																															
System Development																															
AN/USQ 148D(V)2																															
AN/USQ 148A(V)5																															
AN/USQ 148B(V)3																															
AN/USQ 148G(V)2																															
AN/USQ 148H(V)2																															
ISNS INC 2 / CANES				ISNS Inc 2 / CANES Inc 1																											
(see notes 1 & 2)																															
Equipment Delivery																															
AN/USQ 148A(V)5				▲																											
AN/USQ 148B(V)3				▲																											
AN/USQ 148G(V)2				▲																											
AN/USQ 148H(V)2																															
(see note 4)																															
Software Delivery																															
(see note 5)																															
				COMPOSE 3.0																											
				▲																											
				COMPOSE 3.5																											
				▲																											
Test & Evaluation Milestones																															
B(V)3 & A(V)5				B(V)3 & A(V)5																											
A(V)5				DT																											
Lab				148G / 3.5 Lab																											
Development Test				DT																											
(see note 6)																															
Operational Test				OOC																											
				OOC																											
Production Milestones																															
(see note 1)																															
LRIP				▲ INC 1 Prod Mod FRP																											
FRP																															
Deliveries																															
Notes:																															
1. SCI Networks will begin to migrate to ISNS Inc 2/CANES in FY09																															
2. FY10 Program transitions from ISNS Inc2/CANES to CANES Inc1.																															
3. System Development and Equipment Delivery variants enumerated for schedule completeness.																															
4. Software Delivery schedule reflects when COMPOSE is fielded by the program.																															
5. OOC is performed on either a ship, shore, and/or submarine unless otherwise notated.																															
6. OOC = Observation of Operational Capability.																															

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDTE, N / BA-7		0303109N Satellite Communications (Space)			0731 Fleet Satellite Comm (SCI Networks)			
		FY 2008	FY 2009	FY 2010				
	Acquisition Milestone - Post MS C 148D/E PM Memo							
	Acquisition Milestone - Inc 1 Production Mod ADM							
	Acquisition Milestone - MS B ISNS Inc 2/CANES		1Q					
	Acquisition Milestone - ISNS Inc2/CANES to CANES Inc1			1Q				
	System Development - AN/USQ-148D(V)2							
	System Development - AN/USQ-148A(V)5	1Q-2Q						
	System Development - AN/USQ-148B(V)3	1Q-2Q						
	System Development - AN/USQ-148G(V)2	1Q-4Q	1Q-4Q	1Q				
	System Development - AN/USQ-148H(V)2	1Q-4Q	1Q-4Q	1Q				
	System Development - ISNS Inc 2 / CANES		4Q	1Q-4Q				
	Equipment Delivery - AN/USQ-148B(V)3		2Q					
	Equipment Delivery - AN/USQ-148G(V)2			3Q				
	Equipment Delivery - AN/USQ-148H(V)2							
	Software Delivery - COMPOSE 3.0		2Q					
	Software Delivery - COMPOSE 3.5			3Q				
	Software Delivery - COMPOSE 4.0							
	Development Test - Lab DT B(V)3 & A(V)5	2Q						
	Development Test - DT B(V)3 & A(V)5		2Q					
	Development Test - Lab DT 148G/3.5		2Q-3Q					
	Development Test - DT 148G/H/3.5							
	Development Test - Lab DT 4.0							
	Operational Test - OOC 148D & 2.0.3	2Q						
	Operational Test - OOC B(V)3 & A(V)5		2Q					
	Operational Test - OT 148G/H & 3.5							
	Production Milestone - Inc 1 Prod Mod FRP		4Q					

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
RDT&E, N / BA-7					0303109N Satellite Communications (Space)								0731 Fleet Satellite Communications (JMINI)																				
Fiscal Year	FY 2008				FY 2009				FY 2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Acquisition Milestones																																	
Software Development																																	
Test & Evaluation Milestones																																	
Development Test																																	
Operational Test																																	
Production Milestones																																	

Note:
Note 1 - IW software development in FY08 will be conducted by DISA. DISA responsible for Milestones, DT/OT, JITC Certification, scheduling and installation.

Exhibit R-4, RDTE Schedule Profile

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RD&E, N / BA - 7		0303109N Satellite Communications (Space)				0731 Fleet Satellite Communications - JMINI			
		FY 2008	FY 2009	FY 2010					
	Software Development (DISA)	1Q-4Q	1Q-3Q						
	Software Development (JMINI)								
	Software Development Contract Award								
	Software Delivery								
	Production Contract Award								
	Site Delivery								

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT						May 2009			
RDT&E, N / BA-7			0303109N Satellite Communications (Space)						0731 Fleet Satellite Communications			
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
Primary Hardware Development	Various	Lockheed Martin	1.400									
Primary Hardware Development	Various	Various	22.663									
Ancillary Hardware Development												
Systems Engineering	WX	SSC PAC	1.308	0.590	Various	0.040						
Systems Engineering	Various	Various		0.430	Various	0.367						
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			25.371	1.020		0.407						
Remarks:												
Development Support	WX	SSC PAC	0.575		Various					Continuing	Continuing	Continuing
Development Support	Various	Various	0.388	0.200	Various	0.190	Various			Continuing	Continuing	Continuing
Software Development	Various	DISA		4.600	12/08					Continuing	Continuing	Continuing
Software Development	Various	Various	5.958	1.630	Various	0.025	Various			Continuing	Continuing	Continuing
Software Development	Various	SSC PAC				0.090				Continuing	Continuing	Continuing
Training Development	WX	SSC PAC		0.050	Various					Continuing	Continuing	Continuing
IPv6 Support	WX	SSC PAC/NRL	0.173	0.192	Various	0.214	Various			Continuing	Continuing	Continuing
Integrated Logistics Support	WX	SSC PAC/LANT	0.190	0.140	Various	0.025				Continuing	Continuing	Continuing
Configuration Management	WX	SSC PAC/LANT		0.020	Various					Continuing	Continuing	Continuing
Technical Data	WX	SSC PAC/LANT		0.050	Various					Continuing	Continuing	Continuing
GFE												
Subtotal Support			7.284	6.882		0.544				Continuing	Continuing	Continuing
Remarks:												

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDTE&E, N / BA-7			0303109N Satellite Communications (Space)					0731 Fleet Satellite Communications				
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC PAC/LANT	0.755	0.100	Various	0.050	Various					
Developmental Test & Evaluation	Various	Various	0.089	0.043	12/08	0.046	12/09					
Operational Test & Evaluation	WX	SSC PAC										
Live Fire Test & Evaluation												
Test Assets	WX	SSC PAC/LANT		0.014	Various							
Tooling												
GFE												
Subtotal T&E			0.844	0.157		0.096						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	WX	SSC PAC/LANT	0.215	0.032	Various	0.020	Various					
Travel	WX	SSC PAC	0.046									
Subtotal Management			0.261	0.032		0.020						
Remarks:												
Total Cost			33.760	8.091		1.067						
Remarks:												

Exhibit R-3, RDTE&E Cost Analysis

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost		593.425	515.278	387.526					
RDT&E Articles Qty (MUOS Satellites)		1							
RDT&E Articles Qty (UFO TT&C Terminals)									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) 2472 Mobile User Objective System: The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS Program requirements are baselined to the 15 January 2008 Capability Production Document (CPD) Increment 1 validated by Joint Requirements Oversight Council Memorandum (JROCM) 015-08, which was derived from the 17 July 2001 MUOS Operational Requirements Documents (ORD) as modified by JROCM 187-03, dated 23 September 2003. (U) This MUOS Research Development Test & Evaluation, Navy (RDTEN) effort supports a Milestone Decision Authority (MDA) approved On-Orbit Capability (OOC) in 2010 and Full Operational Capability (FOC) in 2014. A MUOS Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 to Lockheed Martin after Key Decision Point (KDP) B. The approval at KDP-B in September 2004 officially designated the MUOS Program as a DoD Space Major Defense Acquisition Program. The program completed its Build Approval Review in FY 2008. FY 2009 MUOS efforts focused on fabrication, assembly, integration and testing of the first two satellites, and continued fielding and testing of the ground equipment. In FY 2010, MUOS efforts will continue to work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure. Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.									

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 2472 Mobile User Objective System	

(U) B. Accomplishments/Planned Program

MUOS	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	591.438	512.282	355.142	
RDT&E Articles Quantity	1			

(U) FY 2008: Continued work on fabrication, assembly, integration and testing of the first two satellites. In addition, continued development of entire ground segment and began fielding and testing.

(U) FY 2009: Continue work on fabrication, assembly, integration and testing of the first two satellites. Continue fielding and testing of the ground segment .

(U) FY 2010: Continue work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure.

Ultra-High Frequency (UHF) Follow-on (FO) Telemetry, Tracking and Command (TT&C) Terminal Upgrades	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	1.987	0.000	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Continued efforts associated with Telemetry, Tracking and Command (TT&C) prototype terminals procurement and installation.

UHF Hosted Payload	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	0.000	2.996	32.384	
RDT&E Articles Quantity				

(U) FY 2009: Developed acquisition strategy and documentation to support contract award for the development of the Ultra-High Frequency (UHF) Satellite Communications (SATCOM) Hosted Payload.

(U) FY 2010: Studies to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.

Exhibit R-2a, RDTEEN 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-7		0303109N Satellite Communications (Space)		2472 Mobile User Objective System

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
BLI 2433: Mobile User Objective System (MUOS) (WPN Funding)	214.375	342.942	516.127
PE 0301376N: MUOS Ground Station Construction, (MILCON Funding)	8.450		

(U) D. ACQUISITION STRATEGY:

Concept Exploration contracts were awarded in early FY 2000 and completed in late FY 2001. Two Component Advancement Development (CAD) contracts were awarded in Q4 FY 2002. A Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 for the first two satellites, system engineering and associated ground infrastructure. Research Development Test & Evaluation, Navy (RDTEN) funds will be used to procure the first two satellites. Weapons Procurement, Navy (WPN) funds will be used to procure the remaining four satellites and launch services for all six satellites. Military Construction (MILCON) funds were required to prepare MUOS ground sites located in Sicily (Niscemi location), Virginia (Northwest location) and Hawaii (Wahiawa location).

Updates to the ground Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) terminals that support UFO on-orbit operations are included. RDTEN funds in the amount of \$1.987M in FY 2008 were used for UFO TT&C software and firmware development and procurement and installation of two prototype terminals. WPN funds in the amount of \$10.628M in FY 2008 and \$1.907M in FY 2009 will be used to procure and install UFO TT&C terminal updates.

Updates to the ground Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) terminals that support UFO on-orbit operations are included. RDTEN funds in the amount of \$1.987M in FY 2008 were used for UFO TT&C software and firmware development and procurement and installation of two prototype terminals. WPN funds in the amount of \$10.628M in FY 2008 and \$1.907M in FY 2009 used to procure and install UFO TT&C terminal updates.

Program Office initiated acquisition strategy and discussions with potential vendors capable of developing the Hosted Payload in FY 2009. The technology development, design and build efforts were planned for FY 2010. In February 2009, the Hosted Payload program was cancelled. The Navy determined the acquisition was not executable due to lack of full funding.

Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will need to be funded in FY10 for incorporation into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2. With the cancellation of Hosted Payload, the FY10 funding provided in the PB09 PDM is a potential funding source for this additional legacy capability.

(U) F. METRICS:

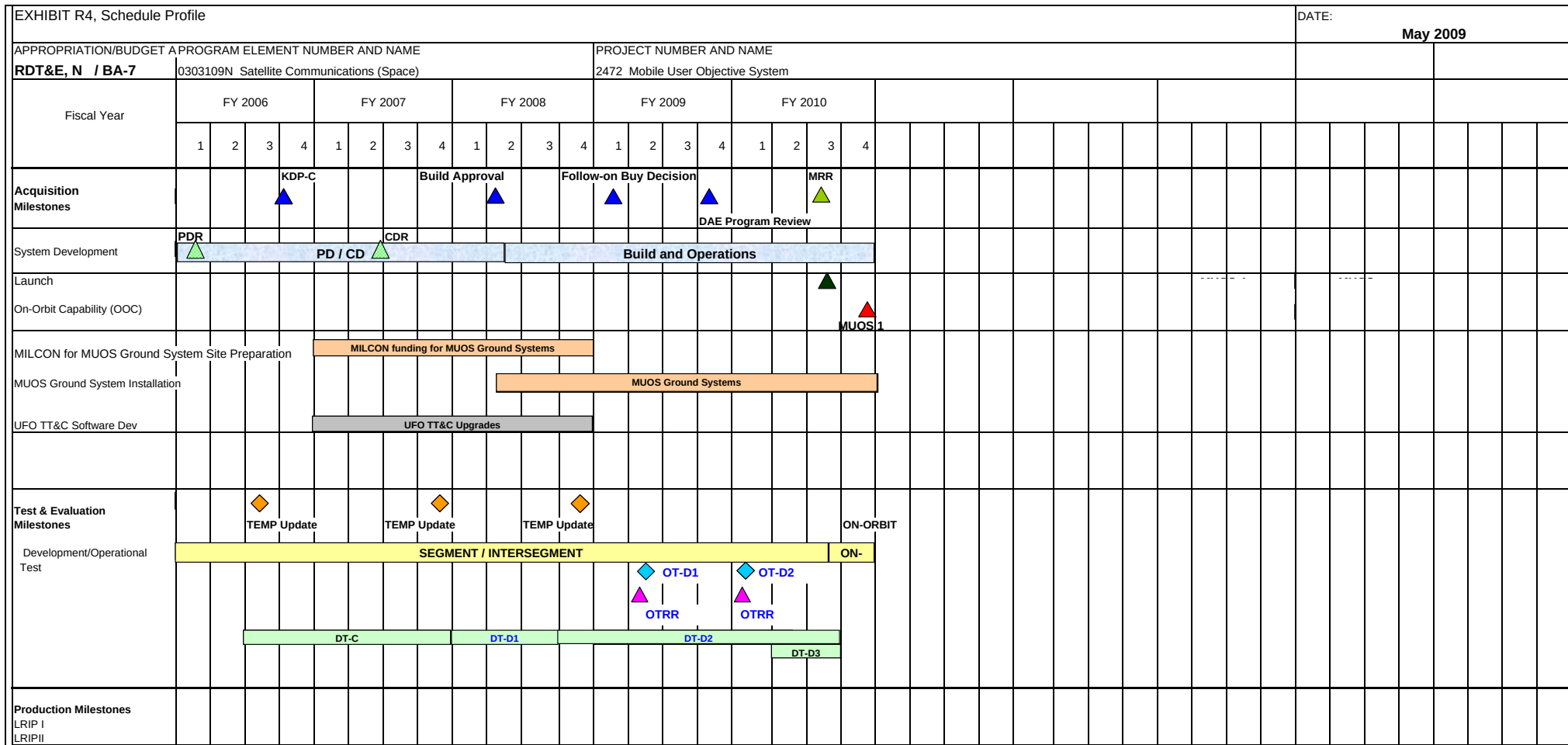
Earned Value Management (EVM) is used for metrics reporting and risk management.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION: UNCLASSIFIED											
Exhibit R-3 Cost Analysis								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7				PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date				
RRDD AOS Contract	CPAF/FPI	Lockheed Martin (LM)	1,941.852	482.591	1Q	340.261	1Q				
CE Contracts & Demos	FFP	LM / Raytheon / Spec Astro / Boeing	21.320								
CAD Contracts	FFP	LM / Raytheon	105.154								
AoA for MUOS	MIPR	Aerospace	2.782								
Government Studies	VAR	VAR	0.711								
Crypto Procurement	MIPR	NSA	3.703								
UHF Hosted Payload	TBD	TBD	0.000	2.996		32.384					
Subtotal Product Development			2,075.522	485.587		372.645					
Remarks:											
UFO TT&C Terminal Upgrades	VAR	VAR	10.591								
Facilities Modifications	VAR	VAR	2.020	0.209							
Australian Site Prep	FFP	Boeing	6.329	16.517							
Leased Lines	TBD	TBD	0.000	0.000		2.000					
Studies & Analyses (EELV)	MIPR	SMC/FMAIC	0.825								
ISCS Integration	WX	NAVSOC	6.198	0.589							
JTRS JTEL Testing	TBD	TBD									
Subtotal Support			25.963	17.315		2.000					
Remarks											
Note 1: Australia site prep funded with Research Development Test & Evaluation, Navy (RDTEN). Site prep for the Niscemi, Wahiawa, and Northwest locations are all funded with Military Construction (MILCON) funds.											
Developmental Test & Evaluation	VAR	VAR	3.407	0.412		0.689					
Operational Test & Evaluation	VAR	VAR	2.195	0.348		0.450					
Live Fire Test & Evaluation											
Subtotal T&E			5.602	0.760		1.139					
Remarks											
Contractor Engineering Support	VAR	VAR	118.298	3.572		6.936					
Government Engineering Support	VAR	VAR	23.262	2.028		2.258					
Program Management Support	VAR	VAR	31.624	5.815		2.248					
Travel	VAR	VAR	2.022	0.200		0.200					
Frequency Filing	MD	ITU	0.855			0.100					
IPA/ICAT	VAR	VAR	0.390								
Subtotal Management			176.451	11.615		11.742					
Remarks											
Total Cost			2,283.538	515.278		387.526					
Remarks											

Exhibit R-3, RDTEN Cost Analysis

CLASSIFICATION:



Change Descriptions:

- (1) As a result of loss of schedule margin and contractor cost over runs, an Over target baseline(OTB)/Over Target Schedule (OTS) was completed in February 2009. Launch and OOC dates for MUOS 1 has slipped six months in this new baseline schedule.
- (2) Mission Readiness Review (MRR) and On-Orbit Testing dates shifted as a result of changes cited in Note 1.
- (3) DAE Program Review added to obtain final authority to procure the remaining satellites.
- (4) Test events reflect the latest version of the TEMP.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail							DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303109N Satellite Communications (Space)						PROJECT NUMBER AND NAME 2472 Mobile User Objective System			
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010					
Preliminary Design (PD) Phase	1Q-4Q									
Test and Evaluation Master Plan (TEMP)	3Q	4Q	4Q							
Segment/Intersegment Testing	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q					
Preliminary Design Review (PDR)	1Q									
Key Decision Point (KDP) C	4Q									
Development Test (DT)-C	3Q-4Q	1Q-4Q								
Critical Design Review (CDR)		2Q								
Complete Design (CD) Phase	4Q	1Q-4Q	1Q-2Q							
UFO TT&C Terminal Upgrades		1Q-4Q	1Q-4Q							
DT-D1			1Q-4Q							
Build Approval			2Q							
Build and Operations Phase			2Q-4Q	1Q-4Q	1Q-4Q					
Operational Assessment (OT-D1)				2Q						
Operational Test Readiness Review (OTRR)				2Q	1Q					
DT-D2			4Q	1Q-4Q	1Q-4Q					
Follow-On Buy Decision				1Q						
DT-D3					2Q-4Q					
DT-D3 Tech Eval 1										
Mission Readiness Review (MRR)					3Q					
Operational Assessment (OT-D2)					1Q					
Launch of Satellite #1 (MUOS 1)					3Q					
On-Orbit Capability for Satellite #1 (MUOS 1)					4Q					
On-Orbit Testing					3Q-4Q					
OT-D3 Multi-Service Operational Testing & Evaluation (MOT&E 1)										
OT-D4 Multi-Service Operational Testing & Evaluation (MOT&E 2)										
Launch of Satellite #2 (MUOS 2)										
On-Orbit Capability for Satellite #2 (MUOS 2)										
DT-D4 Tech Eval 2										
DT-D4					4Q					
Follow-On Test Evaluation (FOT&E)										
Deployment Decision Review (DDR)										
Launch of Satellite #3 (MUOS 3)										
On-Orbit Capability for Satellite #3 (MUOS 3)										
Launch of Satellite #4 (MUOS 4)										
On-Orbit Capability for Satellite #4 (MUOS 4)										
Launch of Satellite #5 (MUOS 5)										
On-Orbit Capability for Satellite #5 (MUOS 5)										
Full Operational Capability (FOC)										

Exhibit R-4a, RD TEN Schedule Detail

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
Program Title	FY 2008	FY 2009	FY 2010					
2472 Mobile User Objective System (MUOS)	\$ 81.838	\$ 58.009	\$ 27.643					
Notes: 1) Values are in millions of dollars. 2) The Mobile User Objective System (MUOS) execution plan is dependent on termination liability funds being available for execution at the beginning of the following fiscal year. For example, termination liability funds for FY2008 are obligated at the beginning of FY2008, but are required for expenditure at the beginning of FY2009. (in October and November of CY 2008), assuming no termination occurs. 3) Termination values were obtained from the Contract Funds Status Report (CFSR), as of M/E December 2008(Feb 09 delivery), a contractually required deliverable on the Risk Reduction & Design Development (RRDD) contract. Non-cancellable commitments (NCC) are included in termination values.								

Exhibit R-5, Terminal Liability Funding for Major Defense Acquisition Programs

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		7.472	5.178	2.536				
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The Navy Transformational Communications (NTC) terminal program provides for the development and production of terminals to provide high capacity, reliable, Anti-Jam/Low Probability of Intercept (AJ/LPI) communications capability to the fleet. Terminals will support multiple data streams over Q-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals. Development will focus on a Local Area Network (LAN) to Antenna capability, including quality of service required for unique Navy missions. The Advanced Wideband System/Transformational Communications (AWS/TC) Program draft acquisition strategy consists of terminal suite development and environmental qualification, on-orbit testing, platform integration and test, software enhancements and regression testing throughout the life of the program. FY 2010 will be utilized for continued ASW/TC development.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications	

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
AWS/TC Concept Development	7.472	5.178	2.536	
RDT&E Articles Quantity				

(U) Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of SATCOM-related program insertion.

(U) **FY 2008:** Reinitiated the system level engineering process previously started in FY06 to determine optimal tradeoffs between cost and performance. Mitigated COTS router and INFOSEC Module risks through MIT/Lincoln Labs and NMT contract risk reductions. Developed products to support the acquisition including a draft of the terminal suite acquisition specification flowdown, Acquisition Strategy Report (ASR) and other required Milestone (MS) B documentation, draft Capability Development Document (CDD), and the supporting products for release of a Transformational Satellite (TSAT) Terminal Request for Proposal (RFP) in 3Q FY 2010. Hardware products included the development of a prototype advanced Transmissions Security/Communications Security (TRANSEC/COMSEC) computer chip that will be required for the operation of every Navy TC terminal.

(U) **FY 2009:** Participate in Joint TSAT system and terminal development activities. Continue system level engineering process related to Navy TSAT Terminal development with space, TSAT Mission Operations System (TMOS), and joint service activities. Draft the Navy TSAT Terminal ICD, terminal specification, and remaining required MS A documentation. Prepare for 2Q FY 2011 MS A. Expect development of a prototype advanced TRANSEC/COMSEC computer chip required for the operation of every Navy TC terminal to progress to an Engineering Development Model (EDM) level.
Note: the NTC program has shifted from a M/S B to a M/S A entry due to new acquisition guidance.

(U) **FY 2010:** Ongoing participation & situational awareness efforts concerning Navy terminal and AF TSAT satellite developments. Develop draft CONOPS, (updated due to system changes) and other acquisition documentation needed to realize M/S A.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications
(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A (U) D. ACQUISITION STRATEGY: System architecture is defined by the ongoing Transformational Communication Study. Acquisition documentation includes the development of a complete set of documentation required to support a MS A decision, including, but not limited to, a terminal specification, Statement of Work (SOW), Acquisition Strategy Report (ASR), and Source Selection Plan. (U) F. METRICS: Earned Value Management (EVM) will be used for metrics reporting and risk management.		

Exhibit R-2a, RD TEN 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-7

0303109N Satellite Communications (Space)

9122 Advanced Wideband System / Transformational Communications

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	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various	39.619	1.918	10/08	0.750	10/09					
Systems Engineering	Various	Various	5.764	1.100	10/08	0.250	10/09					
Systems Engineering	WR	Various	4.418			0.450	10/09					
Subtotal Product Development			49.801	3.018		1.450						

Remarks:

Development Support	WR	Various	4.453	0.500	10/08	0.200	10/09					
Studies & Analyses	WR	Various	3.735			0.130	10/09					
Information Assurance	WR	Various	1.040	0.400	10/08	0.400	10/09					
Subtotal Support			9.228	0.900		0.730						

Remarks:

Exhibit R-3, RDTEN 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-7

0303109N Satellite Communications (Space)

9122 Advanced Wideband System / Transformational Communications

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	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Subtotal T&E			0.000	0.000		0.000						

Remarks:

Contractor Engineering Support		Various	0.349									
Program Management Support	Various	Various	1.922	0.500	10/08	0.100	10/09					
Acquisition Management Support			0.853	0.660	10/08	0.200	10/09					
Travel			0.318	0.100	10/08	0.056	10/09					
Subtotal Management			3.442	1.260		0.356						

Remarks:

Total Cost			62.471	5.178		2.536						

Remarks:

Exhibit R-3, RDTEN Cost Analysis

EXHIBIT R4, Schedule Profile		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications	

ACTIVITY	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
AIR FORCE SATELLITE MILESTONES												
CONTRACT ACTIVITIES												
TERMINAL SUITE DEVELOPMENT												
TESTING												
PRODUCTION												
DELIVERIES												

SDR: System Design Review
 PDR: Preliminary Design Review
 CDR: Critical Design Review
 RFP: Request for Proposal
 MS: Milestone
 AoA: Analysis of Alternatives

ENGAGE IN SPACE ACTIVITIES
 DOC PREP

Exhibit R-4, RD TEN Schedule Profile

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY					PROJECT NUMBER AND NAME			
RDTE, N / BA-7		0303109N - Satellite Communications (Space)			9999 - Congressional Increases			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		4.055	0.797	0.000				
RDT&E Articles Qty _____								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Congressional adds for Satellite Communications								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9999 - Congressional Increases		

(U) B. Accomplishments/Planned Program

Transformational Communications (TC) (9C75A)	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	1.542	0.000	0.000	FY 2011 0.000
RDT&E Articles Quantity				

(U) **FY 2008:** Accelerated insertion of superconductor digital-RF technology in naval MILSATCOM systems.

"Based ""Reconfigurable"" Wide Field of View Sensors (9C74A)	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	1.546	0.000	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Congressional Add for "Field Programmable Processor Array (FPPA) for Space Based "Reconfigurable" Wide Field of View Sensor". Demonstrated alternate reconfigurable technologies for ground segment processing of data provided from large format Focal Plane Arrays (FPAs). Established the applicability of reconfigurable technology to algorithms used for remote sensing missions (e.g., satellite altimetry, large format FPA data for space astrometry).

JIST-NET Systems (9421A)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishments/Effort/Subtotal Cost	0.967	0.797	0.000	0.000
RDT&E Articles Quantity				

(U) FY2008: Updated JIST-NET Version 3 Spiral 1. Provided updated Satellite Access Request (SAR) Module to incorporate Commercial SAR and Satellite Access Approval (SAA) capabilities into the module. Initiated Abbreviated Acquisition Program (AAP) designation documentation.

(U) FY2009: Complete development of JIST software (V3S2), hardware refresh and transition final JIST product to USSTRATCOM (includes training, shipping and initial set-up).

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				R-1 ITEM NOMENCLATURE 0303138N - Consolidated Afloat Network Enterprise Services (CANES)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	0.000	0.000	45.513					
9C87 CANES Integration	0.000	0.000	45.513					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**Consolidated Afloat Network Enterprise Services (CANES):**

CANES will consolidate and reduce the number of Navy afloat networks with state-of-the-art, high-speed networks and infrastructure. CANES will be comprised of two sub-programs: 1) Common Computing Environment (CCE), considered the "hardware" part of CANES, reduces the infrastructure footprint and associated costs for hardware afloat and provides increased reliability, application hosting, and other capabilities to meet current and projected warfighter requirements; and 2) Afloat Core Services (ACS), representing the "software" part of CANES, primarily focusing on adding a layer of "common services" that enables applications to operate in a net-centric enterprise environment. CANES will provide a robust, survivable, secure, scalable ACS enabled CCE for Ships, Submarines, and selected Shore site Maritime Operations Commands (MOC) in addition to providing some proportional capability for aircraft. CANES will provide this ACS enabled CCE capability across all security domains from Unclassified through Sensitive Compartmented Information (SCI). CANES is the physical single Program of Record (POR) replacement for the existing Afloat Networks PORs, Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange Maritime (CENTRIXS-M), SCI Networks and Submarine LAN (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of Computer Network Defense (CND). CANES Increment I is currently planned to achieve Initial Operational Capability (IOC) in FY11 and achieve Full Operational Capability (FOC) in FY17. CANES will field on a four year hardware baseline and a two year rolling software baseline providing application. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will decouple applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

With the evolution of Afloat Network programs migrating into the CANES program beginning in FY10, funding increases to provide even more comprehensive technology capabilities across the Fleet. While the networks capabilities of the ISNS, CENTRIXS-M, SubLAN, Automated Digital Network System, and their associated personal computer hardware and software continue to be supported, CANES will reduce the infrastructure footprint and collapse a significant amount of Afloat Networks through the use of mature cross domain technologies. FY10 will focus on CANES Increment 1 System Design and Development (SDD), conduct Preliminary Design Review (PDR) and Critical Design Review (CDR). Initiate acquisition and Capabilities Production Document (CPD) for Milestone (MS) C. Procure two Engineering Development Models (EDM) units in FY10.

Beginning in FY10, CANES transitions to Program Element (PE) 0303138N Project Unit (PU) 9C87 from PE 0604231N PU 2307 and from PE 0305208N PU 2174.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7	R-1 ITEM NOMENCLATURE 0303138N - Consolidated Afloat Network Enterprise Services (CANES)

B. PROGRAM CHANGE SUMMARY:

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	45.513
Total Adjustments	0.000	0.000	45.513

Summary of Adjustments

Program Adjustments	0.000	0.000	45.513
Rate/Misc Adjustments	0.000	0.000	0.000
	0.000	0.000	45.513

Schedule:

CANES (Project 9C87)

Program initiation occurs at MS B in FY10, following pre-acquisition risk reduction efforts to refine the technological approach. Increment 1 IOC and FOC are planned for FY11 and FY17, respectively.

Technical: Not applicable

EXHIBIT R-2, RDT&E Budget Item Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303138N - Consolidated Afloat Network Enterprise Services (CANES)				PROJECT NUMBER AND NAME 9C87 - CANES Integration	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	0.000	0.000	45.513					
RDT&E Articles Qty	0	0	2					

Consolidated Afloat Network Enterprise Services (CANES):

CANES will consolidate and reduce the number of Navy afloat networks with state-of-the-art, high-speed networks and infrastructure. CANES will be comprised of two sub-programs: 1) Common Computing Environment (CCE), considered the "hardware" part of CANES, reduces the infrastructure footprint and associated costs for hardware afloat and provides increased reliability, application hosting, and other capabilities to meet current and projected warfighter requirements; and 2) Afloat Core Services (ACS), representing the "software" part of CANES, primarily focusing on adding a layer of "common services" that enables applications to operate in a net-centric enterprise environment. CANES will provide a robust, survivable, secure, scalable ACS enabled CCE for ships, submarines, and selected shore sites Maritime Operations Command (MOC) in addition to providing some proportional capability for aircraft. CANES will provide this ACS enabled CCE capability across all security domains from unclassified through Sensitive Compartmented Information (SCI). CANES is the physical single Program of Record (POR) replacement for the existing Afloat Networks PORs, Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange Maritime (CENTRIXS-M), SCI Networks and Submarine LAN (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of Computer Network Defense (CND). CANES Increment I is planned to achieve Initial Operational Capability (IOC) in FY11 and Full Operational Capability (FOC) in FY17. CANES will field on a four year hardware baseline and a two year rolling software baseline providing application. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will decouple applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

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-7	PROGRAM ELEMENT NUMBER AND NAME 0303138N - Consolidated Afloat Network Enterprise Services (CANES)	PROJECT NUMBER AND NAME 9C87 - CANES Integration

(U) B. Accomplishments/Planned Program

CANES	FY08	FY09	FY10
Accomplishments/Effort/Subtotal Cost	0.000	0.000	45.513
RDT&E Articles Quantity	0	0	2

FY08: Previously funded in PE 0604231N, project 2307.

FY09: Previously funded in PE 0604231N, project 2307.

FY10: Program/budget transition from ISNS Inc 2/CANES to CANES which consolidates Afloat LANs and enterprise services aboard ships and shore sites. These capabilities include increased availability to mission critical level ships, multiple security enclaves, application hosting, Afloat Core Services (ACS), and collaboration services. Begin required statutory and regulatory programmatic activities required to achieve Milestone B (MS B) and Milestone C (MS C) including acquisition documentation and SDD efforts. Conduct Developmental Testing (DT) on CANES Increment 1. Conduct PDR and CDR on CANES Increment 1. Review and initial operational assessments will be conducted on a minimum of two system developer baselines. CANES ACS integration contract awarded and initiation of ACS Integrator contracted activities across the CANES enterprise will begin spiral development activities against the proposed development baselines. Develop Cost Analysis Requirements Document (CARD) and Life Cycle Cost Estimate (LCCE) for CANES. Award System Development contract on a minimum of two system developer baselines. Procure two Engineering Development Models (EDM) units. Prepare Capabilities Production Document (CPD). Achieve MS B. Develop design installation studies and participate in source selection activities.

CANES will begin Trident Warrior (TW) at sea demonstrations to define and refine policy, governance and tactics techniques and procedures and training activities 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 unclassified/classified wireless
6. ACS
7. VIXS
8. CND

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303138N - Consolidated Afloat Network Enterprise Services (CANES)	PROJECT NUMBER AND NAME 9C87 - CANES Integration

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
OPN 2915 - CANES	0.000	0.000	1.181
Total:	0.000	0.000	1.181

D. ACQUISITION STRATEGY:

Procurement, integration and installation efforts for CANES and Afloat Core Services (ACS) are accomplished through various SSC and PEO C4I contracts.

E. MAJOR PERFORMERS:

SPAWAR Systems Center Pacific (SSC Pacific), San Diego, CA, provides hardware interface design and testing for CANES.
 Commander Operational Test and Evaluation Force (COMOPTEVFOR), Norfolk, VA, provides operational test and evaluation support for CANES.
 System Research & Application Corporation (SRA), San Diego, CA and various contractors provide acquisition documentation support for CANES.
 SPAWAR Systems Center Atlantic (SSC LANT), Charleston, South Carolina, provides software interface design and testing for ACS.

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-7			PROGRAM ELEMENT 0303138N - Consolidated Afloat Network Enterprise Services (CANES)					PROJECT NUMBER AND NAME 9C87 - CANES 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	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	Vendor A TBD	0.000	0.000	-	13.250	11/09	Continuing	Continuing	Continuing
Primary Hardware Development	CPFF	Vendor B TBD	0.000	0.000	-	13.250	11/09	Continuing	Continuing	Continuing
Systems Engineering	CPFF	Vendor A TBD	0.000	0.000	-	1.250	11/09			
Systems Engineering	CPFF	Vendor B TBD	0.000	0.000	-	1.250	11/09	Continuing	Continuing	Continuing
Systems Engineering	WX	SSC	0.000	0.000	-	6.838	12/09	Continuing	Continuing	Continuing
Systems Engineering	CPFF	Vendor TBD	0.000	0.000	-	0.000	-			
Subtotal Product Development			0.000	0.000		35.838		Continuing	Continuing	Continuing
Remarks:										
Software Development	Various	Vendor TBD	0.000	0.000		3.000	12/09	Continuing	Continuing	Continuing
Subtotal Software Development			0.000	0.000		3.000		Continuing	Continuing	Continuing
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-7			PROGRAM ELEMENT 0303138N - Consolidated Afloat Network Enterprise Services (CANES)					PROJECT NUMBER AND NAME 9C87 - CANES 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	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	CPFF	VENDOR A TBD	0.000	0.000	-	0.500	02/10	Continuing	Continuing	Continuing
Developmental Test & Evaluation	CPFF	VENDOR B TBD	0.000	0.000	-	0.500	02/10	Continuing	Continuing	Continuing
Developmental Test & Evaluation	VARIOUS	NSMA	0.000	0.000	-	0.100	VARIOUS	Continuing	Continuing	Continuing
Operational Test & Evaluation	WX	COMOPTEVFOR	0.000	0.000	-	0.075	VARIOUS	Continuing	Continuing	Continuing
Operational Test & Evaluation	CPFF	VENDOR TBD	0.000	0.000	-	0.000	-			
Subtotal T&E			0.000	0.000		1.175		Continuing	Continuing	Continuing
Remarks:										
Program Management Support	WX	SSC SD	0.000	0.000	-	2.000	11/09	Continuing	Continuing	Continuing
Program Management Support	VARIOUS	VARIOUS	0.000	0.000	-	3.500	10/09	Continuing	Continuing	Continuing
Subtotal Management			0.000	0.000		5.500		Continuing	Continuing	Continuing
Remarks:										
Total Cost			0.000	0.000		45.513		Continuing	Continuing	Continuing
Remarks:										

Exhibit R-3, RDT&E Cost Analysis

CLASSIFICATION:

EXHIBIT R4, RDT&E Schedule Profile																				DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										0303138N - Consolidated Afloat Network Enterprise Services (CANES)										9C87 - CANES Integration												
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
Quarter	1	2	3	4	1	2	3		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones (see note 1,2,3)									CANES Inc 1 Transition △		CANES MS B △																					
Prototype Phase Demonstrations (Trident Warrior)											TW △																					
System Development									PDR Inc 1 △		CDR Inc 1 △																					
									ANES Inc 1 System Development																							
Software Development ACS																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones LRIP																																
FRP																																
Deliveries																																

Notes:

1. FY10 Program transitions to CANES Inc 1 from ISNS Inc2/CANES.
2. Beginning FY10, CANES transitioning to PU 9C87 from PU 2307.
3. Beginning FY10, CANES transitioning from DCGS-N PU 2174 .

EXHIBIT R4, RDT&E Schedule Profile

CLASSIFICATION:

[illegible]

NOTES:

1. FY10 Program transitions to CANES Inc 1 from ISNS Inc2/CANES.
2. Beginning FY10, CANES transitioned to PU 9C87 from PU 2307.
3. Beginning FY10, CANES transitioned from DCGS-N PU 2174 .

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)						
COST (\$ in Millions)	FY2008	FY2009	FY2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	32.494	33.639	24.226					
0734 Information Systems Security	24.569	24.820	22.026					
R0734 Communications Security (ONR)	2.121	2.137	0.000					
X3230 Communications Security (ONR)	0.000	0.000	2.200					
9999 Congressional Increases	5.804	6.682	0.000					
Quantity of RDT&E Articles								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The goal of the Navy Information Systems Security Program (ISSP) is to ensure the continued protection of Navy and Joint telecommunications and information systems from hostile exploitation and attack. ISSP is the Navy's implementation of statutory and regulatory requirements specified in Presidential Decision Directive 63, the Computer Security Act of 1987 (Public Law 100-235), Appendix III of Office of Management and Budget (OMB) Circular A-130, and Department of Defense Directive 8500.1. ISSP activities address the triad of Defensive Information Operations defined in Joint Publication 3-13; protection, detection, and reaction. Evolving detection and reaction responsibilities extend far beyond the traditional ISSP role in protection or Information Security (INFOSEC). Focused on FORCEnet supporting the highly mobile forward-deployed subscriber, the Navy's implementation of Network-Centric Warfare (NCW) places demands upon the ISSP as the number of users dramatically increases and the criticality of their use escalates. Today, the ISSP protects an expanding core service critical to the effective performance of the Navy's mission, supported by Mission Assurance Category 1 systems and Crypto Modernization requirements with Chairman Joint Chiefs of Staff Instruction (CJCSI) 6510. (U) The interconnectivity of Naval networks, connections to the public information infrastructure, and their use in modern Naval and Joint war fighting means that FORCEnet is a more easily attainable and extremely high value target. An adversary has a much broader selection of attack types from which to choose than in the past. In addition to the traditional attacks that involve the theft or eavesdropping of information, United States Navy (USN) information and telecommunications systems face advanced attacks involving malicious changes to critical information, changes to the functioning of critical systems, denial of service (jamming), and the destruction of systems and networks. Since many Naval information systems are based on commercially available technologies, an adversary often has access to the very technologies they want to exploit. (U) The rapid rate of change in the underlying commercial and government information infrastructures makes the provision of security an increasingly complex and dynamic problem. ISSP provides the Navy's war fighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, privacy, and non-repudiation. Information Assurance (IA) technology mix and deployment strategies must evolve quickly to meet the rapidly evolving threats and vulnerabilities.								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)
(U) The Navy Information Systems Security Program (ISSP) Research Development Test & Evaluation (RDTE) program works to provide the Navy with these essential Information Assurance (IA) elements: (1) Assured separation of information levels and user communities, including coalition partners; (2) Assurance of the telecommunications infrastructure; (3) Assurance of Joint user enclaves, using a defense-in-depth architecture; (4) Assurance of the computing base and information store; and, (5) Supporting assurance technologies, including a Public Key Infrastructure (PKI) and directories. Modeling Department of Defense (DoD) and commercial information and telecommunications systems evolution (rather than being one-time developments), the ISSP RDT&E program must be predictive, adaptive, and technology coupled. The program develops frameworks, architectures, and products based on mission threats, information criticality, exploitation risks, risk management, and integrated Joint information system efforts. (U) All ISSP RDT&E efforts comply with the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) as implemented through Office of Management and Budget (OMB) Circular A-119 of February 10, 1998, DoD Instruction 4120.24, Defense Standardization Program (DSP), and DoD Instruction 4120.3-M, Defense Standardization Program Policies and Procedures. The predominant commercial standards bodies in ISSP-related matters include International Organization for Standardization (ISO), American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE), Internet Engineering Task Force (IETF), World Wide Web Consortium (W3C), and National Institute of Standards and Technologies (NIST). The Joint interoperability required in today's telecommunications systems makes standards compliance a must and, the ISSP RDT&E program complies with the Joint Technical Architecture. The FORCENet architecture and standards documents reflect this emphasis on interoperable standards. (U) The interconnection of FORCENet into the DoD Global Information Grid (GIG) requires all ISSP RDT&E activities to adopt a minimum standard of "best commercial IA practice." The ISSP RDT&E program examines commercial technologies to determine their fit within the USN architectures, provides feedback to vendors about what the Navy requires, and participates in the standards bodies themselves. When necessary to protect mission critical systems specified in Clinger/Cohen Act, the ISSP RDT&E develops or tailors commercial and government technologies, standards, and processes to meet Navy-unique requirements; prototypes systems or portions of systems and examines their utility in operational Navy settings; and, provides IA expertise and engineering to Navy and Joint information system developments. All ISSP technology development efforts solve specific Navy and Joint IA problems using techniques that speed transition to procurement as soon as ready. (U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade and integration of existing, operational systems. This includes cryptographic systems required to protect information defined in 40 United States Code (USC) Chapter 25 Sec 1452, and the ISSP cryptographic RDT&E program is the implementation of requirements in Executive Orders 12333 and 12958 and National Security Decision Directive 145. Major focus areas in FY10: ** Computer Network Defense (CND) – Develop User Defined Operational Picture (UDOP) to enhance Security Information Management (SIM) tools. Move to a Afloat Core Services(ACS) and Common Computing Environment (CCE). ** Crypto/Crypto Modernization – Continue to define prioritization of cryptographic products and strategies to modernize and reduce the overall crypto inventory. Continue development of Link-16 Common Cryptologic Module (CCM) and Link 22 Modernized Link Level Comsec (MLLC). Transition the Secure Voice research and development efforts to Crypto Modernization program for Special Test Equipment (STE) management and sustainment, and the fielding of the VINSON Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM). Initiate the development of KW-46 Fleet Submarine Broadcast System (FSBS). Initiate the KL-51 major acquisition development. Investigate and if needed, develop a modernization plan for portable tactical radios and Demand Assigned Multiple Access (DAMA) crypto modernization requirements that is coordinated with National Security Agency (NSA) and across the Services. ** Electronic Key Management Sysytem(EKMS)/ Tactical Key Loader (TKL)/ - Complete development, first article testing and transition to production. ** EKMS/ Key Management Infrastructure(KMI) - Transition planning; participation in KMI Operational Assessment #2 (OA2) and Initial Operational Test and Evaluation to support upcoming milestone C		

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-7	R-1 ITEM NOMENCLATURE 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	<u>FY 08</u>	<u>FY 09</u>	<u>FY10</u>
FY 09 President's Budget	34.337	27.037	24.404
FY 10 President's Budget	32.494	33.639	24.258
Total Adjustments	-1.843	6.602	-0.146

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments	0.000	6.700	0.000
Program Adjustments	-1.843	0.000	0.000
Rate/Misc Adjustments	-0.098	-0.098	-0.146
Subtotal	-1.843	6.602	-0.146

(U) Schedule:

- The KG40-AR Decision/Award has slipped from 1Q FY08 to 2Q FY08 due to environmental qualification testing. Production contract has been awarded.
- Electronic Key Management System (EKMS) Phase V software Local Comsec Management Software (LCMS) 5.1 delivery has slipped from 2Q FY08 to 4Q FY09 due to National Security Agency (NSA) testing delays.
- LMCS 5.2 software delivery is now reflected in 2Q FY10.
- KG45-A deliveries have slipped from 2Q FY08 to 3Q FY09 due to NSA certification qualification testing requirements

(U) Technical:

N/A.

Exhibit R-2, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NUMBER AND NAME				
RDT&E, N / BA-7	0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)			0734 INFORMATION SYSTEMS SECURITY				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	24.569	24.820	22.026					
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Information Systems Security Program (ISSP) Research Development Test & Evaluation (RDTE) provides Information Assurance (IA) solutions for the Unites States Navy (USN) forward deployed, highly mobile information subscriber. FORCEnet relies upon an assured information infrastructure, and the ISSP RDT&E program architects, engineers, and provides the Quality of Assurance (QA) consistent with risks faced. The ISSP addresses engineering design, development, modeling, test, and evaluation for the unique IA challenges associated with the highly mobile, dispersed, bandwidth limited, and forward-tactical connected USN communications systems. (U) ISSP RDT&E must work closely within the Navy's Information Operations – Exploit (Signals Intelligence - SIGINT) and Information Operations – Attack (INFOWAR - information warfare) communities. ISSP RDT&E developed systems must dynamically change the Navy's current information assurance posture, based upon operational indications and warnings. To ensure interoperability, ISSP RDT&E must integrate fully with the FORCEnet and Maritime Cryptologic Architectures. ISSP RDT&E developed systems can provide the trigger for offensive warfare activities, such as those developed by the Navy Information Operations Command (NIOC). (U) This program element includes a rapidly evolving design and application engineering effort to modernize National Security-grade (Type-1) cryptographic equipment and ancillaries with state-of-the-art replacements in order to counter evolving and increasingly sophisticated threats. Communication Security (COMSEC) and Transmission Security (TRANSEC) evolution is from stand-alone dedicated devices to embedded modules incorporating National Security Agency (NSA) approved cryptographic engines, loaded with the certified algorithms and key, and interconnected via industry-defined interfaces. This includes the Department of Defense (DoD) Global Information Grid (GIG) Capabilities Requirements Document (CRD) for the development of Content Based Encryption (CBE) continuing in Fiscal Year (FY) 2006-2011. (U) In addition to protecting National Security information, ISSP RDT&E must provide enterprise-wide assurance for statutorily protected information under the Privacy Act of 1974, Computer Matching and Privacy Protection Act of 1988, Medical Records Confidentiality Act of 1995, Model State Public Health Privacy Act, 45 Code of Federal Regulation (CFR) subtitle A sub-chapter C, parts 160- 164, 1999, and the Federal Education Records Privacy Act. ISSP RDT&E efforts must also provide assurance to the broad spectrum of Sensitive-but-Unclassified (SBU) information such as financial, personnel, contractor proprietary, and procurement sensitive. (U) The ISSP today includes much more than legacy Communications Security (COMSEC) and Network Security (NETSEC) technology. IA or Defensive Information Operations, exists to counter a wide variety of threats in a Navy environment. ISSP activities cover all telecommunications systems, and RDT&E projects must provide protection, detection, and reaction capabilities to the operational commander. ISSP RDT&E provides dynamic risk managed IA solutions to the Navy Information Infrastructure, not just security devices placed within a network. (U) Few technology areas change as fast as telecommunications and computers, and IA must keep pace. This results in the continuing need to evaluate, develop, and/or test IA products and approaches. Technology-based efforts include developing or applying: (1) new secure voice prototypes; (2) technology for a new family of programmable COMSEC and Transmission Security TRANSEC modules; (3) security appliances and software for switched and routed networks; (4) technology to interconnect networks of dissimilar classification, known as Cross Domain Solutions (CDS); (5) techniques for assuring code and data residing in and transiting the Navy's computing base and information store; and (6) Public Key Infrastructure (PKI) and associated access control technologies (such as SmartCards and similar security tokens). (U) The resulting expertise applies to a wide variety of Navy development programs that must integrate IA technology. Unlike traditional single-product development programs, the ISSP RDT&E holds a unique Navy-enterprise responsibility outlined in SECNAVINST 5239.3 and OPNAVINST 5239.1C.								

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY
(U) The Information Systems Security Program (ISSP) Research Development Test & Evaluation (RDTE) efforts must conclude with certified and accredited systems. This requires (1) assured separation of information levels and user communities, including coalition partners; (2) assurance of the telecommunications infrastructure; (3) assurance of Joint user enclaves; (4) assurance of the computing base and information store; and, (5) supporting assurance technologies, including Public Key Infrastructure (PKI) and directories. To ensure interoperability and commercial standards compliance, these efforts often encompass the research, selective evaluation, integration, and test of commercial-off-the-shelf/Non-Developmental Item (NDI) Information Assurance (IA) security products. For example, evaluation may include defensible network boundary capabilities such as firewalls, secure routers and switches, guards, Virtual Private Networks (VPN), and network Intrusion Prevention Systems (IPS). (U) The current operating environment has virtually eliminated the traditional distinction between telecommunications and information systems. Because (IA) is a cradle-to-grave enterprise-wide discipline, this program applies the technology and methodology to systems in development, production and operation, and develops the infrastructure needed to support and evaluate the security of deployed systems. The following describes several major ISSP technology areas: (U) Under the Navy Secure Voice (NSV) program, ISSP RDT&E assesses technology to provide high grade, secure tactical and strategic voice connectivity. (U) Under the Navy Cryptographic Modernization Program, ISSP RDT&E provides high assurance and other cryptographic technologies protecting information and telecommunication systems. (U) Under the Navy Security Management Infrastructure (SMI) program, ISSP RDT&E develops, evaluates, and applies new emerging technology and enhanced capabilities to the Electronic Key Management System (EKMS)/KMI and other Navy Information Systems. Additional efforts will focus on the architecture, design, and development of systems to manage the security parameters (i.e., cryptographic keys) necessary to the operation of the systems developed by the Secure Data and Secure Voice portions of the ISSP. This includes the application of PKI and Certificate Management Infrastructure (CMI) technology, and the development of improved techniques for key and certificate management to support emerging, embedded cryptographic technology. (U) Under the Secure Data program, efforts focus on architectures, designing, acquiring, demonstrating and integrating the IA technologies into FORCEnet and the Navy Marine Corp Intranet (NMCI). This portion of the ISSP supports delivery of network security engineering expertise needed to support the NMCI, outside the continental United States (OCONUS) Navy Enterprise Network (ONE-NET), and the Integrated Shipboard Network Systems (ISNS), along with constituent systems such as Automated Digital Network System (ADNS), Global Command and Control System - Maritime (GCCS-M). Begin transitioning to an Open Architecture (OA) in support of the Consolidated Afloat Networks and Enterprise Services (CANES) Common Computing Environment (CCE) and Afloat Core Services (ACS). It includes activities to: • Ensure that the United States Navy (USN) telecommunications and networks follow a consistent architecture and are protected against denial of service. • Ensure that all data within the USN Enterprise is protected in accordance with its classification and mission criticality, as required by law. • Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event. • Support the USN Computer Network Defense (CND) Service Provider Enabler by providing IA response to Information Operation Conditions (INFOCONS). • Defend against the unauthorized modification or disclosure of data sent outside enclave boundaries. • Provide a risk-managed means of selectively allowing essential information to flow across the enclave boundary. • Provide strong authentication of users sending or receiving information from outside their enclave. • Defend against the unauthorized use of a host or application, particularly operating systems. • Maintain configuration management of all hosts to track all patches and system configuration changes. • Ensure adequate defenses against subversive acts of trusted people and systems, both internal and external. • Transition to CCE. • Transition to ACS.		

Exhibit R-2a, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY
• Provide a cryptographic infrastructure that supports key, privilege and certificate management; and that enables positive identification of individuals utilizing network services. • Provide an intrusion detection, reporting, analysis, assessment, and response infrastructure that enables rapid detection and reaction to intrusions and other anomalous events, and that enables operational situation awareness. (U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.		

Exhibit R-2a, RD TEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10	FY 11
Computer Network Defense (CND)	8.806	8.681	8.055	
RDT&E Articles Quantity				

FY 08: Completed the security situational awareness technologies for knowledge empowered Computer Network Defense (CND) operations for both ship and shore installations. Established system management capabilities to enforce proactive unit level security policies across the Navy Network Enterprise to centrally manage security policies to controllable devices such as Firewalls, Intrusion Prevention Systems (IPS), and Filtering Routers at shore based Network Operations Centers (NOC). Included Information Assurance (IA) appliances, software, and implementation techniques for automated response products such as vulnerability remediation, Information Operation Condition (INFOCON) response, and intrusion prevention policies. Completed the development and integration of the patch management and host based security agents tools. Developed additional tools to determine accurate asset location and inventory information. Initiated the development of the process to assign asset criticality at the host and application level through the use of the data in the new tool. Integrated Joint Task Force-Global Network Operations (JTF-GNO) IA applications and implemented Component Task Orders (CTO) for Joint policies such as Information Assurance Vulnerability Alert (IAVA) scanning and remediation, Information Operation Condition (INFOCON) response, and Host Based Security Solution (HBSS) policy. Translated IA engineering and FORCEnet capabilities into an initial program Capability Production Document (CPD) to acquire advanced CND solutions to support a range of initiatives meeting Joint Command-Control IA & security situational awareness, Navy tactical edge attack sensing & warning, and cyber defense indications & warning in information sharing network operations. Conducted a pilot to address data-at-rest protection on mobile and removable devices.

FY 09: Continue system integration efforts with analytical tools to identify asset criticality at the host and application level. Develop computer-network evaluation capabilities to perform real-time metrics of operational compliance with IA security controls, Mission Assurance Category, and Data Confidentiality. Evolve system incremental capabilities to advance CND Protect, Monitor, Detect, Analyze, and Respond. Conduct Honey Net Research to develop proactive Insider Threat Countermeasures and Application Layer Content Scanning. Develop User Defined Operational Pictures (UDOP) to enhance Security Information Manager (SIM) tools with active defense capabilities, improved incident correlation, and situation awareness reporting. Complete the development of the process to assign asset criticality at the host and application level. Initiate the development of new capabilities to support the selective and automatic reactive settings of the network in accordance with INFOCON policies. Address the capabilities required to support the INFOCON management at both the Naval Cyber Defense Operation Center (NCDOC) and the Fleet NOC level.

FY10: Begin the development of the process to assign asset criticality at the host and application level. Advance development of proactive Insider Threat Countermeasures and application layer security risk monitoring. Develop User Defined Operational Pictures (UDOP) to enhance Security Information Management (SIM) tools. Initiate research to analyze Information Assurance capabilities to support Afloat Core Services (ACS) systems with selective and autonomic settings on the CND posture as a proactive response to threat attack sensors and vulnerability indications. Address the capabilities required to support CND management of a ACS platform from a tiered enclave organizational level, network operations intermediate level, and global enterprise management level. Begin transition to Consolidated Afloat Network Enterprise Services (CANES) Increment 1.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)		PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY

	FY 08	FY 09	FY 10	FY 11
Crypto/Crypto Modernization	6.638	8.729	7.339	
RDT&E Articles Quantity				

FY08: Completed development support efforts in coordination with the Information Systems Security Office, Joint Services, and the National Security Agency (NSA). Completed development efforts and acquisition documentation for identified and selected KEESEE Cryptographic products as the Integrated Product Team (IPT) completed at 100%. Completed SAVILLE Integrated Product Team (IPT) (90% Crypto's identified). Completed major preacquisition and development of specification for KGR-68. Provided consistent Information Assurance (IA) engineering support for on-going development of Crypto Modernization devices including Universal Crypto Device (UCD), KG-45, KL-51 and KG-68B. Completed development and testing of Cryptographic Module (Engine) in a joint effort with other services and a next generation cryptographic device for replacing identified legacy devices providing for secure communication capabilities to the war fighter. Completed additional pre-acquisition and development of on-going Decertified Cryptographic Algorithms affecting legacy Department of the Navy (DoN) Cryptographic Devices.

FY09: Continue to provide Cryptographic Products, including Type-1 United States (US) only, allied and coalition, and Commercial-Off-the-Shelf (COTS) to DoN. Continue research, evaluation, and prioritization of cryptographic products. Provide consistent IA engineering support for the development and integration of Crypto Modernization products and being major pre-acquisition and development specification for KGV-68. Complete development and testing of first UCD module in a joint effort with other services. Begin installation of identified first device groupings. Continue development and testing of on-going Decertified Cryptographic Algorithms affecting legacy DoN Cryptographic Devices and Communication Security (COMSEC). Continue pre-acquisition and development of on-going Decertified Cryptographic Algorithms affecting legacy DoN Cryptographic Devices. Develop program documentaiton and way ahead Crypto identified devices. Continue to support the on-going Cryptographic Joint IPT. Continue pre-acquisition and development of LINK 16 Common Crypto Module (CCM), VINSON/ANDVT Crypto Mod (VACM), Programmable Objective Encryption Technologies (POET), KW-46 Fleet Submarine Broadcast System (FSBS), and Telemetry. The Crypto Modernization Program Office (CMPO) will be developing LINK 16, KW-46 and VACM. Modernizing these devices will provide replacments in accordance with the Joint Chief of Staff's modernization schedule and National Security Agency (NSA) planned decertification.

FY10: Continue research, evaluation, and prioritization of cryptographic products such as Demand Assigned Multiple Access (DAMA), portable tactical radios, Single Channel Ground and Airborne Radio System (SINCGARS), Integrated Broadcast Service Multi Mission Advanced Tactical Terminal (IBS MATT), and various embedded devices. Continue coordination with the Information Systems Security Office, Joint Services, and the NSA, including representing the Navy at the Joint Service Crypto Mod Working Group (JSCMWG). Continue identifying strategies to reduce the overall crypto inventory within the DoN to realize long term cost savings. Continue providing consistent IA engineering support for the development and integration of Crypto Modernization products. Continue to support to the on-going Cryptographic Joint Algorithm IPT. Continue development for the Link-16 CCM. Secure Voice research and development efforts will transition under CMPO, including Small Business Inovative Research (SBIR) oversight, and Naval Research Laboratory's (NRL) research into Secure Voice emerging technologies and related technical products. In addition, research and development funding support to the VACM program will transition to CMPO as well. The United States Navy (USN) will participate in the United States Air Force (USAF) led VACM program by providing Secure Voice technical support, documentation review, acquisition and logistic support, and test and evaluation support. Initiate major acquisition and development of KL-51. Continue acquisition efforts for development of KL-51M, KW-46M, Fixed Submarine Broadcast System (FSBS), and Link 22 Modernized Link Level Comsec (MLLC). Continue Crypto voice standardization based on the Variable Data Rate (VDR), Voice Compression Algorithm (VCA).

Exhibit R-2a, RD TEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY	

	FY 08	FY 09	FY 10	FY 11
Secure Voice	1.056	1.115	0.000	
RDT&E Articles Quantity				

FY08: Completed development and integration test of Submarine Secure Communication Interoperability Protocol (SCIP) Inter-Working Function (IWF) gateway to provide off-ship secure communication capabilities while underway. Completed development and tested a SCIP IWF to provide off-ship secure voice communications to underway Military Sealift Command (MSC) ships and Coast Guard ships. Completed development of the Variable Data Rate Voice Encoder and its baseline interface software. Completed generation of baseline functionality (derived from operational and mission requirements and new technologies) and design of a functional model for development of next generation secure voice products.

FY09: Complete development and integration test of the SCIP IWF for MSC and Coast Guard ships. Continue the design and development of next generation voice and Secure Voice capabilities for shipboard voice services modernization and consolidation. Continue Small Business Innovative Research (SBIR) phase II R&D efforts.

FY10: Transition from Secure Voice to the Crypto Modernization Program for VINSON/ANDVT Crypto Mod (VACM) and R&D technology efforts.

Exhibit R-2a, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)			PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY
	FY 08	FY 09	FY 10	FY 11	
Key Management Infrastructure (KMI/EKMS/PKI)	5.228	4.043	0.000		
RDT&E Articles Quantity					

FY08: Completed streamline method for developing effective secure symmetric and asymmetric cryptographic key and generation, distribution, management, and usage products and services by identifying and prioritizing fleet requirements. Completed Electronic Key Management System (EKMS) Phase V to include development and implementation of an extended, networked architecture (key distribution over Secret Internet Protocol Router Network (SIPRNet) to improve distribution and reliability for deployed forces, modernized key processors, common user application software and data transfer devices. Completed Wireless Key Fill technology design and development. Completed review/ input for Key Management Infrastructure (KMI) Capability Increment 2 (CI-2) client and Advanced Key Processor (AKP) Capability Development Document (CDD), including testing and Hub Management Interface (HMI) development. Completed review of initial KMI CI-3 capability CDD development and design including Benign Fill and single point keying. Supported and ensured coordinated developments for KMI/EKMS in the transition from Internet Protocol Version 4 (IPV4) to IPV6. Completed security and functionality testing and evaluation of Public Key Infrastructure (PKI) tokens, readers and middleware for the SIPRNET. Researched security and functionality testing and evaluation of PKI Non-classified Information Protocol Router Network (NIPRnet) tokens and readers to upgrades to middleware, in support of the Homeland Security Presidential Directive 12 (HSPD-12) biometrics based smart cards. Completed research and development of solutions to resolve technical challenges and the tools required for deployment of both Navy non-Navy Marine Corps Internet (NMCI) Cryptographic Logon (CLO), CLO for non-Windows operating systems, and Navy Certificate Validation Infrastructure/On Line Certificate Status Protocol (NCVI/OCSP) Afloat. Researched and developed tools to support Microsoft VISTA implementation, PKI with IPv6 Device (non-human) Certificates, and signature applications/XML document signing. Completed development and integration of NCVI/OCSP ashore. Completed Defense Message System (DMS) migration to PKI. Supported the development and testing of Tactical PKI (as part of DoD KMI) and its supporting architecture.

FY09: Continue KMI CI-2 client and Advanced Key Processor (AKP) security testing and certification and accreditation. Continue Navy input to KMI CI-3 CDD development (led by National Security Agency NSA) for Advanced Extremely High Frequency (AEHF), Transformational Satellite (TSAT), and Global Information Grid (GIG) requirements for Navy. Research and integrate PKI device certificates for mobile devices using 802.1x interfaces. Continue security and functionality testing and evaluation of PKI Non-classified Information Protocol Router Network (NIPRnet) and Secret Information Protocol Router(SIPRnet) tokens and readers to support Tactical PKI and HSPD-12 implementation. Continue to research and develop solutions and tools for signature applications/XML document signing and Public Key Enabled (PKE).

FY10: Transition KMI efforts to define EKMS, PKI, and KMI technology areas.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY

	FY 08	FY 09	FY 10	FY 11
Key Management Infrastructure (KMI)			2.522	
RDT&E Articles Quantity				

FY08: Transitioned from Key Management Infrastructure (KMI) to define Electronic Key Management System (EKMS), Public Key Infrastructure (PKI), and KMI technology areas.

FY09: Transition from KMI to define EKMS, PKI, and KMI technology areas.

FY10: Begin to finalize the Department of the Navy (DoN) KMI architecture and roll out strategy for deployment. Install KMI Manager Client/Advanced Key Processor (MGC/AKPs) at selected pilot sites in support of operational assessment. Identify any issues pertaining to transition from EKMS. Provide supporting information to Navy Acquisition Decision Memorandum (ADM) for full rate fielding within the Navy. Finalize Navy KMI Capability Increment 3 (CI-3) Capability Development Document (CDD) requirements. Continue engineering efforts for Navy transition and test planning for KMI CI-2 client and Advanced Key Processor (KP). Develop Navy implementation plan for KMI. Complete development of Tactical Key Loader (TKL), complete First Article and National Security Agency (NSA) Certification testing. Transition to production.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY	

	FY 08	FY 09	FY 10	FY 11
Public Key Infrastructure (PKI)			0.792	
RDT&E Articles Quantity				

FY08: Transitioned from Key Management Infrastructure (KMI) to define Electronic Key Management System (EKMS), Public Key Infrastructure (PKI), and KMI technology areas.

FY09: Transition from KMI to define EKMS, PKI, and KMI technology areas.

FY10: Initiate security and functionality testing and evaluation of multi-domain tokens, readers and middleware for the Non-Classified Internet Protocol Router (NIPR) Secret Internet Protocol Router (SIPR), and Tactical Public Key Infrastructure (PKI). Continue research and development of solutions to resolve technical challenges and the tools required for continued deployment of Navy non-Navy, Marine Corps Internet (NMCI) Cryptographic Log On (CLO) and Navy Certificate Validation Infrastructure/Online Certificate Status Protocol (NCVIOCSP) Afloat. Research and develop tools to support Device (non-human) Certificates. Continue security and functionality testing and evaluation of PKI tokens and readers to support Tactical PKI and Homeland Security Presidential Directive-12 (HSPD-12) implementation. Support systems engineering during the integration process and the analysis/evaluation of new application updates including new Operating Systems (OSs) (Windows and non-Windows) into Navy PKI environments. Provide for evaluation of Commercial -Off-the-Shelf (COTS) products that can support coalition information sharing. Initiate test and evaluation of HSPD-12 token and middleware as part of the transition to stronger algorithms. Research and develop tools to support PKI with Internet Protocol Version 6 (IPv6) and Suite B implementation.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY	

	FY 08	FY 09	FY 10	FY 11
Electronic Key Management System (EKMS)			0.427	
RDT&E Articles Quantity				

FY08: Transitioned from Key Management Infrastructure (KMI) to define Electronic Key Management System (EKMS), Public Key Infrastructure (PKI), and KMI technology areas.

FY09: Transitioned from KMI to define EKMS, PKI, and KMI technology areas.

FY10: Continue to define EKMS technology gaps in preparation to the transition to KMI . Identify technical solutions for EKMS sustainment until KMI CI-3.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)		PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY	

	FY 08	FY 09	FY 10	FY 11
Information Assurance Architectures	2.841	2.252	2.891	
RDT&E Articles Quantity				

****Transitioned from Emerging Technology**

FY08: Provided security systems engineering support for the development of the Department of Defense (DoD) and the Department of the Navy (DoN) Information Assurance (IA) architectures and the transition of new technologies to address Navy IA challenges. Supported the ongoing security design and integration of Computer Network Defense in Depth (CNDiD) products and services for the Navy's implementation of the Global Information Grid (GIG) via FORCEnet and major initiatives such as Transformational Communication (TC), Global Information Grid Enterprise Services (GIG-ES). Provided risk analysis and recommended risk mitigation strategies for Navy critical networks and Command, Control, Computers, Communications C4I systems. Coordinated with the Navy acquisition community to ensure IA requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Provided IA engineering for development of Wireless Networks and Personal Digital Assistant (PDA) security readiness of Naval wireless networks and mobile computing devices.

FY09: Continue to provide security systems engineering support for the development of DoD and DoN IA architectures and the transition of new technologies to address Navy IA challenges. Support the ongoing security design and integration of IA Components into initiatives such as FORCEnet via a coordinated and CNDiD strategy. Provide risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Coordinate with the Navy acquisition community to ensure IA requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Provide IA engineering for development of Wireless Networks and PDA security readiness of Naval wireless networks and mobile computing devices. Continue to evaluate products for security issues and develop guidance and procedures.

FY10: Continue to provide security systems engineering support for the development of DoD and DoN IA architectures and the transition of new technologies to address Navy IA challenges. Support the ongoing development of the Navy IA Master Plan and coordinate IA activities across the virtual System Command (SYSCOM) via the IA Technical Authority (TA) to ensure the security design and integration of CNDiD products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and Outside the Continental United States (OCONUS) networks. Provide IA risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Coordinate with the Navy acquisition community to ensure IA requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Provide IA engineering for development of Wireless Networks and PDA security readiness of Naval wireless networks and mobile computing devices. Continue to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate IA controls.

Exhibit R-2a, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NAME AND NUMBER 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY

(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>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
OPN 3415 Info Sys Security Program (ISSP)	121.319	100.855	119.054					

(U) D. ACQUISITION STRATEGY:

EKMS Phase V - The Navy's Information Systems Security Program (ISSP) Electronic Key Management System (EKMS) program is linked to the National Security Agency's (NSA) strategy in implementing EKMS in evolutionary phases and migrating to Key Management Infrastructure (KMI). NSA is the lead for the joint EKMS effort and has been developing and certifying EKMS devices and capabilities in an evolutionary approach. EKMS Phase V is a major component evolving to KMI Capability Increment 2 (CI-2). KMI is a Major Automated Information System (MAIS) program assigned to NSA. Therefore, it is crucial that the Research and Development efforts of EKMS coincide with those of KMI. Navy's EKMS requires Research, Development, Test and Evaluation (RDT&E) funding over the Future Years Defense Program (FYDP) to ensure the Navy infrastructure evolves with the EKMS phases, supports additional devices certified by NSA and supports the migration of EKMS to KMI CI-2. This will require potential modifications to the Navy EKMS architecture including the Local Management Device (LMD) and associated software. These efforts require close work with NSA and the other services to ensure no impact on current operations and minimum impact on EKMS Phase 5 as it evolves to KMI CI-2. NSA certified Commercial-Off-The-Shelf/Government-Off-The-Shelf (COTS/GOTS) devices are procured to support Navy requirements. The EKMS Phase V program will utilize existing competitively awarded NSA and Space and Naval Warfare Systems Centers (SSCs) contracts for development and implementation of type 1 certified COTS/GOTS devices for initial production phases, with plans to initiate innovative contracting methods and types consistent with current Assistant Secretary of the Navy Research, Development & Acquisition (ASN/RDA) policies to reduce cost and streamline the integration, installation, logistics and training efforts.

KMI - KMI is the next generation EKMS system that is net centric in nature, providing the infrastructure for management, ordering and distribution of key material as well as directly supporting the key requirements of all Crypto modernization efforts. Navy will continue to provide and refine Navy unique requirements into the NSA KMI CI-2 and CI-3 Capability Development Documents (**CDD**). In parallel, continue to define Navy operational architecture and requirements for roll out of this new capability in the Fiscal Year 2010/2011 timeframe.

Crypto Modernization (KW-46 Replacement) - Evaluating acquisition development replacements of the KG-45, KL-51, KG-68B cryptographic devices per the UCD effort, the Navy has refined the requirement specifications, preparing formal Analysis of Alternatives (AoA), Request For Information (RFIs), and Life Cycle Cost Estimates (LCCEs) in first quarter (1Q) Fiscal Year 2008.

Exhibit R-2a, RDTEN Budget Item Justification

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)				PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY					
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	C/CPFF	VIASAT, Carlsbad, CA	7.282							7.282	7.282	7.282
Primary Hardware Development	C/MIPR	MITRE, San Diego, CA	5.522							5.522	5.522	5.522
Primary Hardware Development	C/VAR	Various	85.489	3.118	VAR	5.483	VAR			Continuing	Continuing	Continuing
Systems Engineering	C/VAR	Various	86.246	11.310	VAR	10.080	VAR			Continuing	Continuing	Continuing
Subtotal Product Development			184.539	14.428		15.563				Continuing	Continuing	Continuing
Remarks:												
Software Development	CPAF	SAIC, San Diego, CA	32.877							32.877	32.877	32.877
Software Development	C/WX	NRL, Washington, D.C.	2.953	0.197	11/09	0.494	11/10			Continuing	Continuing	Continuing
Software Development	C/VAR	Various	2.408	1.217	11/09	1.088	11/10			Continuing	Continuing	Continuing
Subtotal Support			38.238	1.414		1.582				Continuing	Continuing	Continuing

Exhibit R-3, Project Cost Analysis

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)				PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY					
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	VAR	Various	30.271	4.357	VAR	0.495	VAR			Continuing	Continuing	Continuing
Subtotal T&E			30.271	4.357		0.495				Continuing	Continuing	Continuing
Remarks:												
Program Management Support	CPAF	Various	13.227	4.621	VAR	4.386	VAR			Continuing	Continuing	Continuing
Subtotal Management			13.227	4.621		4.386				Continuing	Continuing	Continuing
Remarks:												
Total Cost			266.275	24.820		22.026				Continuing	Continuing	Continuing
Remarks:												

Exhibit R-3, Project Cost Analysis

[illegible]

Notes:

Note (1): EKMS Phase V IOC and delivery dates have continued to change as NSA schedule slips.

Note (2): KMI Milestone needed to reflect KMI objective schedule.

Note (3): TKL AAP designation approved 24 Mar 2009.

Note (4): TKL First Article Test, Production milestone, and delivery events not previously captured.

Note (5): Administrative change to record KG-3X Inc 1 MS C approval dated Jan. 2008.

Note (6): KW-46, Link 22 MLLC, KL-51M realignment of requirements not captured from previous submission.

Note (7): CND AAP established as Inc 1, with entry into Inc 2 post MS C authorized by ADM dated 13 Feb 2009.

Note (8): CND CPD was delayed to allow CPF (Commander, U.S. Pacific Fleet) time to resolve critical issues

Note (9): KG-40AR IV & V test & KG-45 production decision not

EXHIBIT R4, Schedule Profile													DATE: May 2009																			
APPROPRIATION/BUDGET ACTIVITY													PROJECT NUMBER AND NAME																			
RDT&E, N / BA-7													0734 INFORMATION SYSTEMS SECURITY																			
	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				
Production Milestones																																
TKL FRP (Note 2)																																
KL-51M Production Descision (Note 7)																																
KG-45 Production Descision(Note 7)																																
KG-40AR PM Prod Decision Rev/Award																																
KG-3X Inc 1 First Article Test																																
CND Inc 2 LRIP Install Begins (Note 5 & 6)																																
Deliveries																																
EKMS Phase V S/W Delivery LCMS 5.1 (Note 1)																																
EKMS Phase V S/W Delivery LCMS 5.2																																
TKL Deliveries (Note 2)																																
KG-3X Inc 1 Deliveries (Note 4)																																
KW-46 Delivery (Note 3)																																
Link - 22 MLLC Prototype Delivery (Note 3)																																
KG-40AR Deliveries																																
KG-45A Deliveries																																
CND AAP CND-OSE Deliveries																																
CND Inc 2 deliveries (Note 5 & 6)																																

Notes:

Note (1): EKMS Phase V IOC and delivery dates have continued to change as NSA schedule slips.

Note (2): TKL First Article Test, Production milestone, and delivery events not previously captured.

Note (3): KW-46, Link 22 MLLC, KL-51M realignment of requirements not captured from previous submission.

Note (4): KG-3X Inc 1 deliveries not previously captured.

Note (5): CND AAP established as Inc 1, with entry into Inc 2 post MS C authorized by ADM dated 13 Feb 2009.

Note (6): CND CPD was delayed to allow CPF (Commander, U.S. Pacific Fleet) time to resolve critical issues. The delay affects CND Inc 2 OT, LRIP installs, and deliveries.

Note (7): KG-40AR IV & V test, KG-45, KL-51M production decision not captured from previous budget submission.

Exhibit R-4a, Schedule Detail				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)			PROJECT NUMBER AND NAME 0734 INFORMATION SYSTEMS SECURITY				
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Crypto Modernization KW-46 FSBS AoA	3Q							
CANES Transition			1Q					
CANES Inc 1 MC B			3Q					
EKMS Phase V IOC (Note 1)		4Q						
TKL AAP Designation(Note 3)		2Q						
CND Inc 2 CPD (Note 8 and 9)		4Q						
CND Inc 2 MS C (Note 8 & 9)			3Q					
KG-3X Inc 1 MS C (Note5)	1Q							
KG-3X Inc 2 MS C			2Q					
KG-45A-IOC		3Q						
KW-46 IOC (Note 6)			2Q					
KMI MS C (Note 2)			4Q					
Link 22 MLLC Prototype Award (Note 6)		4Q						
Developmental Test								
EKMS Phase V Qualification Test	2Q							
Crypto KG-45A NSA Cert		1Q						
KW-46 NUWC Integration Testing (Note 5)		4Q						
KL-51M Test & Evaluation (Note 6)		4Q						
TKL FA Test (Note 4)		4Q						
KG-40AR IV/V Test (Note 10)			2Q					
Operational Test								
EKMS Phase V Operational Test		1Q						
Production Milestones								
TKL FRP (Note 4)			1Q					
KL-51M Production Decision (Note 10)		4Q						
KG-45 Production Decision (Note 10)		4Q						
KG-40AR PM Prod Decision Rev/Award	2Q							
KG-3X Inc 1 First Articles	1Q							
CND Inc 2 LRIP Installs Begin (Note 8 and 9)			4Q					
Deliveries								
EKMS Phase V S/W Delivery LCMS 5.1 (Note 1)		4Q						
EKMS Phase V S/W Delivery LCMS 5.2			2Q					
TKL Deliveries (Note 4)			2Q-4Q					
KG-3X Inc 1 Deliveries (Note 7)		3Q						
KG-40AR Deliveries		3Q-4Q	1Q-4Q					
KG-45 A Deliveries		3Q-4Q	1Q-4Q					
CND AAP CND-OSE Deliveries	3Q							
CND Inc 2 deliveries (Note 8 and 9)			4Q					

Exhibit R-4, Schedule Detail

Notes:

- Note (1): EKMS Phase V IOC and delivery dates have continued to change as NSA schedule slips.
- Note (2): KMI Milestone needed to reflect KMI objective schedule.
- Note (3): TKL AAP designation approved 24 Mar 2008.
- Note (4): TKL First Article Test, Production milestone, and delivery events not previously captured.
- Note (5): Administrative change to record KG-3X Inc 1 MS C approval dated Jan. 2008.
- Note (6): KW-46, Link 22 MLLC, KL-51M realignment of requirements not captured from previous submission.
- Note (7): KG-3X Inc 1 deliveries not previously captured.
- Note (8): CND AAP established as Inc 1, with entry into Inc 2 post MS C authorized by ADM dated 13 Feb 2009.
- Note (9): CND CPD was delayed to allow CPF (Commander, U.S. Pacific Fleet) time to resolve critical issues. This delay affects CND Inc 2 OT, LRIP installs, and deliveries.
- Note (10): KG-40AR IV & V test & KG-45 production decision not captured from previous budget submission.

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-7	0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)			R0734/R3230/ONR BSO 14				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost - R0734	2.121	2.137	0.000					
Project Cost - R3230	0.000	0.000	2.200					
RDT&E Articles Qty								

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

The goal of the Navy Information Systems Security Program (ISSP) is to ensure the continued protection of Navy and Joint information and information systems from hostile exploitation and attack. ISSP activities address the triad of Defense Information Operations: protection, detection, and reaction. Evolving attack sensing (detection), warning, and response (reaction) responsibilities extend far beyond the traditional ISSP role in protection or Information Systems Security (INFOSEC). Focused on the highly mobile forward-deployed subscriber, the US Navy's adoption of Network-Centric Warfare (NCW) places demands upon the ISSP, as the number of users explodes and the criticality of their use escalates. Today, the ISSP protects an expanding core of services critical to the effective performance of the Navy's mission.

The rapid rate of change in the underlying commercial and government information infrastructures makes the provision of security an increasingly complex and dynamic problem. Information Assurance (IA) technology mix and deployment strategies must evolve quickly to meet rapidly evolving threats and vulnerabilities. The ISSP enables the Navy's war fighter to trust in the availability, integrity, authentication, privacy, and non-repudiation of information.

This project includes funds for advanced technology development, test and evaluation of naval information systems security based on leading edge technologies that will improve information assurance (e.g., situational awareness and information infrastructure protection) across all Command echelons to tactical units afloat and war fighters ashore. This effort will provide the research to develop a secure seamless interoperable, common operational environment of networked information systems in the battle space and for monitoring and protecting the information infrastructure from malicious activities. This effort will provide Naval Forces a secure capability and basis in its achievement of protection from unauthorized access and misuse, and optimized IA resource allocations in the information battle space. This program will also develop core technology to improve network infrastructure resistance and resiliency to attacks; enable the rapid development and certification of security-aware applications and information technologies in accordance with the Common Criteria for IA and IA-Enabled information technology products by the National Security Telecommunications and Information Systems Security Instructions; and measure the effectiveness and efficiency of IA defensive capabilities under Naval environments.

The program will develop common architectural frameworks that facilitate integration of network security capabilities, enable effective seamless interoperability, and contribute to a common consistent picture of the networked environment with respect to information assurance and security. This effort will address the need for a common operational picture for Information Assurance (IA), as well as assessment of security technology critical to the success of the mission. Initiate requirements definition for situation awareness capabilities to support computer network defense in highly distributed, homogeneous, and heterogeneous networks including mobile and embedded networked devices. This effort also includes the architectural definition of situational awareness and visualization capabilities to support active computer network defense and support underlying data mining and correlation tools. This includes addressing the capability to remotely manage and securely control the configurations of network security components to implement changes in real time or near real time. Initiate requirements definition for secure coalition data exchange and interoperation among security levels and classifications. Ensure approaches address various security level technologies as well as emerging architectural methods of providing interoperability across different security levels. Examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Initiate infrastructure protection efforts as the Navy develops network centric architectures and warfare concepts, ensuring an evolutionary development of security architectures and products for IA that addresses Navy infrastructure requirements. Ensure the architectures evolve to provide proper protection as technology, DoD missions, and the threat all evolve. Include defensive protections as well as intrusion monitoring (sensors), warning mechanisms, and response capabilities in the architecture. Ensure the unique security and performance requirements of tactical systems, including those operating various security levels are addressed. Initiate the efforts to conceptualize new network centric warfare technology to protect our assets, such as secure network gateways and routers, and components and tools that improve the survivability of Navy networks. Provide systems security engineering, certification and accreditation support for high-confidence naval information system and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

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

Exhibit R-2a, RDTEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISS)	PROJECT NUMBER AND NAME R0734/R3230/ONR BSO 14	

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	FY 2011
Software and Systems Research R0734	2.121	2.137	0.000	
Software and Systems Research R3230	0.000	0.000	2.200	
RDT&E Articles Quantity				

FY08: Continued working with commercial wireless technology to meet high assurance requirements, with particular emphasis on Navy and Marine Corps network centric environments. Initiated the development of wireless technology to augment the security posture of the commercial wireless technology. Continued the development of an information sharing architecture that addresses data integrity, confidentiality and policy management throughout networks of varying classification levels. Within the architecture/infrastructure, enhanced the framework to provide on-demand security services that supported confidentiality, integrity and authentication across security domains, as well as enforced the mission security policy. Completed development and refinement of infrastructure protection and architectures for Navy network centric architectures and warfare concepts. Ensured the architectures evolved to provide proper protection as technology, DoD missions, and the threat all evolve. Included improved defensive protections and response capabilities in the architecture, as well as provided support for traditional intrusion monitoring (sensors) and warning mechanisms. Developed technology and/or tools to ensure the unique security and performance requirements of tactical systems, including those operating at various security levels are addressed. Completed systems security engineering, certification and accreditation support for high-confidence naval information system and ensured certification and accreditation approaches were consistent with Navy and DoD requirements.

FY09: Complete the development of the wireless technology to meet high assurance requirements. Place the technology in selected Navy and Marine Corps sites for assessment. Use the feedback to improve the capabilities of the technology to better meet the mission requirements. Continue the development of an information sharing architecture that addresses data integrity, confidentiality and policy management throughout networks of varying classification levels. Evaluate the security services of the framework that support confidentiality, integrity and authentication across security domains, as well as enforces the mission security policy. Use the assessment and operational feedback to improve the framework and security services. Enhance the framework to address survivability and hardening. Develop technology that protects the framework from attacks, assesses the attack, and responds appropriately to enable the framework to reconstitute and provide the requisite capabilities/services. Ensure the architecture/framework evolves to provide proper protection as technology, DoD missions, and the threat all evolve. Initiate development of modernized attack sensing and warning mechanisms based on new algorithms and data mining concepts, and response capabilities for the architecture/framework. Continue the development of technology and tools to ensure the unique security and performance requirements of tactical systems, including those operating at various security levels are addressed. Begin assessing the tools and technology in representative operational environments. Use the feedback to improve the tools and technology. Continue systems security engineering, certification and accreditation support for high-confidence naval information system and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

FY10: Complete the development of the information sharing architecture that addresses data integrity, confidentiality and policy management throughout networks of varying classification levels. Evaluate the security services of the architecture and adjust to ensure mission operations are supported. Continue the development of technology that protects, assesses and responds to attacks of the infrastructure architecture and provide reconstitution capabilities/services. Continue the development of modernized attack sensing and warning mechanisms based on new detection algorithms and data mining concepts, and response capabilities for the architecture. Complete the development of technology and tools to ensure the unique security and performance requirements of tactical wireless communication systems are addressed. Initiate the development of a new high assurance boundary controller to protect Navy and Marine Corps data and resources from attack. Provide security services including encryption and data malware analysis in the boundary controller. Initiate the development of a high-assurance computing environment for Navy and Marine Corps use based on trusted platform technology. Develop the appropriate core code, security messages and assurance functions required. Initiate the development of new key and enabling technologies, management tools, and capabilities to address specific Navy and Marine Corps needs. Ensure the new solutions address distribution and management of data and other requisite material. Continue systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME R0734/R3230 COMMUNICATIONS SECURITY(INFORMATION ASSURANCE)

(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>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
OPN 3415 Info Sys Security Program (ISSP)	121.319	100.855	119.054					

(U) D. ACQUISITION STRATEGY:

N/A.

Exhibit R-2a, RD TEN Budget Item Justification

Exhibit R-3, Code Analysis (page 1)						DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E,N / BA-7			0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)				R0734/R3230 COMMUNICATIONS SECURITY(INFORMATION ASSURANCE					
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
Hardware Development												
Subtotal Product Developm			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Software Development	WX	NRL, Washington, D.C.	10.777	2.137	11/09	2.200	11/08			Continuing	Continuing	
Subtotal Support			10.777	2.137		2.200				Continuing	Continuing	
Remarks:												
Note: FY08-FY09 Figures reflect R0734 Communications Security. For FY10 they transition from Communications Security to Information Assurance.												

Exhibit R-3, Project Cost Analysis

Exhibit R-3, Code Analysis (page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (IS				PROJECT NUMBER AND NAME R0734/R3230 COMMUNICATIONS SECURITY(INFORMATION ASSURANCE					
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												
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Program Management Support												
Subtotal Management			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Total Cost			10.777	2.137		2.200				Continuing	Continuing	
Remarks:												
Note: FY08-FY09 Figures reflect R0734 Communications Security. For FY10 they transition from Communications Security to Information Assurance.												

Exhibit R-3, Project Cost Analysis

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-7	0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	9999 CONGRESSIONAL INCREASES		
(U) B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
9A99A Tactical Key Loader	3.092	0.000	0.000	
RDT&E Articles Quantity				
FY08: Tactical Key Loader: Established the TKL as an Abbreviated Acquisition Program. 1) System specification and design, 2) Hardware specification, design, and development of hardware mockups and breadboards, 3) Software specification, design, and development, and 4) Security specification, design, and input into the hardware and software development efforts. 5) Completed Build TKL test and evaluation laboratory with laboratory space provided by SPAWARSYSCEN San Diego (SSC-SD).				

Exhibit R-2a, RD TEN Budget Item Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	PROJECT NUMBER AND NAME 9999 CONGRESSIONAL INCREASES		
(U) B. Accomplishments/Planned Program				
	FY 08	FY 09	FY 10	FY 11
9B00A Universal Description, Discovery, and Integration	2.712	4.288	0.000	
RDT&E Articles Quantity				
FY08: Universal Description, Discovery, and Integration: Completed systems development of a demonstrable prototype that allowed users to discover and access valuable information at the right time based on the user's access clearance and need to know. Efforts also included support for Semantic services based on OWL-S and ebXML, Machine-to-Machine interfaces, and support to bridge OWL-S and WSDL based services. A trusted discovery service ensured that information accessed was at the appropriate level, provided the requisite information and prevented extraneous or unauthorized inputs and access. The web architecture-based solution allowed the user to access this information at the Navy enterprise level and eliminated the need to reconfigure networks and hardware when accessing one domain or another. In order to implement a fully enabled end-to-end network enterprise environment envisioned Net-Centric Operations, completed the development of a component-based architecture called Secure Universal Description, Discovery, and Integration (UDDI). Secure UDDI provided the necessary components to meet the Naval warfighter requirements for both WSDL and OWL-S based services. (1) Secure and non-reputable repository of services and information based on current open standards such as UDDI V3 and OWL-S. (2) Incorporation of NSA certified components for authentication and authorization. (3) Secure discovery of services and information. FY09: Universal Description, Discovery, and Integration: Continue systems engineering to cover continued interoperability requirements for the architecture which demand a common security model to be established. Continue engineering implementation and warfighter/military utility assessment, risk reduction, and operational demonstration. Implement a prototype trusted discovery technology to demonstrate capabilities for integration in a high security, service orientated architecture environment. Begin development of software design, functional and security test plans.				
	FY 08	FY 09	FY 10	FY 11
9E24A Trans Enterprise Services Grid (TSG) Technology Accreditation (TA)	0.000	2.394	0.000	0.000
RDT&E Articles Quantity				
FY09: Trans Enterprise Services Grid (TSG) Technology Accreditation (TA): To develop a capability within PEO C4I / PMW160 / Information Systems Security Program's (ISSP) Computer Network Defense (CND) program. This work will focus on the Vulnerability Remediation Asset Management (VRAM) program and effectively sending and receiving Secure Configuration Compliance Validation Initiative (SCCVI) data generated by Retina scans between the ship and Fleet Numeric Mission Operations Center (FNMOC) facility and receiving information back when applicable. Currently, this process requires the manual intervention of shipboard personnel to collect system scan data, manually initiate a transfer of that data to the FNMOC facility, observe that transaction, manually flush the system of data in cases of failed attempts, ensure the mitigation of any orphaned data in flight during loss of network connection, manually restart the transfer of data, manually confirm the receipt of said data shoreside, and manually log the transaction for post audit purposes. This process consumes far more human attention and intervention than desired due to the fragile nature of afloat network connectivity and frequent disconnections. Initial efforts will seek to leverage the lessons learned throughout the SLAIN Small Business Innovative Research (SBIR) effort, along with complementary research and development efforts undertaken separately, to develop, accredit, and deploy VRAM enhancements that will provide the following four capabilities: • Data persistence during the transfer of information • Guaranteed delivery of VRAM data from ship to shore • Provide an automated confirmation message to shipboard personnel that the scan data delivered successfully • Reporting to be defined during development				

Exhibit R-2a, RDTEN Budget Item Justification

UNCLASSIFIED																																												
EXHIBIT R-2, RDT&E Budget item Justification						DATE: May 2009																																						
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT 0303158M Joint Command & Control Program (JC2)		R-1 Item Nomenclature																																								
RDT&E, N /BA-7 Operational Systems Development		C3210 NET-ENABLED COMMAND CAPABILITY (NECC)																																										
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	FY 2010 TOTAL																																							
*3210 Net Enabled Command Capability (NECC)	1.242	1.987	2.453	0.000	2.453																																							
RDT&E Articles Qty																																												
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Net-Enabled Command Capability (NECC) - is the DoD's principal command and control capability that will be accessible in a net-centric environment and focused on providing the commander with the data and information needed to make timely, effective and informed decisions. NECC is a joint project, which will be developed, integrated, tested and used by all Services to improve interoperability, collaborative planning and rapid decision making across all Joint warfighting functions at the Secretary of Defense, Chairman of the Joint Chiefs (CJCS), Combatant Command (COCOM), Joint Task Force (JTF) and Component levels. NECC will encompass the inherent capabilities of the Global Command and Control System (GCCS) Family of Systems (FoS) plus additional capabilities not met by GCCS FoS and delineated in the Analysis of Alternatives. As directed, one version of NECC will be implemented, integrated and utilized by all Services and Agencies (GCCS-A, GCCS-M, GCCS-AF and GCCS-J capabilities will transition to NECC). *Net-Enabled Command Capability (NECC) - was re-named from Joint command and Control (JC2) Capability by the Information Technology Acquisition Board (ITAB) on March 7, 2006. The project code C2223 was incorrectly identified previously. The correct project number is C3210. (U) B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="text-align: left; padding: 5px;">COST (\$ in Millions)</th> <th style="text-align: right; padding: 5px;">FY 2008</th> <th style="text-align: right; padding: 5px;">FY 2009</th> <th style="text-align: right; padding: 5px;">FY 2010</th> <th style="text-align: right; padding: 5px;">FY 2010 OCO</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right; padding: 5px;">1.242</td> <td style="text-align: right; padding: 5px;">1.987</td> <td style="text-align: right; padding: 5px;">2.453</td> <td style="text-align: right; padding: 5px;">0.000</td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Qty</td> <td style="text-align: right; padding: 5px;">0.000</td> <td style="text-align: right; padding: 5px;">0.000</td> <td style="text-align: right; padding: 5px;">0.000</td> <td style="text-align: right; padding: 5px;">0.000</td> </tr> </tbody> </table> NECC - Current funding (09-10) level establishes the USMC Component Program Management Office (CPMO) for NECC by providing government and contract support in order to influence NECC and align affected USMC programs.									COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO	Accomplishment/Effort Subtotal Cost	1.242	1.987	2.453	0.000	RDT&E Articles Qty	0.000	0.000	0.000	0.000																					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2010 OCO																																								
Accomplishment/Effort Subtotal Cost	1.242	1.987	2.453	0.000																																								
RDT&E Articles Qty	0.000	0.000	0.000	0.000																																								
(U) B: Program Change Summary <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Funding:</td> <td style="width: 15%; text-align: right;">FY 2008</td> <td style="width: 15%; text-align: right;">FY 2009</td> <td style="width: 15%; text-align: right;">FY 2010</td> </tr> <tr> <td>FY 2009 President's Budget</td> <td style="text-align: right;">0.986</td> <td style="text-align: right;">2.000</td> <td style="text-align: right;">2.500</td> </tr> <tr> <td>FY 2010 President's Budget</td> <td style="text-align: right;">1.242</td> <td style="text-align: right;">1.987</td> <td style="text-align: right;">2.453</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">0.256</td> <td style="text-align: right;">-0.013</td> <td style="text-align: right;">-0.047</td> </tr> </table> Summary of Adjustments <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">a. SBIR/STTR Transfer:</td> <td style="width: 15%; text-align: right;">-0.007</td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> </tr> <tr> <td>b. Program Adjustments</td> <td style="text-align: right;">0.263</td> <td style="text-align: right;">-0.008</td> <td style="text-align: right;">-0.013</td> </tr> <tr> <td>c. Congressional Adjustments</td> <td></td> <td style="text-align: right;">-0.005</td> <td></td> </tr> <tr> <td>d. Rate/Misc Adjustments</td> <td></td> <td></td> <td style="text-align: right;">-0.034</td> </tr> <tr> <td></td> <td style="text-align: right;">0.256</td> <td style="text-align: right;">-0.013</td> <td style="text-align: right;">-0.047</td> </tr> </table>									Funding:	FY 2008	FY 2009	FY 2010	FY 2009 President's Budget	0.986	2.000	2.500	FY 2010 President's Budget	1.242	1.987	2.453	Total Adjustments	0.256	-0.013	-0.047	a. SBIR/STTR Transfer:	-0.007			b. Program Adjustments	0.263	-0.008	-0.013	c. Congressional Adjustments		-0.005		d. Rate/Misc Adjustments			-0.034		0.256	-0.013	-0.047
Funding:	FY 2008	FY 2009	FY 2010																																									
FY 2009 President's Budget	0.986	2.000	2.500																																									
FY 2010 President's Budget	1.242	1.987	2.453																																									
Total Adjustments	0.256	-0.013	-0.047																																									
a. SBIR/STTR Transfer:	-0.007																																											
b. Program Adjustments	0.263	-0.008	-0.013																																									
c. Congressional Adjustments		-0.005																																										
d. Rate/Misc Adjustments			-0.034																																									
	0.256	-0.013	-0.047																																									
(U) D. ACQUISITION STRATEGY: DISA in conjunction with the Services has developed an Increment 1 Milestone B Acquisition Strategy v1.0 27 May 08. (U) E. MAJOR PERFORMERS: DOD and all services.																																												

UNCLASSIFIED

Exhibit R-3 Cost Analysis										DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E,N /BA3 Advanced Technology Development				0303158M Joint Command & Control				C3210 Net-Enabled Command Capability (NECC)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY09 Cost	FY09 Award Date	FY 10 Cost	FY 10 Award Date						
Product Development															
Subtotal Product Development			0.000	0.000		0.000		0.000							
Remarks:															
Program Support															
Subtotal Support			0.000	0.000		0.000		0.000							
Remarks:															
Test & Evaluation															
Subtotal T&E			0.000	0.000		0.000		0.000							
Remarks:															
Management Support															
MCSC, Quantico, Va	FFP	CEOss CTQ, MCSC	0.000	0.607	01/08	0.441	03/09	1.398	03/10						
SPAWAR, Charleston, SC	RCP	SSCC		0.093	01/08	0.250	01/09	0.540	01/10						
SPAWAR, SD	RCP	SSD		0.014	01/08	0.086	04/09	0.465	04/10						
Ft. Monmouth, N.J.	RCP	MITRE		0.187	01/08	0.047	01/09	0.000	-						
MCSC, Quantico, Va	RCP	MCSC		0.342	01/08	1.163	01/09	0.050	01/10						
Subtotal Management			0.000	1.242		1.987		2.453							
Remarks:															
Total Cost			0.000	1.242		1.987		2.453							

UNCLASSIFIED

DATE: **May 2009**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, NIBA 7 Operational Systems Development	0303158M	C3210 Net-Enabled Command Capability (NECC)

NECC PROGRAM SCHEDULE

The program schedule is detailed as follows:

- Requirements/ Capability Needs:** Starts in FY08, continues through FY09 and FY10. Key milestones include JCCD Process (CDP & DC) in FY09 and JCCD Process Val in FY10.
- TD Phase:** A dark blue bar spanning from the start of FY08 to the end of FY09.
- Increment 1:** A yellow bar starting in FY09, labeled "Inc 1" and "EMD Phase". It includes milestones PDR (Pre-Design Review) and CDR (Critical Design Review).
- Contracts / Engineering Activities:** A green bar spanning from the start of FY09 to the end of FY10, labeled "FY09 CMs" and "Increment I Eng".
- PM Support Contracts:** A blue bar spanning from the start of FY08 to the end of FY10. It includes milestones for FY09 CMs On Contract, WP's On Contract, and WP's.
- Developmental & Operational Testing/ Certification & Accreditation:** A grey bar spanning from the start of FY10 to the end of FY10, labeled "Capability Provisioning Activities".
- Capability Deliveries:** Indicated by a diamond symbol at the end of the schedule in FY10.

Program Funding Summary

	FY 2008	FY 2009	FY 2010
(APPN, BLI & NOMB)			
(U) RDT&E, N C3210, NECC	1,242	1,987	2,510

UNCLASSIFIED
UNCLASSIFIED[illegible]

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				R-1 ITEM NOMENCLATURE 0303158N Joint Command and Control (JC2) Program				
COST (\$ in Millions)	FY2008	FY2009	FY2010					
Total PE Cost	4.620	4.127	4.139					
3146 NET-ENABLED COMMAND CAPABILITY (NECC) PROGRAM (Formerly Joint Command and Control (JC2))	4.620	4.127	4.139					
Quantity of RDT&E Articles								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Net-Enabled Command Capability (NECC) is the Department of Defense's (DoD) principal command and control capability that will be accessible in a net-centric environment and focused on providing the commander with the data and information needed to make timely, effective and informed decisions. NECC is a Joint program with Defense Information System Agency (DISA) as the lead Component Program Management Office (CPMO). The NECC Navy manages Navy Implementation and development of Capability Modules as assigned by DISA CPMO in support of the Joint program. NECC draws from the command and control (C2) community to evolve current and provide new C2 capabilities into a fully integrated, interoperable, collaborative Joint solution. Warfighters can rapidly adapt to changing mission needs by defining and tailoring their information environment and drawing on capabilities that enable the efficient, timely and effective command of forces and control of engagements. DoD has placed its emphasis upon NECC as the future of C2 for the warfighter. The Department cannot accomplish its mission to provide an integrated, flexible, and adaptable full spectrum DoD C2 capability by continuing to rely on independently built and deployed systems that result in situational awareness and force identification variations, data incompatibilities, and non-interoperable services and applications supporting time-critical decisions. Consequently, the Deputy Secretary of Defense has directed that DoD funding be internally realigned into the NECC Program. These funding realignments provide a single, integrated, coherent enhancement of the Department's capability for operational level Joint command and control (JC2) by addressing some of the shortfalls within existing C2 capabilities. The NECC CPMO will continue developing Capabilities Modules in FY10 in support of the Joint program. The migration of existing C2 capabilities towards the standards being developed and adopted as well as the integration of capability modules that are destined for piloting activities into the Maritime Operating Environment is a critical effort that the Navy Component Program Management Office (CPMO) performs.								

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-7		R-1 ITEM NOMENCLATURE 0303158N Joint Command and Control (JC2) Program																																								
B. PROGRAM CHANGE SUMMARY: <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;"><u>FY08</u></th> <th style="text-align: right;"><u>FY09</u></th> <th style="text-align: right;"><u>FY10</u></th> </tr> </thead> <tbody> <tr> <td>PB09 President's Budget</td> <td style="text-align: right;">4.797</td> <td style="text-align: right;">4.148</td> <td style="text-align: right;">4.184</td> </tr> <tr> <td>PB10 President's Submit</td> <td style="text-align: right;">4.620</td> <td style="text-align: right;">4.127</td> <td style="text-align: right;">4.139</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.177</td> <td style="text-align: right; border-top: 1px solid black;">-0.021</td> <td style="text-align: right; border-top: 1px solid black;">-0.045</td> </tr> </tbody> </table> Summary of Adjustments: <table style="margin-left: auto; margin-right: auto;"> <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></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">SBIR/STTR/FTT Assessment</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Program Adjustments</td> <td style="text-align: right;">-0.177</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-0.021</td> <td style="text-align: right;">-0.045</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">-0.177</td> <td style="text-align: right; border-top: 1px solid black;">-0.021</td> <td style="text-align: right; border-top: 1px solid black;">-0.045</td> </tr> </tbody> </table> Schedule: The schedule profile identifies the projected milestones for NECC Increment I. The NECC program is modifying the FY09 plan to meet the requirements laid out by USD (AT&L) with MS B occurring in FY09. Increment I will provide required operational capabilities developed in the FY08-10 period. The NECC program will be developed and executed within an evolutionary acquisition framework. Technical: Not Applicable			Funding:	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	PB09 President's Budget	4.797	4.148	4.184	PB10 President's Submit	4.620	4.127	4.139	Total Adjustments	-0.177	-0.021	-0.045	Congressional Rescissions				Congressional Adjustments				SBIR/STTR/FTT Assessment				Program Adjustments	-0.177			Rate/Misc Adjustments		-0.021	-0.045		-0.177	-0.021	-0.045
Funding:	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>																																							
PB09 President's Budget	4.797	4.148	4.184																																							
PB10 President's Submit	4.620	4.127	4.139																																							
Total Adjustments	-0.177	-0.021	-0.045																																							
Congressional Rescissions																																										
Congressional Adjustments																																										
SBIR/STTR/FTT Assessment																																										
Program Adjustments	-0.177																																									
Rate/Misc Adjustments		-0.021	-0.045																																							
	-0.177	-0.021	-0.045																																							

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303158N Joint Command and Control (JC2) Program			PROJECT NUMBER AND NAME 3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.620	4.127	4.139				
RDT&E Articles Qty							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Net-Enabled Command Capability (NECC) is the DoD's principal command and control capability that will be accessible in a net-centric environment and focused on providing the commander with the data and information needed to make timely, effective and informed decisions. NECC draws from the command and control (C2) community to evolve current and provide new C2 capabilities into a fully integrated, interoperable, collaborative Joint solution. Warfighters can rapidly adapt to changing mission needs by defining and tailoring their information environment and drawing on capabilities that enable the efficient, timely and effective command of forces and control of engagements. DoD has placed its emphasis upon NECC as the future of C2 for the warfighter. The Department cannot accomplish its mission to provide an integrated, flexible, and adaptable full spectrum DoD C2 capability by continuing to rely on independently built and deployed systems that result in situational awareness and force identification variations, data incompatibilities, and non-interoperable services and applications supporting time-critical decisions. Consequently, the Deputy Secretary of Defense has directed that DoD funding be internally realigned into the NECC Program. These funding realignments provide a single, integrated, coherent enhancement of the Department's capability for operational level Joint command and control (JC2) by addressing some of the shortfalls within existing C2 capabilities. The NECC Component Program Management Office (CPMO) will continue developing Capabilities Modules in FY10 in support of the Joint program. The migration of existing C2 capabilities towards the standards being developed and adopted as well as the integration of capability modules that are destined for piloting activities into the Maritime Operating Environment is a critical effort that the Navy CPMO performs.							

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-7	0303158N Joint Command and Control (JC2) Program	3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))	
B. Accomplishments/Planned Program			
Net-Enabled Command Capability (NECC)	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	4.620	4.127	4.139
RDT&E Articles Quantity			
FY08 Accomplishments: Continued the migration of additional maritime command and control (GCCS FoS) capabilities to standards-based architectures. Development of capabilities allocated to the Navy Component Program Management Office (CPMO) in accordance with the Capability Development Document (CDD), in support of NECC Inc I System Development and Demonstration (SDD) phase activities. FY09-10: Continue to migrate additional maritime command and control (GCCS FoS) capabilities to standards-based architectures. Manage development of command and control capabilities as allocated to the Navy CPMO in accordance with the CDD, in support of NECC Inc I SDD phase activities.			

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-7	0303158N Joint Command and Control (JC2) Program	3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

N/A

D. ACQUISITION STRATEGY:

The Net-Enabled Command Capability (NECC) Program builds net-centric services as Capability Modules (CM), not a large, completely integrated software system. CMs are small, loosely coupled, militarily useful pieces of software resident on the Global Information Grid (GIG). A key concept behind NECC is to build capabilities and deliver CMs to the Warfighter, as they are ready, not to wait for major milestones for a complete software release. The individual nature of CMs and the planned responsiveness to the Warfighter require agility and flexibility in NECC's requirements/capability-needs identification, development and validation systems engineering, materiel development, contracting, testing, funding, and acquisition processes. Rapid delivery results in having multiple CMs in concurrent stages of development, operations, or sustainment within an increment, which changes the nature of the program's milestone decisions and funding requirements. The result is a net-centric set of services provided to Warfighters quickly, which gives them the capabilities they need to achieve and sustain Decision Superiority to accomplish their missions. The overarching NECC contracting approach is to acquire CMs, services, and materials through various types of full and open, competitively awarded, performance-based and performance-driven outcome contracts. NECC's primary contracting method utilizes Indefinite Delivery, Indefinite Quantity (IDIQ) contracts to develop CMs. The NECC Joint Program Management Office (JPMO) and Component Management Offices (CPMOs), acting as NECC systems integrators/material developers, have the flexibility to award multiple Task Orders (TOs) under the selected vehicles. In instances in which using an existing IDIQ contract is not feasible, NECC will acquire services and material through a new competitively awarded contract.

E. MAJOR PERFORMERS:

Space & Naval Warfare Systems Command Systems Centers (SPAWARSYSCENS) San Diego and Charleston provide support as the Government research and development facilities. Program and engineering support provided by Booz Allen Hamilton and various subcontractors.

EXHIBIT R-2a, RDT&E Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0303158N Joint Command and Control (JC2) Program			PROJECT NUMBER AND NAME 3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))						
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											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering	VARIOUS	VARIOUS	3.133	1.036	VARIOUS	1.022	VARIOUS			Continuing	Continuing	Continuing
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			3.133	1.036		1.022				Continuing	Continuing	Continuing
Remarks:												
Development Support	VARIOUS	VARIOUS	1.992	0.548	VARIOUS	0.570	VARIOUS			Continuing	Continuing	Continuing
Software Development	VARIOUS	VARIOUS	2.195	0.543	VARIOUS	0.560	VARIOUS			Continuing	Continuing	Continuing
Training Development											0.000	0.000
Integrated Logistics Support	VARIOUS	VARIOUS	0.806	0.272	VARIOUS	0.351	VARIOUS			Continuing	Continuing	Continuing
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			4.993	1.363		1.481				Continuing	Continuing	Continuing
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-7			0303158N Joint Command and Control (JC2) Program					3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))				
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	1.653	0.148	VARIOUS	0.159	VARIOUS			Continuing	Continuing	Continuing
Operational Test & Evaluation	WX	OPTEVFOR	0.116	0.000		0.000				Continuing	Continuing	Continuing
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			1.769	0.148		0.159				Continuing	Continuing	Continuing
Remarks:												
Contractor Engineering Support	VARIOUS	VARIOUS	2.068	1.187	VARIOUS	1.080	VARIOUS			Continuing	Continuing	Continuing
Government Engineering Support	WX	SSC SD	2.335	0.393	VARIOUS	0.397	VARIOUS			Continuing	Continuing	Continuing
Program Management Support												0.000
Travel												0.000
Subtotal Management			4.403	1.580		1.477				Continuing	Continuing	Continuing
Remarks:												
Total Cost			14.298	4.127		4.139				Continuing	Continuing	Continuing
Remarks												

Exhibit R-3, RDTEN Cost Analysis

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:				May 2009							
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME														PROJECT NUMBER AND NAME											
RDT&E, N /BA-7										0303158N Joint Command and Control (JC2) Program														3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))											
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																																			
Technology Development Activities																																			
System Engineering																																			
Technology Risk-Reduction / Piloting																																			
Piloting Integration																																			
Define / Design / Develop Capability Modules																																			
System Development and Demonstration Activities																																			
Increment I																																			
Increment II																																			

Note: (1) NECC is a Joint program with DISA as the lead Joint Program Management Office (JPMO). The NECC Navy Component Program Management Office (CPMO) manages Navy implementation and development of Capability Modules as assigned by JPEO and JPPO in support of the Joint program.
 (2) System Development and Demonstration (SDD) Activities represent continuous spiral releases of Increment I and II Capability Modules (CMs) for delivery to the Warfighter.

EXHIBIT R4, Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT 0303158N Joint Command and Control (JC2) Program				PROJECT NUMBER AND NAME 3146 Net-Enabled Command Capability (NECC) Program (Formerly Joint Command and Control (JC2))			
Schedule Profile	FY 2008	FY 2009	FY 2010					
Acquisition Milestones								
NECC Inc I MS B (Projected)		Q4						
NECC Inc I Full Deployment Decision Review (FDDR) (Projected)								
Technology Development (TD)								
Activities - Increment I								
System Engineering	Q1-Q4	Q1-Q4						
Tech Risk Reduction/Piloting	Q1-Q4	Q1-Q4						
Piloting Integration	Q1-Q4	Q1-Q4						
Define/Design/Dev Capability Modules	Q1-Q4	Q1-Q4						
System Demonstration and Development Activities								
Increment I			Q1 - Q4					
Increment II								

Exhibit R-4a, Schedule Detail

CLASSIFICATION:		UNCLASSIFIED																																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE May 2009																																													
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0305149N/COBRA JUDY																																															
COST (In Millions)				FY 2008	FY 2009	FY 2010																																													
Total PE Cost				131.836	100.814	62.061																																													
4021 / CJR System Engineering				131.836	100.814	62.061																																													
A. MISSION DESCRIPTION: Cobra Judy funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable. This program will fund the development of a single ship-based radar suite for world wide technical data collection against ballistic missiles in flight. Prior funding provided instrumentation of quality radar data and imaging, detailing threat assessment of ballistic missile development, testing and range augmentation and monitored or verified specific aspects of United States treaties with other countries. To avoid vulnerabilities in our national security, it is imperative we replace the current capability of Cobra Judy to prevent any potential gap in coverage. Prior studies have indicated that a ship-based radar replacement is the most timely and cost effective solution. 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>131.836</td> <td>101.114</td> <td>62.040</td> </tr> <tr> <td>FY10 President's Budget</td> <td>131.836</td> <td>100.814</td> <td>62.061</td> </tr> <tr> <td>Total Adjustments</td> <td>0.000</td> <td>-0.300</td> <td>0.021</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>-0.274</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>0.000</td> <td>-0.026</td> <td>0.000</td> </tr> <tr> <td>Rate/Misc Adjustments</td> <td>0.000</td> <td>0.000</td> <td>0.021</td> </tr> <tr> <td>Total</td> <td>0.000</td> <td>-0.300</td> <td>0.021</td> </tr> </table> C. OTHER PROGRAM FUNDING SUMMARY:								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	131.836	101.114	62.040	FY10 President's Budget	131.836	100.814	62.061	Total Adjustments	0.000	-0.300	0.021	(U) Summary of Adjustments				Congressional Rescissions	0.000	0.000	0.000	Congressional Adjustments	0.000	-0.274	0.000	SBIR/STTR/FTT Assessment	0.000	0.000	0.000	Program Adjustments	0.000	-0.026	0.000	Rate/Misc Adjustments	0.000	0.000	0.021	Total	0.000	-0.300	0.021
Funding:	FY 2008	FY 2009	FY 2010																																																
FY09 President's Budget	131.836	101.114	62.040																																																
FY10 President's Budget	131.836	100.814	62.061																																																
Total Adjustments	0.000	-0.300	0.021																																																
(U) Summary of Adjustments																																																			
Congressional Rescissions	0.000	0.000	0.000																																																
Congressional Adjustments	0.000	-0.274	0.000																																																
SBIR/STTR/FTT Assessment	0.000	0.000	0.000																																																
Program Adjustments	0.000	-0.026	0.000																																																
Rate/Misc Adjustments	0.000	0.000	0.021																																																
Total	0.000	-0.300	0.021																																																

CLASSIFICATION:		UNCLASSIFIED
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	R-1 ITEM NOMENCLATURE 0305149N/COBRA JUDY	
D. ACQUISITION STRATEGY: The acquisition strategy calls for leveraging ongoing Navy Ballistic Missile Defense (BMD) radar development, updating existing user interface/communications data handling equipment designs from a similar operational unit and purchasing and integrating the mission equipment aboard an appropriate merchant-class hull. System design will be accomplished using in-hand technologies and commercial standards to lower schedule risk and produce a product with the lowest possible life-cycle cost.		

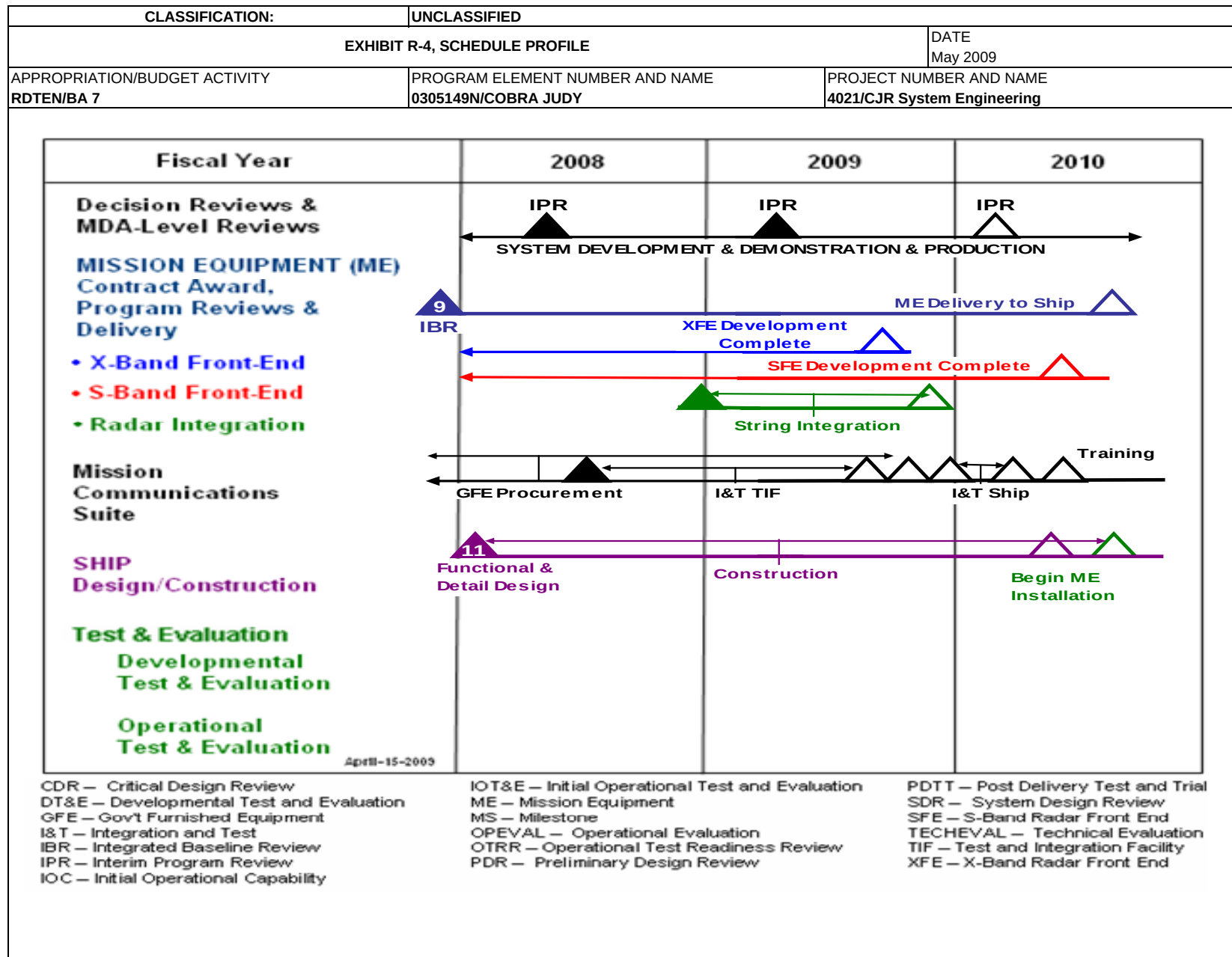
CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY			PROJECT NUMBER AND NAME 4021/CJR System Engineering		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	131.836	100.814	62.061				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Cobra Judy funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable. This program will fund the development of a single ship-based radar suite for world wide technical data collection against ballistic missiles in flight. Prior funding provided instrumentation of quality radar data and imaging, detailing threat assessment of ballistic missile development, testing and range augmentation and monitored or verified specific aspects of United States treaties with other countries. To avoid vulnerabilities in our national security it is imperative we replace the current capability of Cobra Judy in a timely manner to prevent any potential gap in coverage. Prior studies have indicated that a ship-based radar replacement is the most timely and cost effective solution.							

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	
		PROJECT NUMBER AND NAME 4021/CJR System Engineering	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	84.536	69.467	32.726
RDT&E Articles Quantity	0	0	0
DESIGN AND RISK REDUCTION			
Accomplishments - Completed program restructure to address funding, ship, and Mission Equipment schedule misalignment - X-Band Front End (XFE) T/R module and BSC production complete and XFE array halves moved to Near-Field Range for testing - S-band Front End (SFE) T/R module manufacturing in process and Pilot Antenna moved to Near-Field Planned: #NAME? - String integration begins in FY2009			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	43.190	26.945	22.719
RDT&E Articles Quantity	0	0	0
SHIPBUILDING			
Accomplishments: - Completed Critical Design Review - Began Construction Nov 2007 - Keel laying 4th QTR FY2008			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.239	1.730	1.722
RDT&E Articles Quantity	0	0	0
SYSTEM ENGINEERING			
Accomplishments: - Completed designs for non-prime mission equipment (C4I, data handling, classified mission equipment)			

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	PROJECT NUMBER AND NAME 4021/CJR System Engineering	
Planned: - Begin land-based risk reduction/integration demonstration of Ship configuration non-prime mission equipment (C4I, data handling, classified mission equipment) at SPAWAR Test and Integration Facility in 1st QTR FY2009)			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.353	0.396	2.000
RDT&E Articles Quantity	0	0	0
TEST & EVALUATION			
Planned: - Maintain Test and Evaluation Master Plan (TEMP) - Develop and maintain detailed test and integration plans - Support Technical Interchange Meetings (TIMs)			
	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.518	2.276	2.894
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-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY			PROJECT NUMBER AND NAME 4021/CJR System Engineering					
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			
System Engineering	WR	Various	3.977	0.119	DEC-08	0.100	DEC-09			
System Engineering	MIPR	Various	3.096	0.320	DEC-08	0.100	DEC-09			
System Engineering	GSA	Various	1.691	0.000		0.000				
System Engineering	CPAF	BAE	0.840	0.000		0.200	DEC-09			
System Engineering	C NF	GTRI	2.118	0.121	DEC-08	0.220	DEC-09			
System Engineering	CPFF	JHU/APL	5.790	0.149	DEC-08	0.500	DEC-09			
System Engineering	MIPR	MIT/LL	4.319	0.000		0.100	FEB-10			
System Engineering	WR	NRL	1.880	0.000		0.000				
System Engineering	WR	NSWC CSS	2.942	0.000		0.000				
System Engineering	WR	NSWC DD	10.694	1.021	DEC-08	0.300	DEC-09			
System Engineering	WR	NSWC PHD	1.535	0.000		0.000				
System Engineering	Various	PEO Ships	3.000	0.000		0.000				
System Engineering	WR	SEG	1.195	0.000		0.000				
Systems Engineering	WR	SPAWAR	2.922	0.000		0.000				
Systems Engineering	WR	NSWC/CRANE	0.204	0.000		0.202	DEC-09			
Subtotal Support Costs			46.203	1.730		1.722				
Remarks:										
Test and Evaluation	PAF/WR/R	Various	0.295	0.247	VAR	0.100	VAR			
Test and Evaluation	CPAF	Raytheon	1.200	0.000		0.000				
Test and Evaluation		AFOTEC	0.330	0.025	DEC-08	0.100	FEB-10			
Test and Evaluation		COMOPTEVFOR	0.315	0.025	DEC-08	0.000				
Test and Evaluation		JITC	0.225	0.000		0.000				
Test and Evaluation	WR	NSWC DD	2.019	0.099	DEC-08	1.700	FEB-10			
Test and Evaluation		PEO SHIPS	0.452	0.000		0.100	FEB-10			
Test and Evaluation		TSC	0.422	0.000		0.000				
Subtotal Test and Evaluation			5.258	0.396		2.000				
Remarks:										

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY			PROJECT NUMBER AND NAME 4021/CJR System Engineering					
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			
Contractor Engineering	WR/REQN	Various	1.687	1.260	DEC-08	0.100	DEC-09			
	CPAF	BAE Systems	10.611	0.000		0.000				
	GSA	Computer Science Corp	3.255	0.000		0.000				
	GSA	Systems Planning & Analysis	1.900	0.000		0.000				
Program Management	CPAF	BAE Systems	12.233	0.991	DEC-08	2.714	DEC-09			
	CPFF	DTI	0.435	0.000		0.000				
Travel	PD	PEO IWS2	0.756	0.025	DEC-08	0.080	DEC-09			
Subtotal Management Services			30.877	2.276		2.894				
Remarks:										
Design and Risk Reduction	CPAF/IF	Raytheon	408.360	66.666	OCT-08	32.107	OCT-09			
Design and Risk Reduction	Various	PEO Ships	100.815	26.945	OCT-08	22.719	OCT-09			
Design and Risk Reduction	Various	SPAWAR	5.855	2.801	OCT-08	0.619	OCT-09			
Shipbuilding	Various	MIT/TWS	0.500	0.000		0.000				
Subtotal Product Development			515.530	96.412		55.445				
Remarks:										
Total Cost			597.868	100.814		62.061				



CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY			PROJECT NUMBER AND NAME 4021/CJR System Engineering		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Initial Operational Capability (IOC)							
X- Band Development Complete				1Q			
S-Band Radar Development Complete				3Q			
Mission Equipment String Integration Complete				2Q			
Mission Communications Suite Lightoff				2Q			
Ship Construction Start		2Q					
Ship Delivery				3Q			

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				R-1 ITEM NOMENCLATURE 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	4.550	8.182	28.094					
0524 METOC Space-Based Sensing Capabilities	3.547	2.671	1.085					
1452 Geosat Follow-on	1.003	5.511	27.009					
Quantity of RDT&E Articles								

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

This program element supports the Naval service's unique requirements in meteorological and oceanographic (METOC) space-based remote sensors. Beginning in FY2009 requirements include the development of a Future Naval Altimetry Satellite as required to ensure continuing support to Operational Warfighters. The altimeter provides global measurement of Sea Surface Height (SSH), SSH is combined with other measurements to compute daily sound speed profiles of the ocean, which are used to compute acoustic propagation in ASW tactical decision aids. Tactical decision aids allow ASW asset commanders to optimize system performance and posture forces.

Funding increases to the Geosat Follow-on project in FY10 represent the inclusion of full mission efforts for the Future Naval Altimetry Satellite including all payload components, spacecraft, launch vehicle, launch operations, on-orbit acceptance, and upgrades to existing ground infrastructure necessary for satellite control and payload data processing. Specifically, in FY10 the Satellite's Preliminary Design is scheduled for approval leading to the beginning of the final design phase.

These requirements include commitments to satellite, sensor, and operational demonstration/development activities as well as transition to fleet applications associated with four satellite programs: 1) the joint Defense Meteorological Satellite Program (DMSP), 2) the jointly funded Coriolis satellite which includes Navy Satellite Based Wind Speed (WindSat) and Air Force SMEI (Solar Mass Ejection Imager) instruments, 4) the Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) altimetry satellite funded entirely by Navy and 5) a future altimetry satellite funded entirely by Navy. The Navy METOC Space-Based Sensing Capabilities project provides for Navy participation in Navy/Air Force cooperative efforts leading to DMSP sensor development, specifically participation in the calibration and validation of instruments and delivery of satellite products to the Fleet. The passive microwave instruments carried on DMSP and future NPOESS satellites provide global oceanic and atmospheric data of direct operational relevance, including sea surface wind, sea ice, and precipitation. WindSat is a partnered program that meets multiple naval remote sensing requirements and provides a significant risk reduction for the NPOESS satellites' Microwave Imaging Sensor (MIS) instrument. The future altimetry satellite will be a Navy program to provide continuity in altimetry data. Both the GEOSAT Follow-On and Navy METOC Support (Space) projects fulfill Navy's obligation to develop naval service-unique, mission critical space-based METOC technology.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: BA-7: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

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-7		PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)				PROJECT NUMBER AND NAME 0524 NAVY METOC SUPPORT (SPACE)		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	3.547	2.671	1.085					
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Meteorological and Oceanographic (METOC) Support (Space) project provides for the naval service's unique sensor development efforts (Navy Satellite Based Wind Speed (WindSat) and Future Naval Altimeter Satellite) and Navy participation in Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager (SSM/I) and Special Sensor Microwave Imager Sounder (SSM/IS) calibration/validation efforts in support of the Fleet operational requirements. WindSat, an initiative begun in 1997, is a partnered program that meets multiple naval remote sensing requirements and provides a significant risk reduction for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) satellites' Conical Microwave Imaging Sensor (CMIS) instrument. The passive microwave instruments carried on DMSP and future NPOESS satellites provide global oceanic and atmospheric data of direct operational relevance, including sea surface wind speed, sea ice, and precipitation. The METOC Space-Based Sensing Capabilities project ensures the naval service's operational requirements are satisfied primarily through demonstration of technologies for inclusion on operational constellations such as DMSP, the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and the National Oceanic and Atmospheric Administration's (NOAA) Geostationary Operational Environmental Satellites (GOES). These efforts fulfill naval service unique requirements that are not funded within the DMSP, NPOESS or GOES programs, and are in accordance with current inter-agency agreements.								

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)	PROJECT NUMBER AND NAME 0524 NAVY METOC SUPPORT (SPACE)		

(U) B. Accomplishments/Planned Program

METOC Space-Based Sensing Capabilities	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	3.547	2.671	1.085	
RDT&E Articles Quantity				

FY08 - Prepared for launch of F-18. Developed additional Warfighter products (sea ice coverage); continued risk reduction to MIS through Navy Satellite Based Wind Speed (WindSat) data exploitation and ground control and operations of Coriolis and monitor state of health of the WindSat on-orbit payload. Monitored Special Sensor Microwave/Imager (SSM/I) and SSMIS performance and continued calibration and validation.

FY09 - Continue performance assessments of microwave imagers (e.g.: SSMIS/SSMI/MIS) and continue to calibrate sensors and validate data and resolve anomalies. Continue ground control and operations of the Coriolis spacecraft and monitor the state of health of the WindSat on-orbit payload.

FY10 - Continue performance assessments of microwave imagers (e.g.: SSMIS/SSMI/MIS) and continue to calibrate sensors and validate data and resolve anomalies. Continue limited ground control and operations of the Coriolis spacecraft.

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)	PROJECT NUMBER AND NAME 0524 NAVY METOC SUPPORT (SPACE)
(U) C. OTHER PROGRAM FUNDING SUMMARY: <u>Line Item No. & Name</u> Not Applicable		
(U) D. ACQUISITION STRATEGY: WindSat provides risk reduction data and developmental technology that the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Integrated Program Office (IPO) will use in the development of the Conical Microwave Imager Sounder (CMIS). CMIS can be viewed as the follow-on instrument to the Special Sensor Microwave (SSM) instruments Navy developed for the Defense Meteorological Satellite Program (DSMP). It will be the primary instrument for satisfying 20 NPOESS Integrated Operational Requirements Document (IORD) Environmental Data Records (EDRs). These CMIS sensors will be acquired as part of the NPOESS architecture which supports these Navy requirements in the future. Maintenance of rigorous sensor calibration and data validation for operational SSM instruments continues along with algorithm development in support of fleet applications.		
(U) E. MAJOR PERFORMERS: Naval Research Laboratory, Washington D.C. Satellite Mission and Technical Support, Sensor Calibration and Data Validation		

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-7			0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)				0524 NAVY METOC SUPPORT (SPACE)					
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												
Spacecraft Development	FF	Spectrum Astro, AZ	2.500		N/A		N/A					
Spacecraft Development	CP	TRW, Redondo Beach, CA	4.885		N/A		N/A					
Assimilation/Prediction Models	WR	NRL	4.316	1.115	N/A	0.437	N/A					
Subtotal Product Development			11.701	1.115	N/A	0.437	N/A					
Remarks:												
Support Costs												
WindSat-Sensor/Observing Systems (Space)	CP	Various	88.948	0.805	N/A	0.330	N/A					
IOMI PM and System Engineering	CP	Various	3.754		N/A		N/A					
SSMIS Cal/Val	CP	Various	10.139	0.617	N/A	0.253	N/A					
Future Mission Engineering	CP	Various	0.316		N/A		N/A					
APMIR	CP	Various	1.590		N/A		N/A					
Subtotal Support Costs			104.747	1.422	N/A	0.583	N/A					
Remarks:												

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)					PROJECT NUMBER AND NAME 0524 NAVY METOC SUPPORT (SPACE)				
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												
	CP	Various	0.182	0.134	N/A	0.065	N/A					
Subtotal Management Services			0.182	0.134	N/A	0.065	N/A					
Remarks:												
Total Cost			116.630	2.671	N/A	1.085	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-7					0305160N DEFENSE METEOROLOGICAL SATELLITE PROGRAM (SPACE)																0524 NAVY METOC SUPPORT (SPACE)											
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				
WindSat / Coriolis																																
	Risk reduction demonstration.																															
Microwave Imager																																
	Sensor Calibration / Data Validation																															

EXHIBIT R4, Schedule Profile

UNCLASSIFIED

[illegible]

Exhibit R-4a, Schedule Detail

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)				PROJECT NUMBER AND NAME 1452 GEOSAT FOLLOW-ON		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	1.003	5.511	27.009					
Quantity of RDT&E Articles								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides a satellite-borne radar altimeter sensor to obtain ocean topography measurements from which tactically significant features such as ocean fronts and eddies, wave heights, internal acoustic structure, and sea-ice edges are derived. Topography provides a unique and important data source in support of a number of naval service unique warfare areas such as anti-submarine and undersea warfare. Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) data are made freely available to other agencies such as the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) who value its input to studies involving global warming and climate change including El Nino Southern Oscillation (ENSO) effects. Ocean topography data was previously provided by GEOSAT from 1985 until the satellite failed in January 1990. The GFO satellite was launched in February 1998 and is nearing its end of life. A future Naval Altimetry Satellite will provide for continuation of this capability. Funding increase in FY2010 represent the inclusion of the full mission efforts for the Future Naval Altimetry Satellite including all payload components, spacecraft, launch vehicle, launch operations, on-orbit acceptance, and upgrades to existing ground infrastructure necessary for satellite control and payload data processing. Specifically, in FY2010 the Satellite's Preliminary Design is scheduled for approval leading to the beginning of the final design phase. The development of the Future Naval Altimetry Satellite, required to ensure continuing support to Operational Warfighters, begins in FY2009. Altimeters provide global measurements of Sea Surface Height (SSH). SSH is combined with other measurements to compute daily sound speed profiles in the ocean. Sound speed profiles are used to compute acoustic propagation in ASW tactical decision aids. Tactical decision aids allow ASW asset commanders to optimize system performance and posture forces.								

EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)	PROJECT NUMBER AND NAME 1452 GEOSAT FOLLOW-ON		
(U) B. Accomplishments/Planned Program				
Meteorology and Oceanography (METOC) Space	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	1.003	5.511	27.009	
Quantity of RDT&E Articles				
FY08 - Continued investigations and implementation of life extension solutions as work arounds for degraded components. Continued performance assessments and continued to calibrate payload and validate data and resolved anomalies. Continued assessing the impact of differing orbits on metric effectiveness. Completed GFO Performance Validation Reports (every 17 days) and GFO Engineering Anomaly Resolution Reports (upon retirement of anomaly). Completed METOC metric end of year report. FY09 - Continue Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) performance assessments and continue to calibrate GFO payload and validate data and resolve anomalies. Continue investigations and implementation of life extension solutions as work arounds for degraded components of GFO. Complete GFO Performance Validation Reports (every 17 days) and GFO Engineering Anomaly Resolution Reports (upon retirement of anomaly). The GFO is no longer operational, since November 2008, all resources have since been realigned to expedite the follow on capability, the Naval altimetry data satellite (or the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2)). Begin engineering analysis of alternative configurations for a future satellite based altimeter and prepare acquisition documentation. FY10 - Begin Design phase of the Naval altimetry data satellite. Complete preliminary design and conduct Preliminary Design Review (PDR) for the Naval altimetry data satellite. The GFO is no longer operational, since November 2008, all resources have since been realigned to expedite the follow on capability, the Naval altimetry data satellite (or the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2)).				

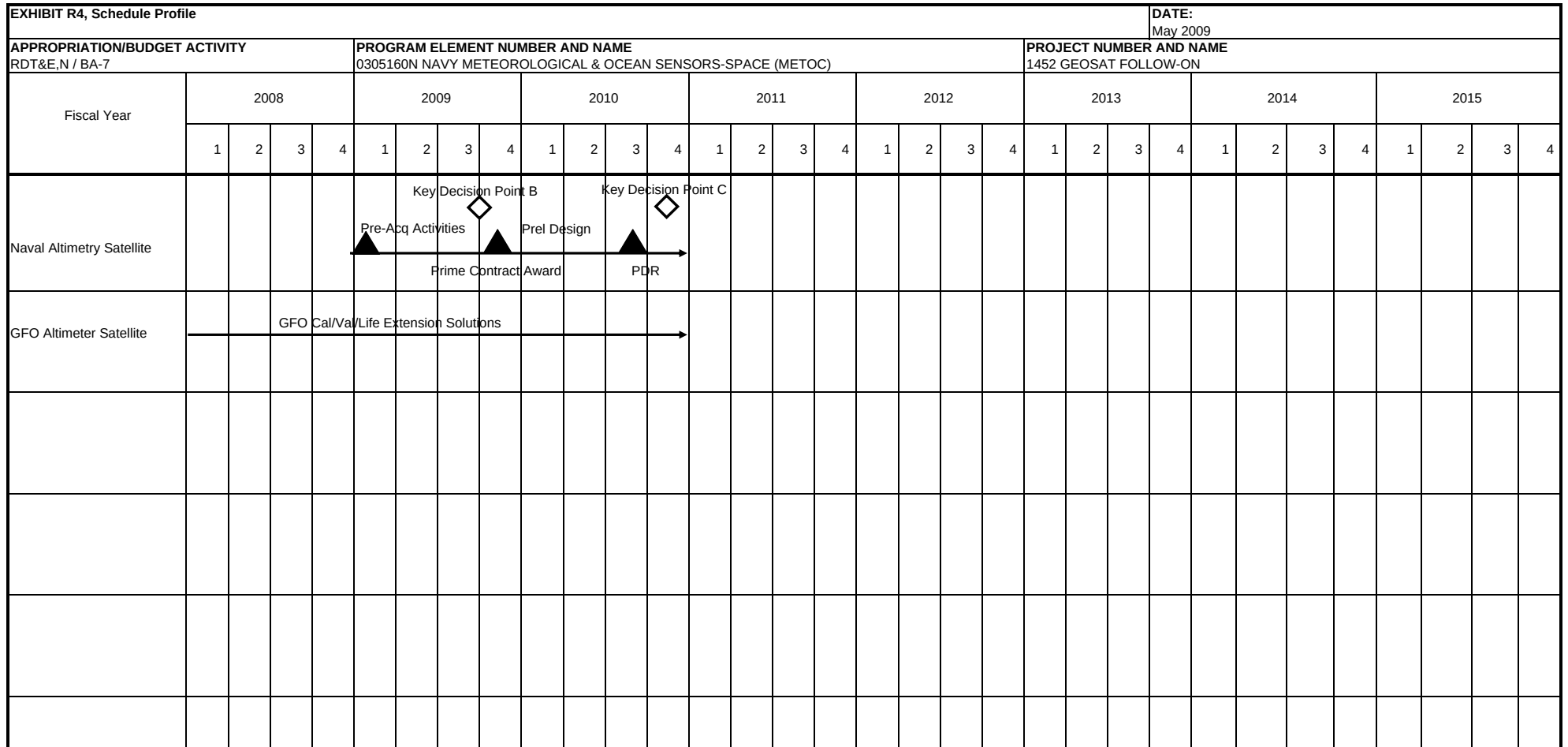
EXHIBIT R-2a, RDT&E Project Justification

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)	PROJECT NUMBER AND NAME 1452 GEOSAT FOLLOW-ON
(U) C. OTHER PROGRAM FUNDING SUMMARY: <u>Line Item No. & Name</u> Not Applicable (U) D. ACQUISITION STRATEGY: The naval service requires a satellite-borne radar altimeter sensor on orbit to obtain ocean topography measurements from which tactically significant features such as ocean fronts and eddies, wave heights, internal acoustic structure, and sea-ice edges are derived. Rigorous payload calibration, data validation and precision orbit determination maintain accuracy and usefulness of data. Continued refinement of sensor performance works toward satisfying the Navy and Marine Corps' littoral data requirements. As the Geodetic/geophysical Satellite GEOSAT Follow-On (GFO) satellite reaches its end of life, the program will transition to a future on-orbit altimeter to satisfy naval service unique altimetry requirements. (U) E. MAJOR PERFORMERS: Ball Aerospace, Boulder, CO Satellite Mission Support; Computer Sciences Corporation (CSC), Monterey, CA Sensor Calibration, Data Validation and Technical Support. MAXIM Systems, San Diego, CA. TBD (competitive award) for prime contractor for future Naval altimetry satellite.		

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-7			0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)					1452 GEOSAT FOLLOW-ON				
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												
Software Development	CP	Ball Aerospace	85.984		N/A		N/A					
	CP	Various	8.045		N/A		N/A					
Systems Engineering	CP	Ball Aerospace	3.456	0.215	N/A	0.215	N/A					
	CP	Various	3.711	0.911	N/A	0.885	N/A					
Naval Altimetry Satellite	CP	TBD		1.700	TBD	24.300	TBD					
Subtotal Product Development			101.196	2.826	N/A	25.400	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 RDT&E,N / BA-7			PROGRAM ELEMENT 0305160N NAVY METEOROLOGICAL & OCEAN SENSORS-SPACE (METOC)					PROJECT NUMBER AND NAME 1452 GEOSAT FOLLOW-ON				
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								
Remarks:												
Management Services												
	CP	Various	0.200	0.000	N/A	0.000	N/A					
		MAXIM Systems, San Diego, CA		2.685	11/08	1.609	N/A					
Subtotal Management Services			0.200	2.685	N/A	1.609	N/A					
Remarks:												
Total Cost			101.396	5.511	N/A	27.009	N/A					



NOTE: The schedule for the Future Naval Altimetry Satellite effort has been refined/updated to reflect the inclusion of the launch vehicle and payload integration.

EXHIBIT R4, Schedule Profile

NOTE: The schedule for the Future Naval Altimetry Satellite effort has been refined/updated to reflect the inclusion of the launch vehicle and payload integration.

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY							May 2009	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7							R-1 ITEM NOMENCLATURE	
							0305204N, TACTICAL UNMANNED AERIAL VEHICLES	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	66.819	51.588	8.971					
0117 REEF POINT (SONOCHUTE UAV)			.100					
2478 TCS	12.130	8.807	8.871					
2768 MQ-8B (VTUAV)*	39.952	9.614						
2910 JOINT TECH CENTER/SYSTEMS INTEG LABORATORY*	1.679	1.719						
3192 STUAS*	6.105	25.364						
9999 CONGRESSIONAL ADDS	6.953	6.084						

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

0117 REEF POINT (SONOCHUTE UAV): The Reef Point Sonochute UAV is a new start FY10 program which will provide an expendable organic UAV that can be launched from a P-3/P-8 Suro Buoy Launcher to support the host aircraft by 1) extending its on-station time, 2) extending on-board sensor range and 3) affording a margin of crew and platform safety not currently available to Maritime Surveillance Aircraft (MSA) community.

2478 TCS (Tactical Control System): TCS is a standards-based system that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interfaces, and Command and Control of Naval Unmanned Air Systems (UASs). Capability to provide Interoperability across the Naval UAS Family of Systems (FoS) through use of TCS software operating on Ground Control Station hardware utilizing a NATO STANAG-4586 architecture communicating across a Tactical Common Data Link. TCS provides a full range of scaleable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the war fighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for reconnaissance, surveillance, and combat assessment. This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate Multi-Vehicle Control, and incorporate NATO STANAG-4586 and C4I enhancements. TCS software is interoperable and is compliant with the OSD Command and Control, Communications, Intelligence (C3I) Joint Technical Architecture, Distributed Common Ground System standards, and NATO standards.

2768 MQ-8B (Vertical Take-Off and Landing Tactical Unmanned Air Vehicle (VTUAV); popular name "Fire Scout"): MQ-8B provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8B can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8B launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of an electro-optical/infrared/laser designator-laser range finder modular mission payload, and a maritime search RADAR. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8B will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols. *\$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA. *MQ-8B project code moved from PE 0305204N to PE 0305231N, in FY10.

2910 JTC/SIL (Joint Technology Center/System Integration Laboratory): JTC/SIL provides experimentation for UAV technology assessment, insertion, demonstration, transfer, as well as simulation and exercise support. *JTC/SIL Project code moved from PE 0305204N to PE 0603261N, in FY10.

3192 STUAS (Small Tactical Unmanned Aircraft System) STUAS will provide persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval ships (multi-ship classes) and Navy land forces. This system will fill the ISR capability shortfalls currently filled by services contracts. This system will support Naval missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval units operating from sea/shore in Overseas Contingency Operations.

*STUAS project code moved from PE 0305204N to PE 0305234N in FY10.

*\$2.9M FY09 funds were BTR'd to SABRE Focus Program.

Congressional Adds.

Skybus 80k and 130k LTA-UAS Multirole Technologies Development, test, design and build of the Skybus 80K will provide a platform to evaluate airship capability in performing multirole, persistent ISR and long-dwell missions in both hostile and non-threatening environments.

UAS Tactical Control System Open Architecture This initiative includes the open systems migration of unique military standard sensors, electronics, and software system components to lower cost/higher performance commercial equivalent capabilities.

Micro-munitions Interface for Tactical Unmanned Systems This initiative is to develop an interface between Unmanned Air Systems (UAS) and micro-munitions, defined as weapons weighing less than 100 pounds. Integration of micro-munitions onto UASs requires a stores/weapons management interface that provides a safe and effective integration between the weapon and the unmanned system.

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		May 2009
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0305204N, TACTICAL UNMANNED AERIAL VEHICLES	

B. PROGRAM CHANGE SUMMARY

Funding:	FY08	FY09	FY10
Previous President's Budget:	56.787	45.717	53.892
Current President's Budget:	66.819	51.588	8.971
Total Adjustments	10.032	5.871	-44.921

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments	0.032	6.011	
SBIR/STTR/FTT Assessments			
Program Adjustments	10.000		-44.919
Rate/Misc Adjustments		-0.140	-0.002
Subtotal	10.032	5.871	-44.921

Schedule:

TCS - Partnered with MQ-8B. TCS is an Integral part of the MQ-8B Fire Scout System. Schedule is dependent upon MQ-8B development and has been updated accordingly.

MQ-8B - The Littoral Combat Ship schedule change directly affected MQ-8B's ability to conduct DT/OT activities. In Feb 2008, ASN(RDA) approved the plan to complete MQ-8B testing, OPEVAL, and IOC on an existing Navy ship, while maintaining integration activities on the LCS. This plan provides the MQ-8B capability to the fleet in 2009, and provides a mature system to support LCS testing. LRIP II moved to 4Q of FY2008. The FY09 Full Rate Production has been changed to a 1QTR FY09 LRIP III to account for the change in OPEVAL on the FFG.

STUAS/Tier II UAS - Schedule adjusted to reflect change in scope of program. Program now funded for Increment 0 and Increment 1, and associated tasks scheduled. Increment 0 Milestone B, Milestone C, and IOC realigned. Increment 1 milestones established.

Technical:

Not Applicable

NOTES:

\$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 VTUAV per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.
\$2.9M FY09 funds were BTR'd to SABRE Focus Program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 0117 Reef Point Sonochute UAV			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost				0.100				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Reef Point Sonochute UAV

The Reef Point Sonochute UAV will provide an expendable organic UAV that can be launched from a P-3/P-8 Sono Buoy Launcher to support the host aircraft by 1) extending its on-station time, 2) extending on-board sensor range and 3) affording a margin of crew and platform safety not currently available to Maritime Surveillance Aircraft (MSA) community. The system supports the P-8 MMA Adjunct Unmanned Aerial Vehicle requirement of level II UAV command and control (threshold) to provide real-time receipt of UAV sensor data via direct link as well as the objective goal for later production blocks of MMA for Level IV UAV command and control to enable on-board command and control of UAVs operating as remote sensors and C4ISR collection. This system supports the MMA design for deployable systems which accommodates for the stowage, control, and dispensing of various non-lethal expendables for use in search, localization, tracking, classification/identification tasks, for enhancing survivability, and for Search and Rescue (SAR). The system supports Naval missions such as Maritime Interdiction. The Navy Special Mission Squadrons, VPU-1 and VPU-2 will conduct operational flight testing to help accelerate the technical and operational advancement of the expendable UAV concept. Naval Air Warfare Center Division will support the systems engineering.

B. Accomplishments/Planned Program

Engineering and Maintenance	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost			0.100
RDT&E Articles Quantity			

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

EXHIBIT R-2a, RDT&E Project Justification							DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E,N / BA-7		0305204N, TACTICAL UNMANNED AERIAL VEHICLES			2478, TCS				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
2478 TCS		12.130	8.807	8.871					
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) A. This program supports the Tactical Control System (TCS), a standards-based system that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interfaces, and Command and Control of Naval Unmanned Air Systems (UASs). Capability to provide Interoperability across the Naval UAS Family of Systems (FoS) through use of TCS software operating on Ground Control Station hardware utilizing a NATO STANAG-4586 architecture communicating across a Tactical Common Data Link.

TCS provides a full range of scaleable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the war fighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for reconnaissance, surveillance, and combat assessment.

This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate Multi-Vehicle Control, and incorporate NATO STANAG-4586 and C4I enhancements.

TCS software will be incorporated into the MQ-8B Vertical Take-off and Landing Tactical Unmanned Air Vehicle (VTUAV) system, which will IOC in 4Q FY09. TCS software addresses MQ-8B requirements validated by the Joint Requirements Oversight Council in the VTUAV Capability Production Document (May 2007).

TCS maximizes the use of contractor and government off-the-shelf hardware and software whenever possible and incorporates software/hardware enhancements where appropriate to maintain growth potential and minimize hardware obsolescence. TCS software is interoperable, and is compliant with the OSD Command and Control, Communications, Intelligence (C3I) Joint Technical Architecture, and Distributed Common Ground System standards, and NATO standards.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

TCS DEVELOPMENT AND INTEGRATION	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cd	10.783	7.643	7.631	
RDT&E Articles Qty				

Continue TCS integration with MQ-8B development. Continue new TCS capabilities to support requirements for Littoral Combat Ship (LCS) integration. Continue TCS NATO STANAG 4586 compliance. Continue TCS Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interface testing for MQ-8B required C4ISR systems. Complete multi-vehicle UAS control through FY2009.

TECHNICAL AND ENGINEERING SERVICES	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cd	1.347	1.164	1.240	
RDT&E Articles Qty				

Continue government engineering support, contractor support, program support, and travel for the TCS program.

C. OTHER PROGRAM FUNDING SUMMARY: FY 2008 FY 2009 FY 2010
Not Applicable

D. ACQUISITION STRATEGY:

The TCS program is developing Government owned, non-proprietary software that supports multiple UAS control. The TCS program continues under the FY04 Congressionally-directed restructure of the program to focus on Navy requirements and standards based on interoperability. Navy requirements for TCS include supporting fielding of the Navy MQ-8B Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) aboard the Littoral Combat Ship (LCS), FFG, DDG-1000, addition of plug-and-play payloads, and implementation of NATO Standardization Agreement for Standard Interfaces of UAV Control System for NATO UAV Interoperability (STANAG 4586).

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2478, TCS							
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 Fees	C/CPAF	RAYTHEON, FALLS CHURCH, VA	8.510	.431	11/08	.456	11/09						
Primary Hdw Development	C/CPAF	RAYTHEON, FALLS CHURCH, VA	102.834	7.182	11/08	7.145	11/09						
SUBTOTAL PRODUCT DEVELOPMENT			111.344	7.613		7.601							

Remarks:

SUPPORT												
SUBTOTAL SUPPORT												

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WX	VARIOUS	1.230	.030	11/08	.030	11/09					
SUBTOTAL TEST & EVALUATION			1.230	.030		.030						

Remarks:

MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	1.735	.407	11/08	.410	11/09					
Government Eng Sup	WX	VARIOUS	7.346	.330	11/08	.355	11/09					
Program Mgmt Sup	VARIOUS	VARIOUS	2.719	.382	11/08	.430	11/09					
Travel	TO	NAVAIR, PATUXENT RIVER MD	.098	.045	11/08	.045	11/09					
SUBTOTAL MANAGEMENT			11.898	1.164		1.240						

Remarks:

Total Cost			124.472	8.807		8.871						

Remarks:

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-7								0305204N, TACTICAL UNMANNED AERIAL VEHICLES					2478, TCS					
Fiscal Year	FY 2008				FY 2009				FY 2010									
	1	2	3	4	1	2	3	4	1	2	3	4						
Acquisition Milestones								IOC ★										
VTUAV EMD							▶											
COBRA Integration																		
Radar Sensor Integration					▶													
Studies and Analysis									▶									
Test & Evaluation	IT-C-1					IT-C-2A	▶					IT-D-1	▶					
							OT-C-1	▶				COBRA & Radar T&E	▶					
Production Milestones																		
Software Updates																		
TCS 3.0																		
TCS 4.0																		
TCS 5.0																		

UNCLASSIFIED

UNCLASSIFIED

R-1 Line Item No 200
Page 7 of 27

Exhibit R-2 RD TEN Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7				PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 2768, VTUAV		
COST (\$ in Millions)				FY 2008	FY 2009	FY 2010			
2768 MQ-8B (VTUAV)				62.752*	9.614				
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The MQ-8B (Vertical Take-Off and Landing Tactical Unmanned Air Vehicle (VTUAV); popular name "Fire Scout") provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8B can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8B launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, and the incorporation of an electro-optical/infrared laser designator-laser range finder modular mission payload. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8B will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.

A MQ-8B system is comprised of air vehicles, electro-optical/infrared/laser designator-rangefinder payloads, Ground Control Stations (with TCS and TC DL integrated for interoperability), and a UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment. The MQ-8B system will support Surface Warfare, Mine Interdiction Warfare, and Anti-Submarine Warfare mission modules while operating onboard LCS, and system procurement is tied to mission modules supporting LCS, vice sea frames. The System Design will also be integrated on select surface combatants that are air capable and can host MQ-8B ancillary equipment. A limited number of land-based ground control stations supplement the system to support shore-based operations, such as predeployment or acceptance functional check flights. These land-based ground control stations will also support depot level maintenance/post-maintenance activities.

A program to continue development of the MQ-8B to meet the Littoral Combat Ship (LCS) mission requirements was initiated in FY04. Program funding in FY08-10 includes efforts required to integrate the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload, a mine detection sensor, under development by PMS-495. MQ-8B development and testing activities will continue in FY09. Funding is also provided in FY09-FY10 for integration of a multi-mode radar sensor. BLOCK UPGRADE will be an SDD effort to develop interfaces and integrate a multi-mode RADAR. Additionally, BLOCK UPGRADE will add Net Centric Capabilities.

The U.S. Army has selected the MQ-8B as their Class IV UAV for the Future Combat Systems (FCS). Coordination with the U.S. Army FCS Program is on-going to investigate the potential cost savings for both programs where system commonalities and common logistics support can be identified.

USN planning is to integrate MQ-8B on FFG-8 to maintain the MQ-8B OPEVAL in FY09. First deployment of the MQ-8B system will be on FFG. MQ-8B is also supporting LCS integration schedule.

The MQ-8B program received Milestone C approval in May 2007, authorizing Low Rate Initial Production (LRIP).

*This exhibit reflects \$22.8M FY08 funding moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 VTUAV per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.

*MQ-8B project code moved from PE 0305204N to PE 0305231N in FY10.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

SD&D-HARDWARE AND SYSTEM DEVELOPMENT	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost	45.100	8.900	
RDT&E Articles Qty			

Continue incremental procurement and integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue to completion EMD of the MQ-8B system. Continue combined developmental and operational testing. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Begin integration of a multi-mode radar sensor.

SYSTEMS	FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost	4.261		
RDT&E Articles Qty			

Continue ILS, technical data, and training system development. Procurement of trainers and spares to support OPEVAL.

UNCLASSIFIED

UNCLASSIFIED

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-7		0305204N, TACTICAL UNMANNED AERIAL VEHICLES		2768, VTUAV
DEVELOPMENT TESTING	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	2.207	.344		
RDT&E Articles Qty				

Complete developmental testing of the MQ-8B system. Continue combined developmental and operational testing, TECHEVAL, and planning for OPEVAL.

ENGINEERING AND TECHNICAL SERVICES	FY 2008	FY 2009	FY 2010	
Accomplishments / Effort / Sub-total Cost	11.184	.370		
RDT&E Articles Qty				

Continue engineering management, program technical management, and management support for the MQ-8B system. These include transportation of system assets, fleet introduction team and program office personnel travel, and contract support services. Continue to support system development, system integration and test, and TECHEVAL.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2008	FY 2009	FY 2010
RDT&E 0305231N MQ-8B			25.639
APN: 044300: 0305204N MQ-8B	37.432	50.189	
APN: 044300: 0305231N MQ-8B			77.616
APN Initial Spares: 060510: 0305204N MQ-8B	8.149	6.894	
APN Initial Spares: 060510: 0305231N MQ-8B			2.340

D. ACQUISITION STRATEGY:

Continue with the MQ-8B EMD program. Design and develop an improved system initiated in FY04 to support the Littoral Combat Ship Program. Achieved Milestone C in 3Q FY2007. FRP and IOC will follow completion of OPEVAL.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2768, VTUAV							
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	C/CPFF	NORTHROP GRUMMAN , San Diego, CA	464.382	8.900	11/08								
SUBTOTAL PRODUCT DEVELOPMENT			464.382	8.900									

Remarks:

SUPPORT													
Integrated Logistics Sup	VARIOUS	VARIOUS	17.397										
SUBTOTAL SUPPORT			17.397										

Remarks:

TEST & EVALUATION													
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	4.701										
Dev Test & Eval	VARIOUS	VARIOUS	3.671										
Oper Test & Eval	WX	NAWCAD, PATUXENT RIVER MD		.080	11/08								
Oper Test & Eval	WX	NAWCAD, CHINA LAKE CA		.264	11/08								
SUBTOTAL TEST & EVALUATION			8.372	.344									

Remarks:

MANAGEMENT													
Government Eng Sup	WX	NAWCAD, CHINA LAKE CA		.080	11/08								
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	28.983	.240	11/08								
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD	19.822										
Travel	TO	NAVAIR, PATUXENT RIVER MD	.667	.050	10/08								
SUBTOTAL MANAGEMENT			49.472	.370									

Remarks:

Total Cost			539.623	9.614									

Remarks: MQ-8B project code moved from PE 0305204N to PE 0305231N, in FY10.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile										DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
RDT&E, N /BA-7					0305204N, TACTICAL UNMANNED AERIAL VEHICLES					2768, VTUAV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Fiscal Year	FY 2008				FY 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	1	2	3	4	1	2	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Acquisition Milestones																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

Remarks: MQ-8B project code moved from PE 0305204N to PE 0305231N, in FY10.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDTE&E,N / BA-7	0305204N, TACTICAL UNMANNED AERIAL VEHICLES			2768, VTUAV				
Schedule Profile	FY 2008	FY 2009	FY 2010					
Acquisition Milestones TCS/VTUAV IOC								
COBRA Integration	1Q-4Q	1Q-4Q						
Studies & Analysis								
Initial Operational Capability (IOC)		4Q						
Radar Sensor Integration		1Q-4Q						
Full Rate Production (FRP)								
VTUAV EMD (MQ-8B)	1Q-4Q	1Q-4Q						
Test & Evaluation Milestones								
IT-C-I	1Q-4Q							
IT-C-2A	4Q	1Q-3Q						
OT-C-I		4Q						
IT-D-1								
COBRA T&E								
Radar T&E								
LRIP II MQ-8B Air Vehicles contract award	4Q							
LRIP III MQ-8B Air Vehicles contract award		1Q						
FRP contract awards (I-IV)								
Delivery								
Air Vehicles -- FY07 LRIP I		3Q-4Q						
Air Vehicles -- FY07 LRIP II								
Air Vehicles -- FY08 LRIP III								
Air Vehicles -- FRP I								
Air Vehicles -- FRP II								
Air Vehicles -- FRP III								
Air Vehicles -- FRP IV								

Remarks: MQ-8B project code moved from PE 0305204N to PE 0305231N, in FY10.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		1.679	1.719					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support all Unmanned Air Vehicle (UAV) programs within the services. The mission includes Service-specific and Joint Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) programs throughout DoD. The JTC/SIL provides a Government test bed for rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) optimization. The cornerstone of JTC/SIL's diverse tool set is the Multiple Unified Simulation Environment (MUSE), which is the Department's simulation/training system of choice for ISR systems, sensors, and platforms. The Services and Warfighting Commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and CONOPS development, Tactics, Techniques, and Procedures (TTP) development and refinement, conduct emerging concepts experimentation, and C4ISR optimization within warfighting exercises and experiments. It is the only simulation system used by the Combat Commanders and Joint Services to support command and battle staff C4ISR training; there is no alternative available to satisfy those requirements. The MUSE also creates a realistic operational environment that supports an embedded training capability for multiple Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts; the ability to conduct emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4ISR optimization. MUSE is currently in use within all services and unified commands simulating Predator, Global Hawk, Hunter, and MCTUAS UAVs, national and commercial satellite collectors, P-3, and the U-2. During warfighting exercises, the JTC/SIL integrates imagery simulations with associated C4ISR systems to support execution of critical imagery processes. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. Distributed training environments, virtually linking participants from various locations worldwide, are routinely supported within the MUSE architecture. The MUSE is also used as a mission rehearsal tool for current, on-going military combat operations. Additionally, the JTC/SIL supports a range of materiel developers, integrating prototypes and trainers into the C4ISR and training environments of supported units. The Tactical UAV (TUAV) ground station developed by the JTC/SIL includes an embedded MUSE trainer, and is planned to be incorporated into the VTUAV Ground Control Station (GCS). Interim training capabilities for the Tactical Exploitation System (TES) are currently employed in the joint exercises. JTC/SIL Project Code moved from PE 0305204N to PE0603261N in FY2010.								

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB		
B. Accomplishments/Planned Program				
MUSE Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.830	0.851		
RDT&E Articles Quantity				
MUSE Development - Continue development of VTUAV model, continue Common Trainer for current platforms, continue to provide C4ISR simulation support to major exercises and demonstrations, complete integration of Tactical Exploitation of National Capabilities (TENCAP) simulation into PC-based MUSE, complete development of virtual Signals Intelligence (SIGINT) platform, continue development of Laser Designator capability, continue upgrade for National Space Assets Enhancements, continue C4I Enhancements, continue initial Fixed Target Damage simulation.				
Engineering and Maintenance	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.500	0.500		
RDT&E Articles Quantity				
Maintenance, Licenses and Equipment Purchases includes the day-to-day maintenance of lab equipment, license maintenance and license renewals from vendors for individual pieces of equipment, purchases of equipment to support the MUSE, and purchases to upgrade the MUSE capability.				
Program Management	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.349	0.368		
RDT&E Articles Quantity				
Laboratory Sustainment includes government management, contracts administration, cost accounting, configuration management, administrative support of the lab, MUSE architecture development, property management/accountability, and procurement of equipment.				

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-7	0305204N, TACTICAL UNMANNED AERIAL VEHICLES	2910, JOINT TECH CENTER/SYSTEMS INTEG LAB								
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 colspan="4">Not Applicable</td></tr></tbody></table> D. ACQUISITION STRATEGY: Not Applicable			<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>							
Not Applicable										

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-7			0305204N, TACTICAL UNMANNED AERIAL VEHICLES			2910, JOINT TECH CENTER/SYSTEMS INTEG LAB						
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	MIPR	JTC/SIL Redstone Arsenal, AL	5.954									
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			5.954	0.000		0.000						
Remarks:												
Development Support												
Software Development	MIPR	JTC/SIL Redstone Arsenal, AL	3.900	1.351	02/09							
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			3.900	1.351		0.000						
Remarks:												

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0305204N, TACTICAL UNMANNED AERIAL VEHICLES			2910, JOINT TECH CENTER/SYSTEMS INTEG LAB							
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	MIPR	JTC/SIL Redstone Arsenal, AL	2.283	0.368	11/08								
Program Management Support													
Travel													
Transportation													
SBIR Assessment													
Subtotal Management			2.283	0.368		0.000							
Remarks:													
Total Cost			12.137	1.719		0.000							
Remarks:													

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE:						
																										May 2009						
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										0305204N, TACTICAL UNMANNED AERIAL VEHICLES										2910, JOINT TECH CENTER/SYSTEMS INTEG LAB												
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																																
Test & Evaluation Milestones																																
Provide MUSE Support to UAV developers																																
Production Deliveries																																

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	6.105	22.464*						
RDT&E Articles Qty		1						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Small Tactical Unmanned Aircraft System (STUAS) provides Persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval ships (multi-ship classes) and Navy land forces. This system will fill the ISR capability shortfalls currently filled by services contracts. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval Units operating from sea/shore in the global war on terror.

A notional system consists of four air vehicles, ground control station (s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

The STUAS system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy C2 integration, SIGINT and SAR payloads and weapons integration.

STUAS project code moved from PE 0305204N to PE 0305234N, in FY10.

*Note: Exhibit reflects \$2.9M FY09 funds BTR'd to SABRE Focus Program.

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)		
B. Accomplishments/Planned Program				
SDD Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		14.300		
RDT&E Articles Quantity		1		
Award contract to initiate the System Development Demonstration (SDD) efforts for the STUAS/Tier II UAS program. The Prime System Contractor will be responsible for overall system development and performance as well as systems engineering, integrated logistics support, and associated management activities.				
Engineering and Technical Services	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	6.105	8.164		
RDT&E Articles Quantity				
Government Engineering Technical Support, Logistics Support, test and evaluation, Contractor Support Services, Program Management Support and program related travel.				
	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

UNCLASSIFIED

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-7			0305204N, TACTICAL UNMANNED AERIAL VEHICLES			3192, Small Tactical Unmanned Aircraft System (STUAS)							
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/CPIF	TBD		17.200	08/09								
Ancillary Hardware Development													
Aircraft Integration													
Ship Integration													
Ship Suitability													
Systems Engineering													
Training Development													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			0.000	17.200		0.000							
Remarks:													
Development Support													
Software Development													
Integrated Logistics Support	WX	Various		0.716	11/08								
Configuration Management													
Technical Data													
Studies & Analyses													
GFE													
Award Fees													
Subtotal Support			0.000	0.716		0.000							
Remarks:													

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N, TACTICAL UNMANNED AERIAL VEHICLES			3192, Small Tactical Unmanned Aircraft System (STUAS)						
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	OPTEVFOR, Norfolk, Va		0.743	12/08							
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, Va		0.225	12/08							
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.968		0.000						
Remarks:												
Contractor Engineering Support	Various	Various	1.310	0.764	12/08							
Government Engineering Support	WX	Various	3.500	1.843	11/08							
Program Management Support	Various	Various	1.260	0.938	12/08							
Travel	TO	NAVAIR HQ Pax River, MD	0.035	0.035	10/08							
Transportation												
SBIR Assessment												
Subtotal Management			6.105	3.580		0.000						
Remarks:												
Total Cost			6.105	22.464		0.000						
Remarks: *Note: Exhibit reflects \$2.9M FY09 funds BTR'd to SABRE Focus Program.												

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES					PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)				
Fiscal Year	2008				2009				FY2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
Acquisition Milestones																	
Pre-MS Activities								Source Selection									
Milestone B									MS-B								
									Demo								
									EMD CA								

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 9999 Congressional Adds				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
9999 Congressional Adds		6.953	6.084						
RDT&E Articles Qty									
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds									

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 9999 Congressional Adds		
B. Accomplishments/Planned Program				
9B02A Skybus 80K & 130K LTA-UAS Multirole Tech	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		1.993		
RDT&E Articles Quantity				
Development and testing of the Skybus 80K and 130K. Government Engineering Support, contractor support services, and travel.				
9B03A UAS TCS Open Architecture	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.979	2.495		
RDT&E Articles Quantity				
Develop and accelerate Open Architecture Technology Insertion solution. Government Engineering Support, contractor support services, and travel.				
9C76A Micro-munitions Interface for Tactical UAS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.974	1.596		
RDT&E Articles Quantity				
Develop an interface between Unmanned Air Systems and micro-munitions, defined as weapons weighing less than 100 pounds. Government engineering support, contractor support services, and travel.				

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305205N, Endurance Unmanned Aerial Vehicles			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	111.283	431.801	**					
4020 BAMS UAS	105.915*	430.205	**					
9999 CONGRESSIONAL ADDS	5.368	1.596						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
This program element provides for the development of endurance-type Unmanned Aircraft Systems (UAS) that will provide warfighters with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) capability.

Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)
BAMS is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies.

The BAMS UAS air vehicle is based on Northrup Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base.

BAMS UAS will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, BAMS UAS will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB).

*\$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DoD Serial Number FY08-41-RPA.

**Note: Starting In FY10, BAMS is budgeted for in PE 0305220N.

Congressional Adds
Advanced Airship Flying Laboratory
The Advanced Airship Flying Laboratory provides an airship-based capability to develop, test and demonstrate airborne mission systems equipment (Command, Control, Communications, Computers and Intelligence (C4I) and Infrared Search and Track (IRST)). Allows studies for development of a modernized naval airship featuring digital flight controls, vectored thrust and remote piloted capabilities.

Coastal Airship Surveillance Demonstrator
The Coastal Airship Surveillance Demonstrator funding will be used to operate, demonstrate and assess the capabilities of an airship to perform the coastal surveillance and intelligence-gathering mission.

Skybus 80k and 130k LTA-UAS Multirole Technologies
Development, test, design and build of the Skybus 80K will provide a platform to evaluate airship capability in performing multirole, persistent ISR and long-dwell missions in both hostile and non-threatening environments.

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																													
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0305205N, Endurance Unmanned Aerial Vehicles																																													
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>Previous President's Budget:</td> <td style="text-align: right;">121.315</td> <td style="text-align: right;">480.098</td> <td style="text-align: right;">557.037</td> </tr> <tr> <td>Current President's Budget:</td> <td style="text-align: right; border-top: 1px solid black;">111.283</td> <td style="text-align: right; border-top: 1px solid black;">431.801</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-10.032</td> <td style="text-align: right; border-top: 1px solid black;">-48.297</td> <td style="text-align: right; border-top: 1px solid black;">-557.037</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 style="text-align: right;">-0.032</td> <td style="text-align: right;">-47.127</td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td style="text-align: right;">-10.000</td> <td></td> <td style="text-align: right;">-557.004</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td></td> <td style="text-align: right;">-1.170</td> <td style="text-align: right;">-0.033</td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-10.032</td> <td style="text-align: right; border-top: 1px solid black;">-48.297</td> <td style="text-align: right; border-top: 1px solid black;">-557.037</td> </tr> </tbody> </table> Schedule: Not applicable Technical: Not applicable Notes: Starting in FY10, BAMS is budgeted for in PE 0305220N. \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.				Funding:	FY08	FY09	FY10	Previous President's Budget:	121.315	480.098	557.037	Current President's Budget:	111.283	431.801	0.000	Total Adjustments	-10.032	-48.297	-557.037	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments	-0.032	-47.127		SBIR/STTR/FTT Assessments				Program Adjustments	-10.000		-557.004	Rate/Misc Adjustments		-1.170	-0.033	Subtotal	-10.032	-48.297	-557.037
Funding:	FY08	FY09	FY10																																												
Previous President's Budget:	121.315	480.098	557.037																																												
Current President's Budget:	111.283	431.801	0.000																																												
Total Adjustments	-10.032	-48.297	-557.037																																												
Summary of Adjustments																																															
Congressional Rescissions																																															
Congressional Adjustments	-0.032	-47.127																																													
SBIR/STTR/FTT Assessments																																															
Program Adjustments	-10.000		-557.004																																												
Rate/Misc Adjustments		-1.170	-0.033																																												
Subtotal	-10.032	-48.297	-557.037																																												

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305205N, ENDURANCE UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 4020, BAMS UAS			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		83.115*	430.205					
RDT&E Articles Qty			2					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: BAMS is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies. The BAMS UAS air vehicle is based on Northrup Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base. BAMS UAS will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, BAMS UAS will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB). The BAMS UAS will be an evolutionary based acquisition, using an incremental development approach. Two Mission Need Statements (MNSs) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability MNS. The BAMS UAS Capabilities Development Document (CDD) was approved May 2007 by the Joint Requirements Oversight Council (JROC). Note: Starting in FY10, BAMS is budgeted for in PE 0305220N. *This exhibit reflects that \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.								

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N, ENDURANCE UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 4020, BAMS UAS	
B. Accomplishments/Planned Program			
PRODUCT DEVELOPMENT	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	65.700	406.818	
RDT&E Articles Quantity		2	
Awarded contract in FY08 to initiate the Engineering and Manufacturing Development (EMD) phase effort. Continue EMD in FY09-10, including Government engineering support related to EMD. Initiate two test articles in FY09. The Prime Contractor will be responsible for overall system development and performance, as well as associated management, engineering and logistics activities.			
ILS, SUPPORT, STUDIES & ANALYSES	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	8.114	11.992	
RDT&E Articles Quantity			
Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.			
PROGRAM MANAGEMENT	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	5.459	5.557	
RDT&E Articles Quantity			
Continue the following: Program Management Support and travel; development of milestone and acquisition-related documentation; budgeting and programming; capability refinement and open systems architecture development; resource justification; metric development and tracking; affordability assessments and cost analyses; risk reduction and risk management; system integration and interoperability planning; technology maturity reviews; program protection planning; corrosion prevention planning; anti-tamper provisioning planning; and Joint and International Cooperation efforts.			
NOTE: This exhibit reflects that \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.			

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N, ENDURANCE UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 4020, BAMS UAS	
B. Accomplishments/Planned Program (Cont.)			
TEST & EVALUATION	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	3.842	5.838	
RDT&E Articles Quantity			
Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.			
NOTE: This exhibit reflects that \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 VTUAV per ATR DOD Serial Number FY08-41-RPA.			

R-1 SHOPPING LIST - Item No. 201

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-7	0305205N, ENDURANCE UNMANNED AERIAL VEHICLES	4020, BAMS UAS
C. OTHER PROGRAM FUNDING SUMMARY:		
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u> <u>FY 2010</u>
RD TEN 0305220N BAMS UAS		465.839
 D. ACQUISITION STRATEGY:		
Note: Starting in FY10, BAMS is budgeted for in PE 0305220N.		
\$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.		

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7			PROGRAM ELEMENT 0305205N, ENDURANCE UNMANNED AERIAL VEHICLE			PROJECT NUMBER AND NAME 4020, BAMS UAS						
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	C/CPAF	Northrop Grumman, NY	58.600	379.533	10/08							
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	WX	VARIOUS	33.401	21.991	11/08							
Training Development												
Licenses												
Tooling												
GFE												
Award Fees	C/CPAF	Northrop Grumman, NY		5.294	12/09							
Subtotal Product Development			92.001	406.818								
Remarks:												
Development Support	VARIOUS	VARIOUS	4.916	6.241	11/08							
Software Development												
Integrated Logistics Support	WX	VARIOUS	6.863	4.740	11/08							
Configuration Management												
Technical Data												
Studies & Analyses	VARIOUS	VARIOUS	22.648	1.011	11/08							
GFE												
Award Fees												
Subtotal Support			34.427	11.992								
Remarks:												
NOTE: This exhibit reflects that \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7			PROGRAM ELEMENT 0305205N, ENDURANCE UNMANNED AERIAL VEHICLE			PROJECT NUMBER AND NAME 4020, BAMS UAS						
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	4.137	5.838	11/08							
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			4.137	5.838								
Remarks:												
Contractor Engineering Support	C/CPFF	MITRE, McLean, VA		0.756	11/08							
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	11.309	4.486	11/08							
Travel	TO	VARIOUS	0.392	0.315	10/08							
Transportation												
SBIR Assessment												
Subtotal Management			11.701	5.557								
Remarks:												
Total Cost			142.266	430.205								
Remarks:												
NOTE: This exhibit reflects that \$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 MQ-8B per Above Threshold Reprogramming (ATR) DOD Serial Number FY08-41-RPA.												

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:		May 2009												
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME												
RDT&E, N / BA-7								0305205N, ENDURANCE UNMANNED AERIAL VEHICLES						4020, BAMS UAS												
Fiscal Year	2008				2009				2010																	
	1	2	3	4	1	2	3	4	1	2	3	4														
Acquisition Milestones			MS B ◆											Note: Starting in FY10, BAMS is budgeted for in PE 0305220N.												
Contracting Activities			EMD CA ◆																							
System Engineering Activities						SRR ◆		SFR ◇		PDR ◇																
Test & Evaluation Activities			Acronyms: FRP: Full Rate Production IOC: Initial Operational Capability EMD: Engineering and Manufacturing Development CA: Contract Award LRIP: Low Rate Initial Production SRR: System Requirements Review SFR: System Functional Review PDR: Preliminary Design Review CDR: Critical Design Review FRR: Flight Readiness Review CT: Combined Testing DT: Developmental Testing OT: Operational Testing OTRR: Operational Test Readiness Review OPEVAL: Operational Evaluation																							
Production Deliveries																										

Note: Starting in FY10, BAMS is budgeted for in PE 0305220N.

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No.

201

Exhibit R-2a, RD TEN Project Justification

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305205N, ENDURANCE UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
9999 CONGRESSIONAL ADDS	5.368	1.596						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds
Advanced Airship Flying Laboratory
The Advanced Airship Flying Laboratory provides an airship-based capability to develop, test and demonstrate airborne mission systems equipment (Command, Control, Communications, Computers and Intelligence (C4I) and Infrared Search and Track (IRST)). Allows studies for development of a modernized naval airship featuring digital flight controls, vectored thrust and remote piloted capabilities.

Coastal Airship Surveillance Demonstrator
The Coastal Airship Surveillance Demonstrator funding will be used to operate, demonstrate and assess the capabilities of an airship to perform the coastal surveillance and intelligence-gathering mission.

Skybus 80k and 130k LTA-UAS Multirole Technologies
Development, test, design and build of the Skybus 80K will provide a platform to evaluate airship capability in performing multirole, persistent ISR and long-dwell missions in both hostile and non-threatening environments.

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N, ENDURANCE UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS												
B. Accomplishments/Planned Program														
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 33%;">ADVANCED AIRSHIP FLYING LABORATORY 9650A</td><td style="width: 16.5%;">FY 08</td><td style="width: 16.5%;">FY 09</td><td style="width: 16.5%;">FY 10</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>1.989</td><td>1.596</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></table>			ADVANCED AIRSHIP FLYING LABORATORY 9650A	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	1.989	1.596		RDT&E Articles Quantity			
ADVANCED AIRSHIP FLYING LABORATORY 9650A	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost	1.989	1.596												
RDT&E Articles Quantity														
Advanced Airship Flying Laboratory. Continue the development of new technologies to advance modern airships, such as digital automated flight controls, bow thrusters, and heavy fuel engines. Government Engineering Support, contractor support services, and travel.														
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 33%;">COASTAL AIRSHIP SURVEILLANCE DEMONSTRATOR 9C77A</td><td style="width: 16.5%;">FY 08</td><td style="width: 16.5%;">FY 09</td><td style="width: 16.5%;">FY 10</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>1.590</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></table>			COASTAL AIRSHIP SURVEILLANCE DEMONSTRATOR 9C77A	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	1.590			RDT&E Articles Quantity			
COASTAL AIRSHIP SURVEILLANCE DEMONSTRATOR 9C77A	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost	1.590													
RDT&E Articles Quantity														
Develop and conduct Coastal Airship Surveillance demonstrations. Government Engineering Support, contractor support services, and travel.														
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 33%;">SKYBUS 80K AND 130K LTA-UAS MULTIROLE TECHNOLOGIES 9C78A</td><td style="width: 16.5%;">FY 08</td><td style="width: 16.5%;">FY 09</td><td style="width: 16.5%;">FY 10</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td>1.789</td><td></td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></table>			SKYBUS 80K AND 130K LTA-UAS MULTIROLE TECHNOLOGIES 9C78A	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost	1.789			RDT&E Articles Quantity			
SKYBUS 80K AND 130K LTA-UAS MULTIROLE TECHNOLOGIES 9C78A	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost	1.789													
RDT&E Articles Quantity														
Development and testing of the Skybus 80K and 130K. Government Engineering Support, contractor support services, and travel.														

R-1 SHOPPING LIST - Item No. 201

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	70.175	66.273	46.208					
2694 ADVANCED DIGITAL SENSORS	61.193	55.502	46.208					
9999 CONGRESSIONAL ADD	8.982	10.771						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture. The Advanced Sensors Development Program implements successful proof-of-concept efforts accomplished in the Advanced Technology Program, other Service/Agency developments, and Congressionally-funded initiatives leading to producible sensor systems for airborne platforms. Upon successful sensor prototype demonstration, technology sensor developments are turned over to the Services for procurement and platform integration. This effort focuses on developments, which support sensor system interoperability and standardization of multi-Service and multi-platform applications. In addition, funds provide for the development/integration and operational assessment of components for the EP-3E and P-3 Special Projects Aircraft and follow-on candidate aircraft. There are two primary objectives for the Advanced Technology funding: (1) to evaluate the utility and maturity of technology for airborne reconnaissance applications and (2) to reduce the risk of employing emerging technologies in system upgrades, new system acquisitions, or Advanced Concept Technology Demonstrations (ACTDs), by integrating and exercising them in developmental and operational tests. These technologies help satisfy the requirements of the objective architecture set forth in the IARS. These technology investments are also identified in the Airborne Reconnaissance Technology Program Plan, published in November 1994. Exhibits reflect Congressional Adds currently being executed as follows: FY08 Congressional Add of \$5.008M is to implement Environmental Cooling System (ECS) upgrades for EP-3E JCC Spiral 3 Aircraft. FY08 Congressional Add of \$3.974M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance (FEATHAR). FY09 Congressional Add of \$4.787M is for EP-3E Requirements Capability Migration Technology Integration Lab. FY09 Congressional Add of \$5.984M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance (FEATHAR).								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS																																																	
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;">59.337</td> <td style="text-align: right;">55.719</td> <td style="text-align: right;">26.405</td> </tr> <tr> <td>Current President's Budget: *</td> <td style="text-align: right; border-bottom: 1px solid black;">70.175</td> <td style="text-align: right; border-bottom: 1px solid black;">66.273</td> <td style="text-align: right; border-bottom: 1px solid black;">46.208</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">10.838</td> <td style="text-align: right;">10.554</td> <td style="text-align: right;">19.803</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 style="text-align: right;">12.637</td> <td style="text-align: right;">10.734</td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td style="text-align: right;">-1.799</td> <td></td> <td style="text-align: right;">19.830</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td style="text-align: right; border-bottom: 1px solid black;"></td> <td style="text-align: right; border-bottom: 1px solid black;">-0.180</td> <td style="text-align: right; border-bottom: 1px solid black;">-0.027</td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right;">10.838</td> <td style="text-align: right;">10.554</td> <td style="text-align: right;">19.803</td> </tr> </tbody> </table> Schedule: Project Unit 2694: JCC Spiral 2 stopped in 4th Qtr FY08 due to issues during DT, slipping all additional testing; Spiral 3 DT moved from 2nd Qtr FY09 to 2nd Qtr FY10. Technical: Not Applicable. *Exhibits reflect Congressional Adds currently being executed as follows: FY08 Congressional Add of \$5.008M is to implement Environmental Cooling System (ECS) upgrades for EP-3E JCC Spiral 3 Aircraft. FY09 Congressional Add of \$4.787M is for EP-3E Requirements Capability Migration Technology Integration Lab. FY09 Congressional Add of \$5.984M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance (FEATHAR).				FY08	FY09	FY10	Funding:				Previous President's Budget:	59.337	55.719	26.405	Current President's Budget: *	70.175	66.273	46.208	Total Adjustments	10.838	10.554	19.803	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments	12.637	10.734		SBIR/STTR/FTT Assessments				Program Adjustments	-1.799		19.830	Rate/Misc Adjustments		-0.180	-0.027	Subtotal	10.838	10.554	19.803
	FY08	FY09	FY10																																															
Funding:																																																		
Previous President's Budget:	59.337	55.719	26.405																																															
Current President's Budget: *	70.175	66.273	46.208																																															
Total Adjustments	10.838	10.554	19.803																																															
Summary of Adjustments																																																		
Congressional Rescissions																																																		
Congressional Adjustments	12.637	10.734																																																
SBIR/STTR/FTT Assessments																																																		
Program Adjustments	-1.799		19.830																																															
Rate/Misc Adjustments		-0.180	-0.027																																															
Subtotal	10.838	10.554	19.803																																															

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			PROJECT NUMBER AND NAME 2694, ADVANCED DIGITAL SENSORS			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		61.193	55.502	46.208				
RDT&E Articles Qty		1	1					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities fielded in both the EP-3E and P-3 Special Projects Aircraft (SPA) platforms. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (ARITA). The advanced sensor program includes technical analysis, systems engineering assessments, planning, and development for advanced airborne sensor systems. This effort focuses on developments which support sensor system interoperability and standardization of multi-Service and multi-platform applications. The EP-3E and Special Projects will undergo a series of incremental modifications via an evolutionary acquisition process which began in FY 2001. The advanced sensor developments described herein will provide the technology transition modules necessary for the overall migration of the airborne fleet to JASA, (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces. FY05 began the integration of JMOD Common Configuration (JCC) into all EP-3 aircraft. These efforts carry forward the developments from prior years and continue the development efforts to ensure that EP-3 aircraft maintain their interoperability and relevance to emerging threats and changing technology. This funding provides for the development of the JCC capabilities and Spirals. The JCC baseline program builds on a common baseline with two spirals. Spiral 1 (ForceNet) includes high band and special collection subsystems (Story Finder, Multi-platform emitter geolocation (MPEG)) and data dissemination (Story Teller). Spiral 2 includes development of additional special collection signal capabilities and obsolescence upgrades. In FY06 the JCC program was further restructured due to delays in the Aerial Common Sensor (ACS) recapitalization program. The restructure added an obsolescence evolution and a JCC Spiral 3 upgrade to maintain EP-3E mission system viability until recapitalization platform can be fielded (current est. 2021 IOC, 2023 FOC). This funding supported the required development of the restructured JCC program. The program procured an Engineering Development Model (EDM) in FY06 for Developmental Testing (DT) of the Spiral 2 system in FY07. Spiral 3 includes signal exploitation, low-band direction finding, Remote Tuning Receivers, Integrated Information Operations (I/O) and Environment Control System (ECS) upgrades. The program will procure two (2) Spiral 3 Engineering Development Models (EDM). The first EDM will be procured in FY08 for Developmental Testing (DT) of the system in FY09 and the Low Rate Initial Production (LRIP) Decision and procurement in FY10. The second Spiral 3 EDM production representative asset will be procured in FY09 to support Operational Testing (OT). Obsolescence, Quick Response Capabilities (QRCs) and technical refresh efforts will be accomplished in conjunction with the above JCC Spiral upgrades to sustain EP-3E capabilities and viability until recapitalization/replacement. Recapitalization Capabilities Migration (RCM) funds will ensure EP-3E relevance beyond FY20 and to develop follow-on capabilities to be migrated into the recap platform. The Special Projects Modernization and Common Configuration Baseline (MCCB) program provides rapid insertion of new capabilities including improved communications, collection and analysis capabilities and weight reduction. Additionally, MCCB addresses technology refresh and obsolescence engineering. Most of the MCCB upgrades are based on stand-alone Government-Off-The-Shelf and Commercial-Off-The-Shelf (GOTS/COTS) systems. FY08 OCO procures additional ISR capabilities in support of CENTCOM requirements.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS	PROJECT NUMBER AND NAME 2694, ADVANCED DIGITAL SENSORS		
B. Accomplishments/Planned Program				
Spiral 2 development collection signal	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	8.789	0.500		
RDT&E Articles Quantity				
Restructured Spiral 2 development includes, obsolescence and data fusion capabilities. Additional special collection signal capabilities, Data Fusion and MPEG frequency extension development.				
Spiral 3 development RFD, DF, I/O, ECS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	21.304	23.226	10.000	
RDT&E Articles Quantity				
Spiral 3 development includes low-band Radio Frequency Distribution (RFD) and Direction Finding (DF) subsystem replacement, Remote Tuning Receivers, Intergrated Information Operations (I/O) and Environmental Control System (ECS) upgrades.				
Technical Refresh dev for obsolete sys	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.131	2.269	2.305	
RDT&E Articles Quantity				
The Technical Refresh development of replacement technology for obsolete and unsupportable collection and support mission systems.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS	PROJECT NUMBER AND NAME 2694, ADVANCED DIGITAL SENSORS		
B. Accomplishments/Planned Program (Cont.)				
Develop Spiral upgrades to collection subsys	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	18.391	7.758	12.460	
RDT&E Articles Quantity				
Imagery engineering investigations completed. Developed and demonstrated Special Projects Projects (SPA) Direction Finding (DF) upgrades for SP Systems Requirements Review (SRR). SPA Communications/Infrastructure updated. SPA Modernization and Common Configuration Baseline (MCCB) program. Develop Spiral upgrades to the special collections subsystem, data communications and infrastructure. Address technology refresh and obsolescence issues. Mission system weight reduction development.				
QRC for emergent threat technology	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.500	2.500	3.000	
RDT&E Articles Quantity				
Quick Response Capabilities (QRC) are for development of capabilities to meet requirements for emergent threat technology.				
EP-3E Recap capabilities migration	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	7.078	19.249	18.443	
RDT&E Articles Quantity				
Engineering development of EP-3E mission capabilities to be deployed and procured on the legacy platform for the future migration to follow-on recap platform to stay abreast of emergent threat technologies.				

UNCLASSIFIED

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-7	0305206N, AIRBORNE RECONNAISSANCE SYSTEMS	2694, ADVANCED DIGITAL SENSORS	
C. OTHER PROGRAM FUNDING SUMMARY:			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
0537, EP-3E Series	85.645	64.479	92.530
0567, Special Projects Aircraft	25.157	102.705	14.869
D. ACQUISITION STRATEGY:			
Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDTE efforts for technology insertions into EP-3E/SPA production programs.			

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			2694, ADVANCED DIGITAL SENSORS						
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					
Ancillary Hdw Dev - OBS	SS-CPFF	L-3 COM INT SYS WACO,TX	2.110	1.670	Apr 2009	1.350	Jan 2010					
Ancillary Hdw Dev - OBS	SS-CPFF	VARIOUS	2.050									
Ancillary Hdw Dev - QRC	SS-CPFF	TBD	2.500	2.350	May 2009	2.825	Dec 2009					
Ancillary Hdw Dev - RCM	C-CPFF	L-3 COM INT SYS WACO,TX	1.200	6.569	Jan 2009	5.560	Jan 2010					
Ancillary Hdw Dev - RCM	C-CPFF	RAYTHEON TECH SVC, IN	.950	7.635	Jan 2009	7.307	Jan 2010					
Ancillary Hdw Dev - RCM	C-CPFF	VARIOUS	3.580	2.545	Jan 2009	1.681	Jan 2010					
Ancillary Hdw Dev - SPA	SS-CPFF	ARGON ST, INC, VA	14.968	1.100	Dec 2008	2.883	Dec 2009					
Ancillary Hdw Dev - SPA	SS-CPFF	L-3 COM INT SYS WACO,TX	12.782	2.375	Apr 2009							
Ancillary Hdw Dev - SPA	SS-CPFF	TBD				2.800	Jan 2010					
Ancillary Hdw Dev - SPA	SS-CPFF	TBD				2.500	Jan 2010					
Ancillary Hdw Dev - SPA	SS-CPFF	TBD										
Ancillary Hdw Dev - SPA	SS-CPFF	VARIOUS	2.542	.247	Dec 2008	.350	Dec 2009					
Ancillary Hdw Dev - Spiral 2	SS-CPFF	L-3 COM INT SYS WACO,TX	30.573									
Ancillary Hdw Dev - Spiral 3	SS-CPFF	L-3 COM INT SYS WACO,TX	31.397	15.050	Feb 2009	4.140	Dec 2009					
Ancillary Hdw Dev - Spiral 3	SS-CPFF	RAYTHEON TECH SVC, IN	5.116									
Primary Hdw Development	C-CPFF	TBD										
Subtotal Product Development			109.768	39.541		31.396						
Remarks:												

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			2694, ADVANCED DIGITAL SENSORS						
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 Support - OBS	VARIOUS	VARIOUS	2.506									
Develop Support - RCM	VARIOUS	VARIOUS	1.204	1.000	Dec 2008	1.445	Dec 2009					
Develop Support - SPA	VARIOUS	VARIOUS	8.593	2.998	Dec 2008	2.467	Dec 2009					
Develop Support - Spiral 1	VARIOUS	VARIOUS	2.965									
Develop Support - Spiral 2	VARIOUS	VARIOUS	3.295									
Develop Support - Spiral 3	VARIOUS	VARIOUS		1.389	Dec 2008							
Develop Support - Spiral 3	VARIOUS	AT&T GOVT SOL INC, VA	2.271	.995	Dec 2008	1.500	Dec 2009					
ETS (NON-FFRDC) SP2	VARIOUS	AT&T GOVT SOL INC, VA	.600									
ETS (NON-FFRDC) SP3	VARIOUS	AT&T GOVT SOL INC, VA	.642	.562	Dec 2008	.500	Dec 2009					
ETS (NON-FFRDC) SPA	VARIOUS	AT&T GOVT SOL INC, VA	1.683	.500	Dec 2008	.800	Dec 2009					
ETS (NON-FFRDC) RCM	VARIOUS	AT&T GOVT SOL INC, VA				.600	Dec 2009					
Subtotal Support			23.758	7.444		7.312						
Remarks: Dollars may not add due to rounding.												

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			PROJECT NUMBER AND NAME 2694, ADVANCED DIGITAL SENSORS					
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				
DT/Eval - SPA	VARIOUS	VARIOUS	2.041	.480	Dec 2008	.600	Dec 2009				
DT/OT & Eval - RCM	VARIOUS	NAWCAD, PAX RIVER, MD		1.000	Dec 2008	.750	Dec 2009				
DT/OT & Eval - Spiral 1	VARIOUS	NAWCAD, PAX RIVER, MD	.056								
DT/OT & Eval - Spiral 2	VARIOUS	NAWCAD, PAX RIVER, MD	3.327	.500	Dec 2008						
DT/OT & Eval - Spiral 3	VARIOUS	NAWCAD, PAX RIVER, MD	.082	3.735	Dec 2008	3.750	Dec 2009				
Test & Eval - QRC	VARIOUS	NAWCAD, PAX RIVER, MD		.150	Dec 2008	.175	Dec 2009				
Subtotal T&E			5.506	5.865		5.275					
Remarks:											
Systems Eng Spt - OBS	WX	NAWCAD, PAX RIVER, MD	.364	.544	Dec 2008	.900	Dec 2009				
Systems Eng Spt - RCM	WX	NAWCAD, PAX RIVER, MD	.144	.500	Dec 2008	1.000	Dec 2009				
Systems Eng Spt - Spiral 2	WX	NAWCAD, PAX RIVER, MD	.651								
Systems Eng Spt - Spiral 3	WX	NAWCAD, PAX RIVER, MD	.414	1.405	Dec 2008	.055	Dec 2009				
Travel - SPA	TO	NAWCAD, PAX RIVER, MD	.354	.058	Dec 2008	.060	Dec 2009				
Travel - Spiral 2	TO	NAWCAD, PAX RIVER, MD	.352								
Travel - Spiral 3	TO	NAWCAD, PAX RIVER, MD	.353	.090	Dec 2008	.055	Dec 2009				
Travel - RCM	TO	NAWCAD, PAX RIVER, MD				.100	Dec 2009				
Travel-NSMA	TO	NAWCAD, PAX RIVER, MD		.055	Dec 2008	.055	Dec 2009				
Travel-NSMA	TO	NAWCAD, PAX RIVER, MD	.164								
Subtotal Management			2.795	2.652		2.225					
Remarks: Dollars may not add due to rounding.											
Total Cost			141.827	55.502		46.208					
Remarks:											

UNCLASSIFIED

EXHIBIT R4, Schedule Profile												DATE:		May 2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
RDT&E,N / BA-7								0305206N, AIRBORNE RECONNAISSANCE SYSTEMS						2694, ADVANCED SIGNAL RECOGNITION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Fiscal Year	FY 2008				FY 2009				FY 2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
EP-3 Program Milestones																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

UNCLASSIFIED

[illegible]

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			PROJECT NUMBER AND NAME 9999, Congressional Add			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	8.982	10.771						
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds. Exhibits reflect Congressional Adds currently being executed as follows: FY08 Congressional Add of \$5.008M is to implement Environmental Cooling System (ECS) upgrades for EP-3E JCC Spiral 3 Aircraft. FY08 Congressional Add of \$3.974M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance (FEATHAR). FY09 Congressional Add of \$4.787M is for EP-3E Requirements Capability Migration Technology Integration Lab. FY09 Congressional Add of \$5.984M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance (FEATHAR).								

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEMS	PROJECT NUMBER AND NAME 9999, Congressional Add		
B. Accomplishments/Planned Program				
9437A	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.974	5.984		
RDT&E Articles Quantity				
Continue the development of algorithmic, cueing and software focused efforts (Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance [FEATHAR]) in support of the Deployable Unmanned Systems for Targeting, Exploitation, and Reconnaissance (DUSTER) system. This system could simultaneously extend the area of intelligence gathering, keep the operators out of harms way, and provide an airborne real-time exploitation and dissemination node to identify, geo-locate, and track enemy targets.				
9C79A	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	5.008			
RDT&E Articles Quantity				
Provide ancillary hardware development in support of Spiral 3. Spiral 3 development includes low-band Radio Frequency Distribution (RFD) and Direction Finding (DF) subsystem replacement, Remote Tuning Receivers, Integrated Information Operations (I/O) and Environmental Control System (ECS) upgrades.				
9E25A	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		4.787		
RDT&E Articles Quantity				
Initiate the development of an EP-3E Requirements Capability Migration Technology Integration Lab.				

CLASSIFICATION:								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			R-1 ITEM NOMENCLATURE PE: 0305208N TITLE: Distributed Common Ground System - Navy					
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	21.141	44.222	18.079					
2174 Distributed Common Ground System - Navy (DCGS-N)	19.154	44.222	18.079					
9999 Congressional Add	1.987	0.000	0.000					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Distributed Common Ground System – Navy (DCGS-N) is the Navy's portion of the Department of Defense (DOD) DCGS effort. DOD has defined a DCGS architecture that will be verifiably compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. The DOD DCGS will access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data will be shared across a Joint enterprise using the DCGS Integration Backbone (DIB) to enhance interoperability of ISR information across joint forces through the use of common enterprise standards and services. It will support Joint Task Force (JTF)-level combat operations and support JTF commanders and below with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and the Global War on Terrorism. DCGS is a cooperative effort between the services, agencies, and DOD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS is further subdivided into systems which process, exploit, and disseminate Measurements Analysis and Signatures Intelligence (MASINT) data, Signals Intelligence (SIGINT) data, Multi-Intelligence Reconnaissance data, and Imagery data.

The DCGS-N system represents the integration of: 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); 2) Precision target geospositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) and Command and Control (C2) information via DIB and Net-Centric Enterprise Services (NCES) standards with a wide range of anticipated and unanticipated customers (e.g., Global Command and Control System - Maritime, GCCS-M).

DCGS-N will become part of the DOD DCGS Network Enterprise via DCGS Integration Backbone (DIB) standards. DCGS-N will stay abreast of evolving requirements and ensure compliance with the DOD DCGS network architecture. Engineering work is funded to migrate legacy Joint Fires Network (JFN)/ Joint Services Imagery Processing System - Navy (JSIPS-N) capabilities to this network environment. The government is the integrator for the DCGS-N system

The Navy is focusing on establishing an ISR Enterprise way ahead that will emphasize a reach back strategy with a focus on Maritime Operations Center (MOC) activities providing intelligence products to support deployed ship and shore operations. The Navy will also initiate migration to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of ISR Enterprise capability (MOC to MOC to afloat), development and migration of ISR SOA applications, and development and integration to leverage the Integrated Shipboard Network System (ISNS) strategy for a Common Computing Environment (CCE). This effort has resulted in a realignment of the program, replacing the DCGS-N 1.1 with a redesigned, smaller, maintainable, less expensive system that will eventually migrate to the CCE aboard ship and shift the focus of the program to producing SOA ISR applications. Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis tool applications for the Navy. As a result, the funding profile was modified to revise the procurement schedule, maintain the equipment support line, and focus on product improvement for migration to the CCE and support to fielded systems until replaced by DCGS-N systems.

Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10 (funds were previously budgeted under the Tactical Command System budget PE 0604231N). 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), managed by the Secretary of Defense through the Assistant Secretary of Defense for Command, Control, Communications, Computers and Intelligence (C4I).

Joint Service Imagery Processing System - Navy (JSIPS-N) tech refresh and service life extension upgrades will provide shipboard digital imagery architecture with the capability to receive, exploit, store, and disseminate imagery products based on national, theater, and tactical sensors. JSIPS-N service life extension is comprised of five subsystems: Joint Concentrator Architecture (JCA), Common Geopositioning Service (CGS), Image Product Library (IPL), Imagery Exploitation Support System (IESS), and the Sharp Display System (SDS). JSIPS-N is the Navy's cooperative imagery processing system component in DCGS-N. JSIPS-N service life extension will overcome obsolescence and improve systems reliability until DCGS-N fully replaces JSIPS-N ashore and afloat.

Program Realignments:
The Navy realigned RDTE funds in FY10 from DCGS-N (PE 0305208N) to Ship Communication Automation – SCI Networks (PE 0204163N) and Ship Communication Automation – Integrated Shipboard Network Systems (ISNS) Increment 2 / Consolidated Afloat Networks and Enterprise Services (CANES) (PE 0303138N). These funds have been realigned to develop and integrate ISNS strategy for a CCE. SCI Networks program will start migrating to the ISNS Increment 2 / CANES in FY09. ISNS Inc 2 / CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; CCE; SOA; and Multi-Level Security (MLS) / Cross Domain Solutions (CDS). The Navy realigned RDTE funds in FY10 from DCGS-N (PE 0305208N) to Ship Operations Support and Training (OMN 1B2B) to support legacy system (JSIPS-N).

Congressional Adds:
Maritime Intelligence Integration-Shared Situational Awareness - Congressional add funds for continued support of the DCGS-N Experimentation and Analysis Laboratory (DEAL) to effect network-centric requirements through experimentation with Naval Aviation, inter-agency, multi-service and space-based ISR data for increased Maritime Intelligence Integration and sharing of Maritime Domain Situational Awareness.

Advanced Field Artillery Tactical Data Systems (AFATDS) Interoperability - Congressionally added funds for the exchange of information between existing Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) systems and Command and Control (C2) systems. Significant reduction in the sensor-to-effects timeline can be achieved through enhanced automated information exchange between DCGS-N ISR&T capability and C2, via NCES and DCGS-N Integration Backbone (DIB) standards, offering data producers and consumers a single/common seamless capability for exposing, discovering, publishing and subscribing to ISR&T data, in accordance with DoD Directive 8320.2.

Exhibit R-2, RTDEN Budget Item Justification

CLASSIFICATION:			
EXHIBIT R-2, RDT&E Budget Item Justification			DATE: May 2009
APPROPRIATION/BUDGET	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA 7	PE: 0305208N TITLE: Distributed Common Ground System - Navy		2174 Distributed Common Ground System - Navy (DCGS-N)

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	21.141	44.540	43.024
FY10 President's Budget	<u>21.141</u>	<u>44.222</u>	<u>18.079</u>
Total Adjustments	0.000	-0.318	-24.945

Summary of Adjustments			
Program Adjustments		-0.318	-24.804
Rate/Misc Adjustments			<u>-0.141</u>
Subtotal	<u>0.000</u>	<u>-0.318</u>	<u>-24.945</u>

Schedule:

Due to the change in the acquisition status from ACAT II to ACAT IAM the Joint Staff directed review of the DCGS-N Inc I Capability Production Document (CPD). This review, in addition to the approvals of follow-on documentation, added six months to the schedule causing major milestones to slip to the right approximately two quarters i.e. BLK 1 TEMP, INC 1 MS C, and Operational Assessment (OA)/Operational Test (OT). Due to the DCGS-N BLK 1 schedule changes, the BLK 2 schedule has also shifted to the right approximately four quarters i.e. BLK 2 MS C/LD, Operational Assessment (OA)/Operational Test (OT), and Full Rate Production (FRP). DCGS-N Increment 2 has shifted two quarters due to an RDTEN reduction; this will result in BLK 2 fielding thru FY13 with DCGS-N Increment 2 to begin fielding in FY14.

Technical:

Does not have a technical impact.

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT (PE) NUMBER AND NAME PE: 0305208N Distributed Common Ground System - Navy				PROJECT NUMBER AND NAME 2174 Distributed Common Ground System – Navy (DCGS-N)			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost		23.154	44.222	18.079					
2174 Distributed Common Ground System – Navy (DCGS-N)		19.154	44.222	18.079					
RDT&E Articles Quantity		4							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Distributed Common Ground System – Navy (DCGS-N) is the Navy's portion of the Department of Defense (DOD) DCGS effort. DOD has defined a DCGS architecture that will be verifiably compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. The DOD DCGS will access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data will be shared across a Joint enterprise using the DCGS Integration Backbone (DIB) to enhance interoperability of ISR information across joint forces through the use of common enterprise standards and services. It will support Joint Task Force (JTF)-level combat operations and support JTF commanders and below with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and the Global War on Terrorism. DCGS is a cooperative effort between the services, agencies, and DOD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS is further subdivided into systems which process, exploit, and disseminate Measurements Analysis and Signatures Intelligence (MASINT) data, Signals Intelligence (SIGINT) data, Multi-Intelligence Reconnaissance data, and Imagery data. The DCGS-N system represents the integration of: 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) and Command and Control (C2) information via DIB and Net-Centric Enterprise Services (NCES) standards with a wide range of anticipated and unanticipated customers (e.g., Global Command and Control System - Maritime, GCCS-M). DCGS-N will become part of the DOD DCGS Network Enterprise via DCGS Integration Backbone (DIB) standards. DCGS-N will stay abreast of evolving requirements and ensure compliance with the DOD DCGS network architecture. Engineering work is funded to migrate legacy Joint Fires Network (JFN)/ Joint Services Imagery Processing System - Navy (JSIPS-N) capabilities to this network environment. The government is the integrator for the DCGS-N system. The Navy is focusing on establishing an ISR Enterprise way ahead that will emphasize a reach back strategy with a focus on Maritime Operations Center (MOC) activities providing intelligence products to support deployed ship and shore operations. The Navy will also initiate migration to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of ISR Enterprise capability (MOC to MOC to afloat), development and migration of ISR SOA applications, and development and integration to leverage the Integrated Shipboard Network System (ISNS) strategy for a Common Computing Environment (CCE). This effort has resulted in a realignment of the program, replacing the DCGS-N 1.1 with a redesigned, smaller, maintainable, less expensive system that will eventually migrate to the CCE aboard ship and shift the focus of the program to producing SOA ISR applications. Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis tool applications for the Navy. As a result, the funding profile was modified to revise the procurement schedule, maintain the equipment support line, and focus on product improvement for migration to the CCE and support to fielded systems until replaced by DCGS-N systems. Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10 (funds were previously budgeted under the Tactical Command System budget PE 0604231N). 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), managed by the Secretary of Defense through the Assistant Secretary of Defense for Command, Control, Communications, Computers and Intelligence (C4I). Joint Service Imagery Processing System - Navy (JSIPS-N) tech refresh and service life extension upgrades will provide shipboard digital imagery architecture with the capability to receive, exploit, store, and disseminate imagery products based on national, theater, and tactical sensors. JSIPS-N service life extension is comprised of five subsystems: Joint Concentrator Architecture (JCA), Common Geopositioning Service (CGS), Image Product Library (IPL), Imagery Exploitation Support System (IESS), and the Sharp Display System (SDS). JSIPS-N is the Navy's cooperative imagery processing system component in DCGS-N. JSIPS-N service life extension will overcome obsolescence and improve systems reliability until DCGS-N fully replaces JSIPS-N ashore and afloat. The Navy realigned RDTE funds in FY10 from DCGS-N (PE 0305208N) to Ship Communication Automation – SCI Networks (PE 0204163N) and Ship Communication Automation – Integrated Shipboard Network Systems (ISNS) Increment 2 / Consolidated Afloat Networks and Enterprise Services (CANES) (PE 0303138N). These funds have been realigned to development and integrate ISNS strategy for a CCE. SCI Networks program will start migrating to the ISNS Increment 2 / CANES in FY09. ISNS Inc 2 / CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; CCE; SOA; and Multi-Level Security (MLS) / Cross Domain Solutions (CDS). The Navy realigned RDTE funds in FY10 from DCGS-N (PE 0305208N) to Ship Operations Support and Training (OMN 1B2B) to support legacy system (JSIPS-N).									

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT (PE) NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA-7

PE: 0305208N Distributed Common Ground System - Navy

2174 Distributed Common Ground System – Navy (DCGS-N)

(U) B. Accomplishments/Planned Program

DCGS-N	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	14.404	40.972	17.079	
RDT&E Articles Quantity	4			

DCGS-N: Primary and ancillary system software design / development and related activities for Distributed Common Ground System - Navy (DCGS-N) Increment 1. These activities include Increment 1 development and operational testing and evaluation, integration of core components, and development of software capabilities to enhance the end-end usability of DCGS-N Increment 1 across the Navy and joint enterprise.

FY08 Accomplishments:

Increment 1: Leveraged DCGS-N 1.1 development efforts for Block 1 architecture development and software development, including migration to the Navy's Common Computing Environment (CCE). Successful development testing of the DCGS-N exploitation suite and the DCGS-N Enterprise Node (DEN), including highly visible participation in the Navy's TRIDENT WARRIOR - 08 Sea Trial process, and the joint EMPIRE CHALLENGE demonstration. Test and Evaluation Master Plan (TEMP) completed in conjunction with Director, Operational Test and Evaluation (DOT&E) and COMOPTEVFOR personnel. Reviewed DCGS-N Increment 1 requirements with Fleet Subject Matter Experts (SMEs), including successful completion of the System Readiness Review (SRR), Preliminary Design Review (PDR) and the Critical Design Review (CDR).

FY09 Plan:

Increment 1: Continue development of DCGS-N Increment 1 Block 1 applications for fielding in migration to a Service Oriented Architecture (SOA) environment. Supports migration of additional SOA applications leveraging the Integrated Shipboard Network System (ISNS) Common Computing Environment (CCE). Begin development of Increment 1 Block 2 capability enhancements, including collection management capabilities, Moving Target Indicator (MTI) processor integration. Begin integration of SOA applications leveraging onto ISNS Increment 1 CCE hardware. Conduct Shipboard Operational Tests (OT), participating in TRIDENT WARRIOR - 09 Sea Trial and EMPIRE CHALLENGE - 09 demonstration. Begin testing the additional SOA applications in the ISNS CCE. Conduct tests with early adopters where possible.

Increment 2: Begin Capability Development Document (CDD) development efforts and Analysis on Alternatives (AoA) on technology exploration.

FY10 Plan:

Increment 1: Additional migration to the Navy's CCE / Core Enterprise Services (CES). Development of DCGS-N Increment 1 Block 2, including collection management and MTI enhancements, participate in TRIDENT WARRIOR - 10 Sea Trial and EMPIRE CHALLENGE - 10 demonstration.

Increment 2: Continue CDD Development and preparations for Increment 2 Milestone (M/S) B. Continue technology assessments and early AoA work.

I3: Integrated Imagery and Intelligence (I3) funding transitions into the DCGS-N PE 0305208N beginning in FY10, funds were previously budgeted under the Tactical Command System budget PE 0604231N. Continue to conduct operational testing, begin new software development, and provide for the technical migration of standardized, linked intelligence data and imagery software tools and services from a platform-centric model to a services oriented architecture (SOA). The RDT&E focus includes modernizing interfaces between Special Intelligence (SI) Tools and Global Command and Control System (GCCS) / DCGS Middle and Data Tier services and Consolidated Afloat Network Enterprise Services (CANES) Infrastructure and the migration to National Geospatial Intelligence (GEOINT) Core Services (National Geospatial-Intelligence Agency (NGA) SOA), DCGS Enterprise Services. Efforts include support for end to end intelligence analysis tools that leverage Modernized Integrated Database (MIDB), NGA-related digital mapping and imagery products, and other intelligence support streams, while continuing to ensure joint intelligence interoperability across the GCCS and DCGS enterprise.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT (PE) NUMBER AND NAME PE: 0305208N Distributed Common Ground System - Navy	PROJECT NUMBER AND NAME 2174 Distributed Common Ground System – Navy (DCGS-N)

B. Accomplishments/Planned Program

DCGS-N Testbeds	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	3.000	1.500	0.000	
RDT&E Articles Quantity				

DCGS-N Testbeds: Funds the Navy's contribution to the Distributed Development, Test, Demonstration, and Experimentation Network.
FY08 Accomplishments: Conducted interoperability Test & Evaluation (T&E) among service and agency DCGS labs, test facilities, etc.
FY09 Plan: Continue coordinated T&E among various service and agency DCGS labs and test facilities to ensure continued interoperability as system changes occur.

Common Security and Discovery Services	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	1.000	1.000	1.000	
RDT&E Articles Quantity				

Common Security and Discovery Services: Effort to migrate to common security and discovery services within the DCGS programs via Net-Centric Enterprise Services (NCES). This effort will improve the coordination and the acceleration of the introduction of NCES services into the DCGS/Intelligence, Surveillance and Reconnaissance (ISR) enterprise. This funding provides minimal full-time staffing to support the execution of the project plan.
FY08 Accomplishments: Continued participation in development and demonstration of Core Enterprise Services (CES) and in the Enterprise Services Working Group (ESWG); Continued to follow Pilot Plan, which included expanding services and capabilities.
FY09 Plan: Continue participation in development and demonstration of CES and in the ESWG; Continue to follow Pilot Plan; integrate DCGS testbed capabilities into Project Plan.
FY10 Plan: Continue participation in development and demonstration of CES and in the ESWG; Continue to follow Pilot Plan; integrate DCGS testbed capabilities into Project Plan.

Concept of Operations (CONOPS):	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.750	0.750	0.000	
RDT&E Articles Quantity				

Concept of Operations (CONOPS):
FY08 Accomplishments: Continued with CONOPS that ensures DCGS interoperability with Services and Coalition partners. This effort maximized ISR processing capability and provided a common understanding of the direction and means to the desired end-state.
FY09 Plan: Continue with CONOPS that ensures DCGS interoperability with Services and Coalition partners. This effort will maximize ISR processing capability and provide a common understanding of the direction and means to the desired end-state.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:										
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE: 0305208N TITLE: Distributed Common Ground System - Navy						PROJECT NUMBER AND NAME 2174 Distributed Common Ground System – Navy (DCGS-N)		
C. OTHER PROGRAM FUNDING SUMMARY:										
<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>
OPN LI 2914	64.246	38.220	27.632	-	-	-	-	-	Continuing	Continuing
D. ACQUISITION STRATEGY:										
The Distributed Common Ground System - Navy (DCGS-N) program will utilize contracting vehicles already in place for the existing Army Tactical Exploitation of National Capabilities (TENCAP) and Joint Services Imagery Processing System – Navy (JSIPS-N) and other fielded programs. The Navy plan is to adapt these programs and develop interoperability with the DCGS Integration Backbone (DIB) standards for support of Navy Network Centric Warfare Time Critical Targeting. The government is the system integrator for the DCGS-N Increment 1 system. For DCGS-N Increment 1 SPAWAR Systems Center (SSC) will also leverage the current Joint Global Command and Control System (GCCS-J) Integrated Imagery and Intelligence (I3) and JSIPS-N and other fielded systems. The DCGS-N Increment 2 acquisition strategy includes the award of a competitive contract for a prime product integrator.										

Exhibit R-2a, RDTEN Project Justification

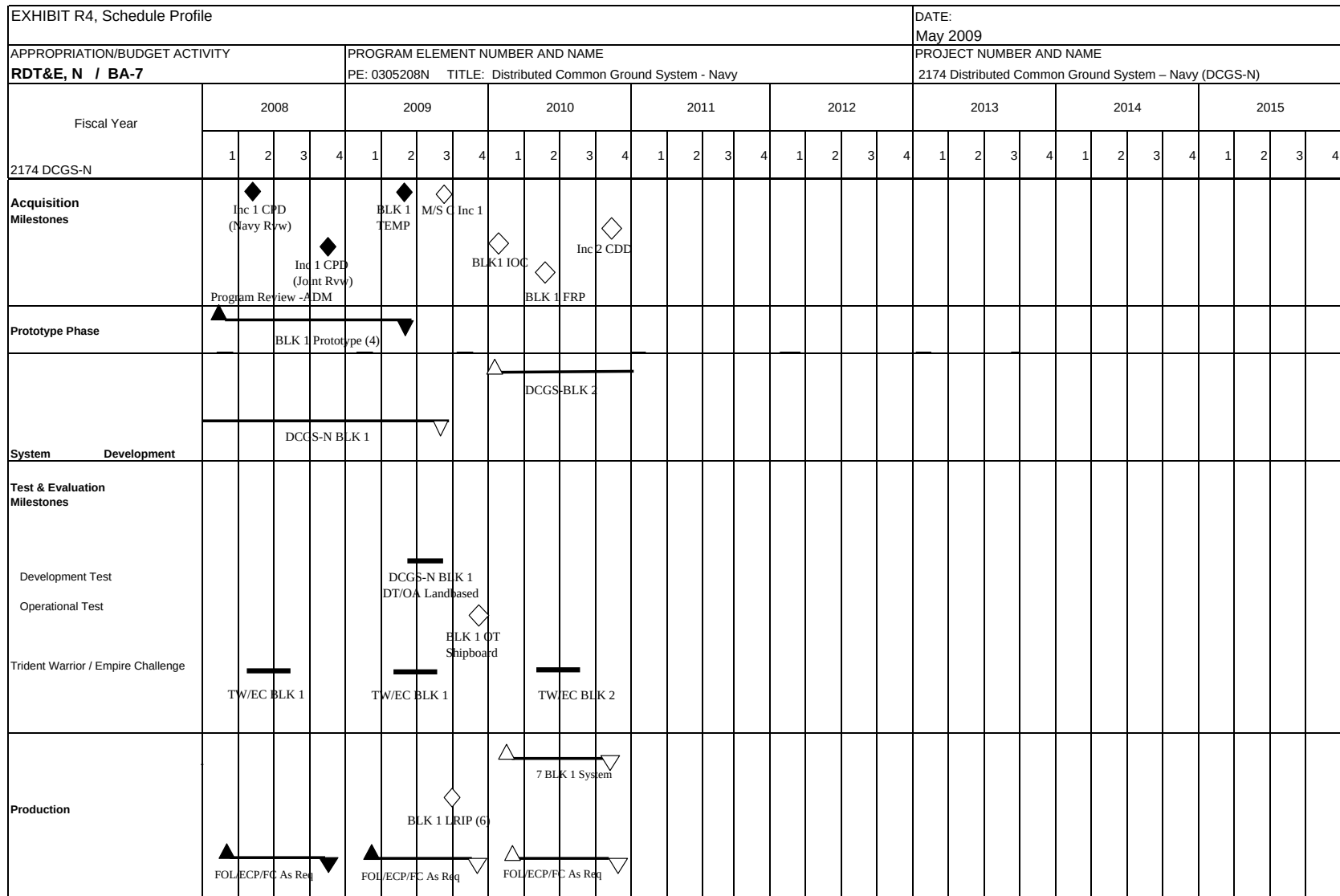
CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT PE: 0305208N TITLE: Distributed Common Ground System - Navy				PROJECT NUMBER AND NAME 2174 Distributed Common Ground System – Navy (DCGS-N)					
Cost 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	3.621	1.114	Various	1.088	Various					
Primary Hardware Development	CPAF/C	BAE	1.235	0.778	04/09	0.776	12/09					
Ancillary Hardware Development												
Systems Engineering	Various	Various	3.785	18.347	Various	3.759	Various					
Systems Engineering	CPAF/C	JFCOMM	3.709	1.925	12/08	1.424	12/09					
Systems Engineering	CPAF/C	BAE	13.523	6.601	04/09	3.117	12/09					
Systems Engineering	CPAF/C	LMSI	1.327	2.449	12/08	1.156	12/09					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			27.200	31.214		11.320						
Remarks:												
Development Support	CPAF/C	Various	2.297	1.570	Various	0.269	Various					
Software Development	CPAF/C	BAE	14.353									
Training Development												
Integrated Logistics Support	Various	NSWC PH, L3, SAIC	0.802	2.980	Various	1.598	Various					
Configuration Management	CPAF/C	L3	0.309	1.570	01/09	1.168	12/09					
Technical Data	WX	NSWC PH	0.124	0.228	11/08	0.107	11/09					
GFE												
Subtotal Support			17.885	6.348		3.142						
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-7		PE: 0305208N TITLE: Distributed Common Ground System - Navy				2174 Distributed Common Ground System - Navy (DCGS-N)						
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	SAIC, L3, Titan, SSC CHAS	6.619	2.999	Various	1.652	Various					
Operational Test & Evaluation	Various	SAIC, NAWC, NGES, OPTEVFOR, NSWC Corona	2.091	2.750	Various	1.534	Various					
Tooling												
GFE												
Subtotal T&E			8.710	5.749		3.186						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	CPAF/C	SAIC	0.308	0.697	04/09	0.311	12/09					
Program Management Personnel												
Travel	DTS	SPAWAR	0.185	0.214	Various	0.120	Various					
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.493	0.911		0.431						
Remarks:												
Total Cost			54.288	44.222		18.079						

Exhibit R-3, Project Cost Analysis

CLASSIFICATION:



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7					PROJECT NUMBER AND NAME 2174 Distributed Common Ground System - Navy (DCGS-N)			
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Fleet Experiments								
DCGS-N BLK 1 DT/OA Landbased		2Q - 3Q						
DCGS-N BLK 1 OT Shipboard		4Q						
Trident Warrior / Empire Challenge BLK 1	2Q - 3Q	2Q - 3Q						
Trident Warrior / Empire Challenge BLK 2			2Q - 3Q					
Trident Warrior / Empire Challenge Inc 2								
Trident Warrior / Empire Challenge Inc 2 Future								
Increment development								
DCGS-N BLK 1 Development	1Q - 4Q	1Q - 3Q						
DCGS-N BLK 2 Development			1Q - 4Q					
Acquisition Program								
DCGS-N BLK 1 FRP			2Q					
DCGS-N BLK 1 IOC			1Q					
DCGS-N BLK 1 LRIP		3Q						
DCGS-N BLK 1 TEMP		2Q						
DCGS-N Inc 1 CPD (Navy Review)	2Q							
DCGS-N Inc 1 CPD (Joint Review)	4Q							
DCGS-N Inc 1 M/S C Decision		3Q						
DCGS-N Inc 2 CDD			4Q					
DCGS-N Procurement			1Q - 4Q					
Fact of Life Upgrades/ECPS/Field Changes to Fielded Equipment	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Prototype								
BLK 1 Prototype	1Q-4Q	1Q-2Q						

Exhibit R-4a, Schedule Detail

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT (PE) NUMBER AND NAME PE: 0305208N Distributed Common Ground System - Navy				PROJECT NUMBER AND NAME 9999 Congressional Add		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
9999 Congressional Add	1.987							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Maritime Intelligence Integration-Shared Situational Awareness: Congressional add funds for continued support of the Distributed Common Ground System - Navy (DCGS-N) Experimentation and Analysis Laboratory (DEAL) to effect network-centric requirements through experimentation with Naval Aviation, inter-agency, multi-service and space-based Intelligence, Surveillance and Reconnaissance (ISR) data for increased Maritime Intelligence Integration and sharing of Maritime Domain Situational Awareness. Advanced Field Artillery Tactical Data Systems (AFATDS) Interoperability: Congressionally added funds for the exchange of information between existing Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) systems and Command and Control (C2) systems. Significant reduction in the sensor-to-effects timeline can be achieved through enhanced automated information exchange between DCGS-N ISR&T capability and C2, via Net-Centric Enterprise Service (NCES) and DCGS-N Integration Backbone (DIB) standards, offering data producers and consumers a single/common seamless capability for exposing, discovering, publishing and subscribing to ISR&T data, in accordance with DoD Directive 8320.2.								

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

RDT&E, N / BA-7

PE: 0305208N TITLE: Distributed Common Ground System - Navy

PROJECT NUMBER AND NAME

9999 Congressional Add

B. Accomplishments/Planned Program

9B08A Maritime Intelligence Integration For Shared Situational Awareness	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.994	0.000	0.000	0.000
RDT&E Articles Quantity				

Maritime Intelligence Integration-Shared Situational Awareness: Congressional add funds for continued support of the Distributed Common Ground System - Navy (DCGS-N) Experimentation and Analysis Laboratory (DEAL) to effect network-centric requirements through experimentation with Naval Aviation, inter-agency, multi-service and space-based Intelligence, Surveillance and Reconnaissance (ISR) data for increased Maritime Intelligence Integration and sharing of Maritime Domain Situational Awareness.

FY08 Accomplishments: Exercised support for EMPIRE CHALLENGE 08 to demonstrate maritime domain awareness and maritime operations center interoperability with other Service DCGS systems, Joint Inter-Agency Task Force (JIATF) South and a surrogate DCGS-N Afloat, and to enhance maritime domain awareness interoperability with JIATF South.

9C80A DCGS-N Advanced Field Artillery Tactical Data Systems (AFATDS)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.993	0.000	0.000	0.000
RDT&E Articles Quantity				

AFATDS Interoperability: Congressionally added funds for the exchange of information between existing Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) systems and Command and Control (C2) systems. Significant reduction in the sensor-to-effects timeline can be achieved through enhanced automated information exchange between DCGS-N ISR&T capability and C2, via Net-Centric Enterprise Service (NCES) and DCGS-N Integration Backbone (DIB) standards, offering data producers and consumers a single/common seamless capability for exposing, discovering, publishing and subscribing to ISR&T data, in accordance with Department of Defense (DOD) Directive 8320.2.

FY08 Accomplishments: Integrated and automated the interoperability between DCGS-N / ISR and the Service Oriented Architecture environment. Expanded DCGS interoperability and integration via the Enterprise Services Interoperability and Integration (ESII) group to establish a network-centric, near-real time capability that can be shared, at appropriate security levels, by Federal, State, Local, and International agencies with maritime responsibilities.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305220N, RQ-4 UAV			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost			465.839					
4020 BAMS UAS			465.839					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)
 BAMS is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies.

The BAMS UAS air vehicle is based on Northrup Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base.

BAMS UAS will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, BAMS UAS will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB).

Note: Prior to FY10, BAMS was budgeted for in PE 0305205N.

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA-7	R-1 ITEM NOMENCLATURE 0305220N, RQ-4 UAV

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
Previous President's Budget:			557.037 *
Current President's Budget:			465.839
Total Adjustments	0.000	0.000	-91.198
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments			
SBIR/STTR/FTT Assessments			
Program Adjustments			-91.165
Rate/Misc Adjustments			-0.033
Subtotal	0.000	0.000	-91.198

Schedule:

The program schedule has been updated to reflect the results of the Milestone B decision, Source Selection and latest planned dates for milestones.

Technical:

Not applicable

*This exhibit reflects funding for BAMS that was budgeted for in PE 0305205N during the previous President's Budget.

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305220N, RQ-4 UAV			PROJECT NUMBER AND NAME 4020, BAMS UAS			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost				465.839				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

BAMS is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies.

The BAMS UAS air vehicle is based on Northrup Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base.

BAMS UAS will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, BAMS UAS will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB).

The BAMS UAS is an evolutionary based acquisition, using an incremental development approach. Two Mission Need Statements (MNSs) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability MNS. The BAMS UAS Capability Development Document (CDD) was approved May 2007 by the Joint Requirements Oversight Council (JROC).

Note: Prior to FY10, BAMS was budgeted for in PE 0305205N.

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305220N, RQ-4 UAV	PROJECT NUMBER AND NAME 4020, BAMS UAS												
B. Accomplishments/Planned Program														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">PRODUCT DEVELOPMENT</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td></td> <td style="text-align: right;">441.820</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>			PRODUCT DEVELOPMENT	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost			441.820	RDT&E Articles Quantity			
PRODUCT DEVELOPMENT	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost			441.820											
RDT&E Articles Quantity														
Continue EMD in FY10, including Government engineering support related to EMD. Initiate two test articles in FY09. The Prime Contractor will be responsible for overall system development and performance, as well as associated management, engineering and logistics activities.														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">ILS, SUPPORT, STUDIES & ANALYSES</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td></td> <td style="text-align: right;">11.928</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>			ILS, SUPPORT, STUDIES & ANALYSES	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost			11.928	RDT&E Articles Quantity			
ILS, SUPPORT, STUDIES & ANALYSES	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost			11.928											
RDT&E Articles Quantity														
Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">PROGRAM MANAGEMENT</td> <td style="width: 15%;">FY 08</td> <td style="width: 15%;">FY 09</td> <td style="width: 15%;">FY 10</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td></td> <td style="text-align: right;">5.434</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>			PROGRAM MANAGEMENT	FY 08	FY 09	FY 10	Accomplishments/Effort/Subtotal Cost			5.434	RDT&E Articles Quantity			
PROGRAM MANAGEMENT	FY 08	FY 09	FY 10											
Accomplishments/Effort/Subtotal Cost			5.434											
RDT&E Articles Quantity														
Continue the following: Program Management Support and travel; development of milestone and acquisition-related documentation; budgeting and programming; capability refinement and open systems architecture development; resource justification; metric development and tracking; affordability assessments and cost analyses; risk reduction and risk management; system integration and interoperability planning; technology maturity reviews; program protection planning; corrosion prevention planning; anti-tamper provisioning planning; and Joint and International Cooperation efforts.														

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305220N, RQ-4 UAV	PROJECT NUMBER AND NAME 4020, BAMS UAS

B. Accomplishments/Planned Program (Cont.)

TEST & EVALUATION	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost			6.657
RDT&E Articles Quantity			

Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.

C. OTHER PROGRAM FUNDING SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
RDTE 0305205N BAMS UAS	83.115*	430.205	

*\$22.8M FY08 funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 VTUAV per ATR DOD Serial Number FY08-41-RPA.

D. ACQUISITION STRATEGY:

The BAMS UAS is an evolutionary-based acquisition, using an incremental development approach. During the pre-Milestone B phase, the program performed technical risk reduction through studies and demonstrations, Engineering and Manufacturing Development (EMD) contract preparation, and Milestone B documentation development activities. Milestone B occurred on 8 April 2008 and EMD award occurred on 22 April 2008. The EMD contract was based on a competitive selection process for a Prime Contractor.

The BAMS UAS program office is pursuing joint efficiency with the Air Force on the Global Hawk UAS. However, the integration of the BAMS UAS into the Maritime Patrol Reconnaissance Force (MPRF) and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.

R-1 SHOPPING LIST - Item No.

205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7			PROGRAM ELEMENT 0305220N, RQ-4 UAV			PROJECT NUMBER AND NAME 4020, BAMS UAS						
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	C/CPAF	Northrop Grumman, NY				407.672	10/09					
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	WX	VARIOUS				26.060	11/09					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees	C/CPAF	Northrop Grumman, NY				8.088	12/10					
Subtotal Product Development			0.000	0.000		441.820						
Remarks:												
Development Support	VARIOUS	VARIOUS				6.325	11/09					
Software Development												
Integrated Logistics Support	WX	VARIOUS				4.835	11/09					
Configuration Management												
Technical Data												
Studies & Analyses	VARIOUS	VARIOUS				0.768	11/09					
GFE												
Award Fees												
Subtotal Support			0.000	0.000		11.928						
Remarks:												

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7				PROGRAM ELEMENT 0305220N, RQ-4 UAV			PROJECT NUMBER AND NAME 4020, BAMS UAS					
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				6.657	11/09					
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		6.657						
Remarks:												
Contractor Engineering Support	C/CPFF	MITRE, McLean, VA				0.514	11/09					
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS				4.598	11/09					
Travel	TO	VARIOUS				0.322	11/09					
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		5.434						
Remarks:												
Total Cost			0.000	0.000		465.839						
Remarks:												

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE:													
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME									
RDT&E, N / BA-7												0305220N, RQ-4 UAV				4020, BAMS UAS									
Fiscal Year	2008				2009				2010																
	1	2	3	4	1	2	3	4	1	2	3	4													
Acquisition Milestones			MS B											Note: Prior to FY10, BAMS was budgeted for in PE 0305205N.											
Contracting Activities			EMD CA																						
System Engineering Activities						SRR		SFR		PDR															
Test & Evaluation Activities	Acronyms: FRP: Full Rate Production IOC: Initial Operational Capability EMD: Engineering & Manufacturing Development CA: Contract Award LRIP: Low Rate Initial Production SRR: System Requirements Review SFR: System Functional Review PDR: Preliminary Design Review																								
Production Deliveries	CDR: Critical Design Review FRR: Flight Readiness Review CT: Combined Testing DT: Developmental Testing OT: Operational Testing OTRR: Operational Test Readiness Review OPEVAL: Operational Evaluation																								

Note: Prior to FY10, BAMS was budgeted for in PE 0305205N.

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No.

205

Exhibit R-2, RDTEN Budget Item Justification

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305231N, MQ-8 UAV	
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010			
Total PE Cost			25.639			
2768 VTUAV			25.639			

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Prior to FY10, the MQ-8 Vertical Take-Off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) was budgeted for in PE 0305204N.

The MQ-8B (popular name "Fire Scout") VTUAV provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8B can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8B launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of an electro-optical/infrared/laser designator-laser range finder modular mission payload, and a maritime search RADAR. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8B will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.

B. PROGRAM CHANGE SUMMARY

Funding:	FY08	FY09	FY10	
Previous President's Budget:			0.000	
Current President's Budget:			25.639	
Total Adjustments	0.000	0.000	25.639	

Summary of Adjustments				
Congressional Rescissions				
Congressional Adjustments				
SBIR/STTR/FTT Assessments				
Program Adjustments			25.639	
Rate/Misc Adjustments				
Subtotal	0.000	0.000	25.639	

Schedule:
Not Applicable.

Technical:
Not Applicable

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305231N, MQ - 8 UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 2768, VTUAV																	
COST (\$ in Millions)			FY 2008	FY 2009	FY 2010																		
2768 VTUAV					25.639																		
RDT&E Articles Qty																							
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Prior to FY10, the MQ-8 Vertical Take-Off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) was budgeted for in PE 0305204N. The MQ-8B (popular name "Fire Scout") provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8 launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, and the incorporation of an electro-optical/infrared laser designator-laser range finder modular mission payload. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) system architectures and protocols. A MQ-8 system is comprised of air vehicles, electro-optical/infrared/laser designator-rangefinder payloads, Ground Control Stations (with TCS and TC DL integrated for interoperability), and a UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment. The MQ-8 system will support Surface Warfare, Mine Interdiction Warfare, and Anti-Submarine Warfare mission modules while operating onboard LCS, and system procurement is tied to mission modules supporting LCS, vice sea frames. The System Design will also be integrated on select surface combatants that are air capable and can host MQ-8 ancillary equipment. A limited number of land-based ground control stations supplement the system to support shore-based operations, such as predeployment or acceptance functional check flights. These land-based ground control stations will also support depot level maintenance/post-maintenance activities. A program to continue development of the VTUAV to meet the Littoral Combat Ship (LCS) mission requirements was initiated in FY04. Program funding in FY10 includes efforts required to integrate the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload, a mine detection sensor, under development by PMS-495. VTUAV development and testing activities will continue in FY10. Funding is also provided in FY10 for integration of a multi-mode radar sensor. BLOCK UPGRADE will be an SDD effort to develop interfaces and integrate a multi-mode RADAR. Additionally, BLOCK UPGRADE will add Net Centric Capabilities. The U.S. Army has selected the MQ-8B as their Class IV UAV for the Future Combat Systems (FCS). Coordination with the U.S. Army FCS Program is on-going to investigate the potential cost savings for both programs where system commonalities and common logistics support can be identified. The VTUAV program received Milestone C approval in May 2007, authorizing Low Rate Initial Production (LRIP). B. ACCOMPLISHMENTS / PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">SD&D-HARDWARE AND SYSTEM DEVELOPMENT</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>Accomplishments / Effort / Sub-total Cost</td> <td></td> <td></td> <td></td> <td>25.300</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> Continue incremental procurement and integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue to completion EMD of the VTUAV system. Continue combined developmental and operational testing. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Begin integration of a multi-mode radar sensor.									SD&D-HARDWARE AND SYSTEM DEVELOPMENT		FY 2008	FY 2009	FY 2010	Accomplishments / Effort / Sub-total Cost				25.300	RDT&E Articles Qty				
SD&D-HARDWARE AND SYSTEM DEVELOPMENT		FY 2008	FY 2009	FY 2010																			
Accomplishments / Effort / Sub-total Cost				25.300																			
RDT&E Articles Qty																							

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305231N, MQ - 8 UNMANNED AERIAL VEHICLES		PROJECT NUMBER AND NAME 2768, VTUAV

DEVELOPMENT TESTING		FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost				.137
RDT&E Articles Qty				

Complete developmental testing of the VTUAV system. Continue combined developmental and operational testing, TECHEVAL, and planning for OPEVAL.

ENGINEERING AND TECHNICAL SERVICES		FY 2008	FY 2009	FY 2010
Accomplishments / Effort / Sub-total Cost				.202
RDT&E Articles Qty				

Continue engineering management, program technical management, and management support for the VTUAV system. These include transportation of system assets, fleet introduction team and program office personnel travel, and contract support services. Continue to support system development, system integration and test, and TECHEVAL.

C. OTHER PROGRAM FUNDING SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
RDT&E 0305204N 2768 VTUAV*	62.752	9.614	
APN: 044300: 0305204N VTUAV	37.432	50.189	
APN: 044300: 0305231N VTUAV			77.616

* \$22.8M FY08 RDT&E funding was moved from PE 0305205N 4020 BAMS UAS to PE 0305204N 2768 VTUAV per ATR DOD Serial Number FY08-41-RPA.

D. ACQUISITION STRATEGY:

Continue the MQ-8 EMD program. Design and develop an improved system initiated in FY04 to support the Littoral Combat Ship Program. Achieved Milestone C in 3Q FY2007. FRP and IOC will follow completion of OPEVAL.

NOTE: Prior to FY10, VTUAV was budgeted for in PE 0305204N.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE:				May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME									
RDT&E,N / BA-7			0305231N, MQ - 8 UNMANNED AERIAL VEHICLES					2768, VTUAV									
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		C/CPFF	NORTHROP GRUMMAN , San Diego, CA					25.300	11/09								
SUBTOTAL PRODUCT DEVELOPMENT								25.300									

Remarks:

SUPPORT													
Integrated Logistics Sup	VARIOUS	VARIOUS											
SUBTOTAL SUPPORT													

Remarks:

TEST & EVALUATION													
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD											
Dev Test & Eval	VARIOUS	VARIOUS											
Oper Test & Eval	WX	NAWCAD, PATUXENT RIVER MD				.050	11/09						
Oper Test & Eval	WX	NAWCWD, CHINA LAKE CA				.087	11/09						
SUBTOTAL TEST & EVALUATION						.137							

Remarks:

MANAGEMENT													
Government Eng Sup	WX	NAWCAD, CHINA LAKE CA				.088	11/09						
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD				.084	11/09						
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD											
Travel	TO	NAVAIR, PATUXENT RIVER MD				.030	10/09						
SUBTOTAL MANAGEMENT						.202							

Remarks:

Total Cost						25.639							

Remarks: Prior to FY10 VTUAV was budgeted for in PE 0305204N.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N /BA-7					0305231N, MQ - 8 UNMANNED AERIAL VEHICLES					2768 VTUAV			
Fiscal Year	FY 2008				FY 2009				FY 2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones									FRP △				
									★ IOC				
VTUAV EMD													
COBRA Integration													
Radar Sensor Integration													
Studies and Analysis (Payload Integration, Obsolescence, Software Upgrade)									△				
Test & Evaluation									IT-D-1 △				
									COBRA & Radar T&E △				
Production Milestones													
LRIP MQ-8B Air Vehicles													
FRP MQ-8B Air Vehicles									FRP △				
Procurement Deliveries									△ LRIP II △ LRIP III △ LRIP IV				

Remarks: Prior to FY10, VTUAV was budgeted for in PE 0305204N.

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0305231N, MQ - 8 UNMANNED AERIAL VEHICLES			2768, VTUAV			
Schedule Profile	FY 2008	FY 2009	FY 2010				
Acquisition Milestones TCS/VTUAV IOC							
COBRA Integration			1Q-4Q				
Studies & Analysis			1Q-4Q				
Initial Operational Capability (IOC)			1Q				
Radar Sensor Integration			1Q-4Q				
Full Rate Production (FRP)			1Q				
VTUAV EMD (MQ-8B)							
Test & Evaluation Milestones							
IT-C-I							
IT-C-2A							
OT-C-I							
IT-D-1			4Q				
COBRA T&E			4Q				
Radar T&E			4Q				
LRIP II MQ-8B Air Vehicles contract award							
LRIP III MQ-8B Air Vehicles contract award							
FRP contract awards (I-IV)			1Q				
Delivery							
Air Vehicles -- FY07 LRIP I							
Air Vehicles -- FY07 LRIP II			2Q-4Q				
Air Vehicles -- FY08 LRIP III			4Q				
Air Vehicles -- FRP I							
Air Vehicles -- FRP II							
Air Vehicles -- FRP III							
Air Vehicles -- FRP IV							

Remarks: Prior to FY10, VTUAV was budgeted for in PE 0305204N.

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7 / Operational Systems Development	PROGRAM ELEMENT (PE) NAME AND NO. 0305232M RQ-11 UAV																																											
COST (\$ in Millions)	FY2008	FY2009	FY2010																																									
Total PE Cost	0.000	0.000	0.553																																									
C2272 Intelligence C2 Systems	0.000	0.000	0.553																																									
In FY2009 and prior, RQ-11 Unmanned Aerial Vehicle (UAV) was funded in PE 0206313M, C2273. A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination. TIER I - The TIER I program procures a capability for unmanned aircraft systems (UAS) to provide the company/detachment level with airborne reconnaissance to aid in detecting, identifying and engaging or avoiding enemy units. The UAS autonomously gathers and transmits imagery of the tactical situation in near-real time at a range of up to ten kilometers. The RQ-11 Raven B UAS was selected as the material solution for the SURSS Block 1 requirement. Raven B is a five pound, hand launched, reusable vehicle with a wing span of 55 inches. The air vehicle flies at an altitude of 300-500 feet above ground at a speed of approximately 35 knots. This system has a maximum duration of 90 minutes. RQ-11's interchangeable payloads autopilot and propulsion system are also commercial-off-the shelf (COTS) subsystems. The Ground Control Station (GCS) uses a rugged hand controller connected to a communication control box. A Tier I Block 1 system consists of three RQ-11 air vehicles; one GCS; one Reconnaissance, Surveillance, and Target Acquisition (RSTA) Kit; one Field Repair Kit (FRK); one Initial Spares Package (ISP). B. PROGRAM CHANGE SUMMARY <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></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>Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2009 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>FY 2010 President's Budget:</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0.553</td> </tr> <tr> <td>Total Adjustments:</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.553</td> </tr> <tr> <td>Summary of Adjustments:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>a. Program Adjustments:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.561</td> </tr> <tr> <td>b. Rate/Misc. Adjustments:</td> <td></td> <td></td> <td style="text-align: right;">-0.008</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0</td> <td style="text-align: right; border-top: 1px solid black;">0</td> <td style="text-align: right; border-top: 1px solid black;">0.553</td> </tr> </tbody> </table> C. OTHER PROGRAM FUNDING SUMMARY Not Applicable D. ACQUISITION STRATEGY System is currently fielded.										FY 2008	FY 2009	FY 2010	Funding:				FY 2009 President's Budget:	0.000	0.000	0.000	FY 2010 President's Budget:	0	0	0.553	Total Adjustments:	0.000	0.000	0.553	Summary of Adjustments:				a. Program Adjustments:	0.000	0.000	0.561	b. Rate/Misc. Adjustments:			-0.008	Subtotal	0	0	0.553
	FY 2008	FY 2009	FY 2010																																									
Funding:																																												
FY 2009 President's Budget:	0.000	0.000	0.000																																									
FY 2010 President's Budget:	0	0	0.553																																									
Total Adjustments:	0.000	0.000	0.553																																									
Summary of Adjustments:																																												
a. Program Adjustments:	0.000	0.000	0.561																																									
b. Rate/Misc. Adjustments:			-0.008																																									
Subtotal	0	0	0.553																																									

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305233N, RQ-7 UAV			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost			0.986					
9C84, MCTUAS			0.986					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Marine Corps Tactical Unmanned Aircraft System (MCTUAS) is a FY 2010 new start program supporting the fielded RQ-7 system by conducting research, development, test, and evaluation for improvement of the RQ-7 capabilities in Reconnaissance, Surveillance and Target Acquisition, Intelligence, Battle Damage Assessment and Force Protection. The RQ-7 provides critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. RQ-7B MCTUAS systems are acquired through the Army's UAS Program Office to fulfill Marine Corps UAS requirements. In order to optimize Marine Corps and Army's interoperability, maintenance, and capability with minimal cost, the two services plan to develop additional capability for the common system. These funds will provide the Marine Corps share of the combined development cost.								

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0305233N, RQ-7 UAV																																																
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: center; width: 15%;">FY08</th> <th style="text-align: center; width: 15%;">FY09</th> <th style="text-align: center; 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></td> <td></td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current President's Budget:</td> <td></td> <td></td> <td style="text-align: right;">0.986</td> </tr> <tr> <td>Total Adjustments</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">0.986</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></td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">0.986</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Subtotal</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">0.986</td> </tr> </tbody> </table> Schedule: The Marine Corps Tactical Unmanned Aircraft System (MCTUAS) is a FY 2010 new start program supporting the fielded RQ-7 system by conducting research, development, test, and evaluation for improvement of the RQ-7 capabilities in Reconnaissance, Surveillance and Target Acquisition, Intelligence, Battle Damage Assessment and Force Protection. Technical: Not Applicable				FY08	FY09	FY10	Funding:				Previous President's Budget:			0.000	Current President's Budget:			0.986	Total Adjustments			0.986	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments				SBIR/STTR/FTT Assessments				Program Adjustments			0.986	Rate/Misc Adjustments				Subtotal			0.986
	FY08	FY09	FY10																																															
Funding:																																																		
Previous President's Budget:			0.000																																															
Current President's Budget:			0.986																																															
Total Adjustments			0.986																																															
Summary of Adjustments																																																		
Congressional Rescissions																																																		
Congressional Adjustments																																																		
SBIR/STTR/FTT Assessments																																																		
Program Adjustments			0.986																																															
Rate/Misc Adjustments																																																		
Subtotal			0.986																																															

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305233N, RQ-7 UAV			PROJECT NUMBER AND NAME 9C84, MCTUAS			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost			0.986					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Marine Corps Tactical Unmanned Aircraft System (MCTUAS) is a FY 2010 new start program supporting the fielded RQ-7 system by conducting research, development, test, and evaluation for improvement of the RQ-7 capabilities in Reconnaissance, Surveillance and Target Acquisition, Intelligence, Battle Damage Assessment and Force Protection. The RQ-7 provides critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level.

RQ-7B MCTUAS systems are acquired through the Army's UAS Program Office to fulfill Marine Corps UAS requirements. In order to optimize Marine Corps and Army's interoperability, maintenance, and capability with minimal cost, the two services plan to develop additional capability for the common system. These funds will provide the Marine Corps share of the combined development cost.

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0305233N, RQ-7 UAV	PROJECT NUMBER AND NAME 9C84, MCTUAS		
B. Accomplishments/Planned Program				
MCTUAS Development Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			0.986	
RDT&E Articles Quantity				
Joint development efforts with US Army Shadow Program and associated government engineering support. Block upgrades are required for continued improvement and interoperability. The MCTUAS program will benefit and share in cost with the following upgrades: Common Systems Integration is required to ensure interoperability with other weapon systems, manned and unmanned. Included in this category is Universal Ground Control Station (UGCS), Trainer upgrades and One System Remote Video Transceiver (OSRVT) and Advance Payloads. Small Sense and Avoid System (SSAASy) is required to meet the requirement for a traffic alert and collision avoidance system and to allow for operations in the National Airspace (NAS). Rolling Take Off and Launch and Land Heavier Air Vehicle (LALHAV) is required to improve reliability and provides redundant take off capability for the system.				

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

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-7	0305233N, RQ-7 UAV	9C84, MCTUAS		
C. OTHER PROGRAM FUNDING SUMMARY:				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
WPN: BLI 422700 - MCTUAS	151.667	86.408		
APN: BLI 044100			56.797	
D. ACQUISITION STRATEGY:				
Not Applicable.				

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT 0305233N, RQ-7 UAV			PROJECT NUMBER AND NAME 9C84, MCTUAS							
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	WX	NAWCAD Pax River, MD				0.100	12/09						
Program Management Support													
Travel													
Transportation													
SBIR Assessment													
Subtotal Management			0.000	0.000		0.100							
Remarks:													
Total Cost			0.000	0.000		0.986							
Remarks:													

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0305233N, RQ-7 UAV				PROJECT NUMBER AND NAME 9C84, MCTUAS				
Fiscal Year	2008				2009				2010							
	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																
Test & Evaluation Milestones																
Joint Development Efforts																

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

Exhibit R-4a, Schedule Detail

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: May 2009																																							
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.																																									
RDT&E, N / BA 7 / Operational Systems Development		0305234M Small (Level 0) Tactical UAS (STUASL0)																																									
COST (\$ in Millions)	FY2008	FY2009	FY2010																																								
Total PE Cost	0.000	0.000	18.763																																								
C2272 Intelligence C2 Systems	0.000	0.000	18.763																																								
In FY2009 and prior, funded in PE 0206313M, C2273. A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination. TIER II - This is a combined Navy (PE#0305234N) and Marine Corps (PE 0305234M) budget submission. The Tier II/UAS is a new start program that will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. B. PROGRAM CHANGE SUMMARY <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY 2008</u></th> <th style="text-align: right;"><u>FY 2009</u></th> <th style="text-align: right;"><u>FY 2010</u></th> </tr> </thead> <tbody> <tr> <td>Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2009 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>FY 2010 President's Budget:</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">18.763</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;">18.763</td> </tr> <tr> <td>Summary of Adjustments:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>a. Program Adjustments:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">19.035</td> </tr> <tr> <td>b. Rate/Misc. Adjustments:</td> <td></td> <td></td> <td style="text-align: right;">-0.272</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">18.763</td> </tr> </tbody> </table>									<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Funding:				FY 2009 President's Budget:	0.000	0.000	0.000	FY 2010 President's Budget:	0	0	18.763	Total Adjustments:	0.000	0.000	18.763	Summary of Adjustments:				a. Program Adjustments:	0.000	0.000	19.035	b. Rate/Misc. Adjustments:			-0.272	Subtotal	0	0	18.763
	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>																																								
Funding:																																											
FY 2009 President's Budget:	0.000	0.000	0.000																																								
FY 2010 President's Budget:	0	0	18.763																																								
Total Adjustments:	0.000	0.000	18.763																																								
Summary of Adjustments:																																											
a. Program Adjustments:	0.000	0.000	19.035																																								
b. Rate/Misc. Adjustments:			-0.272																																								
Subtotal	0	0	18.763																																								

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-7 Operational Sys Dev		0305234M Small (Level 0) Tactical UAS (STUASL0)			C2272 Intelligence C2 Systems			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		0.000	0.000	18.763				
RDT&E Articles Qty								
In FY2009 and prior, funded in PE 0206313M, C2273. A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination. TIER II - This is a combined Navy (PE#0305234N) and Marine Corps (PEs#0305234M) budget submission. The Tier II/UAS is a new start program that will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver.								

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0305234M Small (Level 0) Tactical UAS (STUASL0)	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.728	
TIER II UAS: Integration of UAS ground control station with Marine Corps C4I network.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.640	
TIER II UAS: MCCDC Support				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.220	
TIER II UAS: Operational Testing (OT)				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	9.477	
TIER II UAS: Development, testing and evaluation of Tier II UAS and payloads.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	4.780	
TIER II UAS: Navy Program Management Support.				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.918	
TIER II UAS: Program Management Support.				
(U) Total \$	0.000	0.000	18.763	
C. OTHER PROGRAM FUNDING SUMMARY				
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	
PMC BLI 475700 TIER II	0.000	0.000	13.823	
RDT&E,N, PE 0206313M, C2273, TIER II UAS	5.431	13.529	0.000	
D. ACQUISITION STRATEGY				
The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements.				

Classification: UNCLASSIFIED

Exhibit R-3 Cost Analysis				DATE: May 2009										
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0305234M Small (Level 0) Tactical UAS (STUASL0)					C2272 Intelligence C2 Systems						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
TIER II	WR	MCTSSA, San Diego, CA	0.338					0.184	01/10					
TIER II	TBD	TBD	2.826					2.546	01/10					
Subtotal Product Development			3.164	0.000		0.000		2.730						
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
TIER II	C/FP	Eagan Mcallister, Lexington	1.250					0.640	01/10					
Subtotal Support			1.250	0.000		0.000		0.640						
Remarks:														

Classification: UNCLASSIFIED

Exhibit R-3 Cost Analysis				DATE: May 2009										
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0305234M Small (Level 0) Tactical UAS (STUASL0)					C2272 Intelligence C2 Systems						
(Tailor to WBS, or Sys/Item Requirements)	Method & Type	Activity & Location	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TIER II	WR	MCOTEA												
TIER II	TBD	TBD	2.309				9.477	12/09						
Subtotal T&E			2.309				9.477							
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
TIER II	IDIQ	QNA, Stafford, VA	1.802					0.916	12/09					
TIER II	WR	MCSC, Quantico, VA	0.060											
TIER II	TBD	Navy PMA-263	10.262					4.780	01/10					
Subtotal Management			12.124	0.000		0.000		5.696						
Remarks:														
Total Cost			18.847	0.000		0.000		9.066						

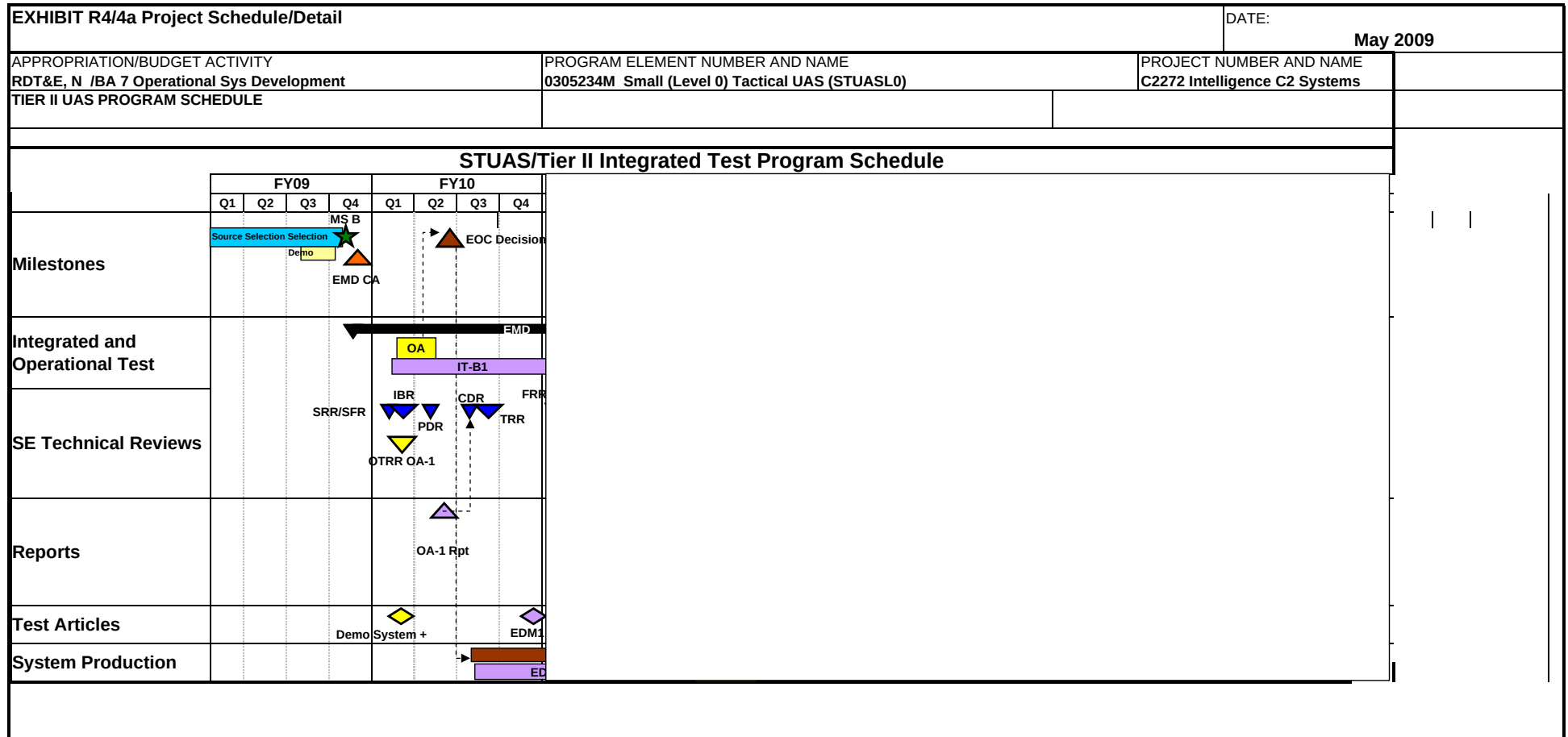


EXHIBIT R4/4a Project Schedule/Detail							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Development			0305234M Small (Level 0) Tactical UAS (STUASL0)				C2272 Intelligence C2 Systems	
TIER II UAS Schedule Profile								
			FY 2008	FY 2009	FY 2010			
MS B				4Q				
Solicitation				2Q				
Contract Award				4Q				
Demo System					1Q			
Test Assets					4Q			
Testing					2Q-4Q			
Milestone B Docs				3Q-4Q				
Milestone C Docs					3Q-4Q			

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	OCO FY2010	Total FY2010			
Total PE Cost			23.594	6.000	29.594			
2787, STUAS Lite			5.000	0.000	5.000			
3192, STUAS			18.594	6.000	24.594			

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Small Tactical Unmanned Aircraft System (STUAS) provides Persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy land forces. This system will fill the ISR capability shortfalls currently filled by services contracts. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval Units operating from sea/shore in Overseas Contingency Operations (OCO).

A system consists of four air vehicles, ground control station(s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

The STUAS system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy C2 integration, SIGINT and SAR payloads and weapons integration.

STUAS Project was previously reported under PE 0305204N for FY08-09.

STUAS LITE is a new start program in FY10 aimed at rapidly integrating a COTS system onto Navy Cruiser/Destroyer (CRUDES) ships to fill the current identified gap in ISR services available to Fleet forces. STUAS Lite has a similar mission description but is intended to fill the capability gap for CRUDES ships (multi-ship classes) with a COTS solution.

FY2010 OCO funding is for STUAS efforts for Overseas Contingency Operation Requirements.

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)																																																				
B. PROGRAM CHANGE SUMMARY: <table style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 40%;"></th><th style="width: 10%; text-align: center;">FY08</th><th style="width: 10%; text-align: center;">FY09</th><th style="width: 40%; text-align: center;">FY10</th></tr></thead><tbody><tr><td>Funding:</td><td></td><td></td><td></td></tr><tr><td>Previous President's Budget:</td><td></td><td></td><td style="text-align: right;">0.000</td></tr><tr><td>Current President's Budget:</td><td></td><td></td><td style="text-align: right;">29.594</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; border-top: 1px solid black;">29.594</td></tr><tr><td colspan="4" style="padding-top: 20px;">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></td><td></td></tr><tr><td> SBIR/STTR/FTT Assessments</td><td></td><td></td><td></td></tr><tr><td> Program Adjustments</td><td></td><td></td><td style="text-align: right;">23.594</td></tr><tr><td> Rate/Misc Adjustments</td><td></td><td></td><td></td></tr><tr><td> OCO</td><td></td><td></td><td style="text-align: right;">6.000</td></tr><tr><td> Subtotal</td><td style="text-align: right;">0.000</td><td style="text-align: right;">0.000</td><td style="text-align: right; border-top: 1px solid black;">29.594</td></tr></tbody></table> Schedule: STUAS funding moved from PE 0305204N in FY08-09 to PE 0305234N in FY10 . FY10 efforts will focus on Engineering and Manufacturing Development with one demo system, testing and technical reviews leading to an EOC decision at the end of 2nd quarter. Technical: N/A				FY08	FY09	FY10	Funding:				Previous President's Budget:			0.000	Current President's Budget:			29.594	Total Adjustments	0.000	0.000	29.594	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments				SBIR/STTR/FTT Assessments				Program Adjustments			23.594	Rate/Misc Adjustments				OCO			6.000	Subtotal	0.000	0.000	29.594
	FY08	FY09	FY10																																																			
Funding:																																																						
Previous President's Budget:			0.000																																																			
Current President's Budget:			29.594																																																			
Total Adjustments	0.000	0.000	29.594																																																			
Summary of Adjustments																																																						
Congressional Rescissions																																																						
Congressional Adjustments																																																						
SBIR/STTR/FTT Assessments																																																						
Program Adjustments			23.594																																																			
Rate/Misc Adjustments																																																						
OCO			6.000																																																			
Subtotal	0.000	0.000	29.594																																																			

R-1 SHOPPING LIST - Item No. 210

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)			PROJECT NUMBER AND NAME 2787, STUAS Lite			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost			5.000					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Small Tactical Unmanned Aircraft System - Lite (STUAS-Lite) provides Persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical-level maneuver decisions and unit level force defense/force protection for CRUDES ships (multi-ship classes) and Navy expeditionary forces. This system will fill the ISR capability shortfalls currently filled by the ISR services contracts. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval Units operating from sea/shore in the global war on terror.

A system consists of four air vehicles, ground control station(s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

The STUAS-Lite system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy C2 integration, SIGINT and SAR payloads and weapons integration.

STUAS LITE is a new start program in FY10 aimed at rapidly integrating a COTS system onto Navy CRUDES ships to fill the current identified gap in ISR services available to Fleet forces.

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASLO)	PROJECT NUMBER AND NAME 2787, STUAS Lite																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%; padding: 2px;">Engineering and Technical Services</td><td style="width: 15%; padding: 2px; text-align: center;">FY 08</td><td style="width: 15%; padding: 2px; text-align: center;">FY 09</td><td style="width: 15%; padding: 2px; text-align: center;">FY 10</td><td style="width: 25%;"></td></tr><tr><td style="padding: 2px;">Accomplishments/Effort/Subtotal Cost</td><td></td><td></td><td style="text-align: center;">5.000</td><td></td></tr><tr><td style="padding: 2px;">RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Engineering and Technical Services	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost			5.000		RDT&E Articles Quantity				
Engineering and Technical Services	FY 08	FY 09	FY 10																
Accomplishments/Effort/Subtotal Cost			5.000																
RDT&E Articles Quantity																			
Award contract to initiate the STUAS-lite, Group-2 UAS program. The Prime System Contractor will be responsible for overall system integration and performance as well as systems engineering, interim integrated logistics support, and associated management activities. Funding to coordinate Government Engineering Technical Support, Logistics Support, test and evaluation, Contractor Support Services, Program Management Support and program related travel.																			

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASLO)		PROJECT NUMBER AND NAME 2787, STUAS Lite								
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 colspan="4">Not Applicable</td></tr></tbody></table> D. ACQUISITION STRATEGY: STUAS-Lite acquisition strategy is in-process, but is expected to be based on Commercial Off-The-Shelf (COTS) systems that will enter into Milestone C. Increasing capability will be fielded in Follow-on-Builds. The base configuration and the initial upgrade are planned in FYDP. An open competition will be conducted for the fulfillment of the requirement.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
Not Applicable												

R-1 SHOPPING LIST - Item No. 210

CLASSIFICATION: UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305234N, SMALL (LEVEL 0) TACTICAL UAS (STU				2787, STUAS Lite						
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													
Ancillary Hardware Development													
Aircraft Integration													
Ship Integration	TBD	TBD				1.670	04/10						
Ship Suitability	TBD	TBD				0.200	03/10						
Systems Engineering	TBD	TBD				0.250	12/09						
Training Development	TBD	TBD				0.250	01/10						
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			0.000	0.000		2.370							
Remarks:													
Development Support													
Software Development	TBD	TBD				0.500	03/10						
Integrated Logistics Support	WX	Various				0.250	03/10						
Configuration Management	TBD	TBD				0.100	06/10						
Technical Data													
Studies & Analyses													
GFE													
Award Fees													
Subtotal Support			0.000	0.000		0.850							
Remarks:													

UNCLASSIFIED
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STU)			PROJECT NUMBER AND NAME 2787, STUAS Lite							
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	Various	Various				0.700	01/10						
Government Engineering Support	WX	Various				0.500	03/10						
Program Management Support	Various	Various				0.530	12/09						
Travel	TO	NAVAIR HQ Pax River, MD				0.050	12/09						
Transportation													
SBIR Assessment													
Subtotal Management			0.000	0.000		1.780							
Remarks:													
Total Cost			0.000	0.000		5.000							
Remarks:													

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

2787, STUAS

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE:
APPROPRIATION/BUDGET ACTIVITY													May 2009
RDT&E, N / BA-7													
PROGRAM ELEMENT NUMBER AND NAME													
0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)													
PROJECT NUMBER AND NAME													
2787, STUAS Lite													
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition													
Milestones													
Pre-MS Activities													
Milestone B													
Milestone C													
USMC IOC													
USN IOC													
FRP DR													
System Development & Demonstration													
SDD CA, SRR, CDR													
Production Milestones													
Production of Test Assets													
Test & Evaluation													
IT													
OTRR													
IOT&E													
IOT&E Report													
Production & Deployment													
LRIP CA													
FRP CA													

R-1 SHOPPING LIST - Item No. 210

CLASSIFICATION:

R-1 SHOPPING LIST - Item No. 210

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)				PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)		
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	OCO FY2010			
Project Cost			18.594	6.000			
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Small Tactical Unmanned Aircraft System (STUAS) provides Persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy land forces. This system will fill the ISR capability shortfalls currently filled by services contracts. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval Units operating from sea/shore in the global war on terror.

A system consists of four air vehicles, ground control station(s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

The STUAS system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy C2 integration, SIGINT and SAR payloads and weapons integration.

STUAS Project code moved to PE 0305234N from PE 0305204N in FY10.

FY2010 OCO funding is for STUAS efforts for Overseas Contingency Operation Requirements.

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUAS)	PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)																																
B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 30%;">SDD Development</td> <td style="width: 15%;">FY2008</td> <td style="width: 15%;">FY2009</td> <td style="width: 15%;">FY2010</td> <td style="width: 25%;">FY2010 OCO</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td></td> <td>16.303</td> <td>6.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> Award contract to initiate the System Development Demonstration (SDD) efforts for the STUAS/Tier II UAS program. The Prime System Contractor will be responsible for overall system development and performance as well as systems engineering, integrated logistics support, and associated management activities. Also to include Overseas Contingency Operation Requirements. <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 30%;">Engineering and Technical Services</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></td> <td>2.291</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> Government Engineering Technical Support, Logistics Support, test and evaluation, Contractor Support Services, Program Management Support and program related travel.					SDD Development	FY2008	FY2009	FY2010	FY2010 OCO	Accomplishments/Effort/Subtotal Cost			16.303	6.000	RDT&E Articles Quantity					Engineering and Technical Services	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost			2.291		RDT&E Articles Quantity				
SDD Development	FY2008	FY2009	FY2010	FY2010 OCO																														
Accomplishments/Effort/Subtotal Cost			16.303	6.000																														
RDT&E Articles Quantity																																		
Engineering and Technical Services	FY 08	FY 09	FY 10																															
Accomplishments/Effort/Subtotal Cost			2.291																															
RDT&E Articles Quantity																																		

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUAS)	PROJECT NUMBER AND NAME 3192, Small Tactical Unmanned Aircraft System (STUAS)
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,N: 0305204N, Proj: 3192 STUAS	6.105	22.464
RDT&E,N: 0206625M, Proj: C2272 Tier II UAS		9.412
D. ACQUISITION STRATEGY:		
The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements.		

R-1 SHOPPING LIST - Item No. 210

CLASSIFICATION: UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUAS)				3192, Small Tactical Unmanned Aircraft System (STUAS)						
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/CPIF	TBD				22.303	04/10						
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		22.303							
Remarks: STUAS Project code moved to PE 0305234N from PE 0305204N in FY10.													
Development Support													
Software Development													
Integrated Logistics Support	WX	Various				0.332	11/09						
Configuration Management													
Technical Data													
Studies & Analyses													
GFE													
Award Fees													
Subtotal Support			0.000	0.000		0.332							
Remarks: STUAS Project code moved to PE 0305234N from PE 0305204N in FY10.													

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUAS)			3192, Small Tactical Unmanned Aircraft System (STUAS)							
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	OPTEVFOR, Norfolk, Va				0.463	12/09						
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, Va				0.225	12/09						
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Subtotal T&E			0.000	0.000		0.688							
Remarks: STUAS Project code moved to PE 0305234N from PE 0305204N in FY10.													
Contractor Engineering Support	Various	Various				0.358	12/09						
Government Engineering Support	WX	Various				0.540	11/09						
Program Management Support	Various	Various				0.338	12/09						
Travel	TO	NAVAIR HQ Pax River, MD				0.035	10/09						
Transportation													
SBIR Assessment													
Subtotal Management			0.000	0.000		1.271							
Remarks: STUAS Project code moved to PE 0305234N from PE 0305204N in FY10.													
Total Cost			0.000	0.000		24.594							
Remarks:													

R-1 SHOPPING LIST - Item No. 210

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile													DATE:
													May 2009
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME	
RDT&E, N / BA-7								0305234N, SMALL (LEVEL 0) TACTICAL UAS (STUASL0)				3192, Small Tactical Unmanned Aircraft System (STUAS)	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
Pre-MS Activities													
Milestone B								☆ MS-B					
Milestone C													
USMC IOC													
USN IOC													
FRP DR													
System Development & Demonstration													
SDD CA, SRR, CDR								△ ▽			▽		
Production Milestones													
Production of Test Assets									△				◇
Test & Evaluation													
IT									△				
OTRR									▽				
IOT&E													
IOT&E Report													
Production & Deployment													
LRIP CA													
FRP CA													

R-1 SHOPPING LIST - Item No. 210

FY08 and 09 was funded in PE 305204N

CLASSIFICATION:

R-1 SHOPPING LIST - Item No. 210

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0307207N, AERIAL COMMON SENSOR			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	8.164	74.230						
3015 AERIAL COMMON SENSOR	6.564	74.230						
9999 Congressional Add	1.600							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Funding from FY 2010 on is shifted to new Program Element, PE 0307217 - EPX (EP-3 replacement).

Provides funding for the Navy's EPX (EP-3 replacement) program. EPX is the Navy's recapitalization of existing EP-3E capabilities and will be a transformational platform to fulfill Navy and OSD requirements for a manned multi-intelligence Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) capability. EPX RDT&E efforts will develop the system to meet the multi-intelligence ISR&T requirements, ensure connectivity to other service platforms and ground stations, and address an ISR capability gap presented by service life limits of the EP-3E.

The Joint Requirements Oversight Council (JROC) validated Navy service requirements in December 2007, and the Navy has established EPX as the program to accomplish their ISR&T re-capitalization in accordance with JROC validation.

The acquisition concept for EPX has been established, and system development activities are underway. FY08 Pre-MS A risk reduction efforts with industry participation include requirements analysis, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development, and threat analysis. Materiel Development Decision (MDD), Analysis of Alternatives (AoA), and award of study contract(s) are planned in FY09. AoA planned completion FY10.

Congressional Add -
Will provide Secure Data Sharing (ONI).

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0307207N, AERIAL COMMON SENSOR

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	8.164	74.604	102.562
Current President's Budget:	8.164	74.230	0.000
Total Adjustments	0.000	-0.374	-102.562

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments		-0.172	
SBIR/STTR/FTT Assessments			
Program Adjustments			-102.562
Rate/Misc Adjustments		-0.202	
Subtotal	0.000	-0.374	-102.562

Schedule:

MDD planned for 3rd quarter FY09 and award of study contract(s) planned for 4th quarter FY09. AoA will be conducted 3rd quarter FY09 through 1st quarter FY10.

Technical:

Starting in FY 2010, Aerial Common Sensor is budgeted for under PE 0307217, Project Unit 3015.

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0307207N, AERIAL COMMON SENSOR			PROJECT NUMBER AND NAME 3015 AERIAL COMMON SENSOR			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	6.564	74.230						
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funding for the Navy's EPX (EP-3 replacement) program. EPX is the Navy's recapitalization of existing EP-3E capabilities and will be a transformational platform to fulfill Navy and OSD requirements for a manned multi-intelligence Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) capability. EPX RDT&E efforts will develop the system to meet the multi-intelligence ISR&T requirements, ensure connectivity to other service platforms and ground stations, and address an ISR capability gap presented by service life limits of the EP-3E. The Joint Requirements Oversight Council (JROC) validated Navy service requirements in December 2007, and the Navy has established EPX as the program to accomplish their ISR&T recapitalization. In accordance with JROC validation, funding from FY 2010 on is shifted to new Program Element, PE 0307217 - EPX (EP-3 replacement). The acquisition concept for EPX has been established, and system development activities are underway. FY08 Pre-MS A risk reduction efforts with industry participation include requirements analysis, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development, and threat analysis. Materiel Development Decision (MDD), Analysis of Alternatives (AoA), and award of study contract(s) are planned in FY09. AoA planned completion FY10.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0307207N, AERIAL COMMON SENSOR	PROJECT NUMBER AND NAME 3015 AERIAL COMMON SENSOR		
B. Accomplishments/Planned Program				
EPX Trade Study and Tech Develop Activities	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.300	45.000		
RDT&E Articles Quantity				
FY 08 pre-MS risk reduction tasks include requirements analysis, Concept of Operations (CONOPS) development, trade study analysis, and system concept development. MDD planned for 3rd quarter FY09, study contract(s) planned for 4th quarter FY09, and AoA will be conducted 3rd quarter FY09 through 1st quarter FY10.				
Support EPX initial test and eval doc/plan	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		1.356		
RDT&E Articles Quantity				
Support initial test and evaluation planning and documentation.				
EPX govt/contr sys eng support; ISR study	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	5.264	27.874		
RDT&E Articles Quantity				
Fund Government and Contractor systems engineering and engineering support to accomplish technical activities in FY08 and FY09. Fund Government EPX program management in FY08 and FY09.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0307207N, AERIAL COMMON SENSOR	PROJECT NUMBER AND NAME 3015 AERIAL COMMON SENSOR									
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>Not Applicable</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The EPX acquisition strategy will utilize an evolutionary program approach to develop increments of capability to meet the Navy's ISR&T mission needs and address the ISR gap presented by the service life limits of the EP-3E. A competitive environment will be maintained through the TD phase, with a single contractor selected following MS B to develop the system solution. The Pre-MS A and TD phase focus will be to establish achievable performance requirements, reduce technical risk, and identify mature cost and schedule parameters for development, procurement, and life cycle support. The System Development and Demonstration phase will design and produce production representative systems for test and evaluation. Production and deployment will occur following successful operational evaluation of those production representative systems.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
Not Applicable												

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0307207N, AERIAL COMMON SENSOR			3015 AERIAL COMMON SENSOR							
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 Dev	C-CPAF	Various	19.590										
Primary Hdw Dev-Study Contract Aw	FFP	TBD		45.000	11/08								
Primary Hdw Dev - Trade Study	FFP	Various	5.250										
Systems Engineering	WX	SPAWARSYSCEN SD CA		0.444	11/08								
Systems Engineering	WX	NAWCAD, PAX RIVER, MD	0.870	6.413	11/08								
Training Development	WX	NAWCTSD, ORLANDO, FL	0.702	0.368	11/08								
Subtotal Product Development			26.412	52.225									
Development Support	WX	NAWCAD, PAX River, MD		1.406	11/08								
Development Support	WX	Various		1.815	11/08								
ENG & TECH SRVC (NON-FFRDC)	C-CPFF	Various		1.469	11/08								
Software Development	WX	NAWCAD, PAX River, MD		0.505	11/08								
Subtotal Support				5.195									

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)							DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0307207N, AERIAL COMMON SENSOR			PROJECT NUMBER AND NAME 3015 AERIAL COMMON SENSOR							
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	0.950	1.356	01/09								
Subtotal T&E			0.950	1.356									
ENG & TECH SRVC (NON-FFRDC)	C-CPFF	TBD	6.088	3.743	01/09								
ENG & TECH SRVC (NON-FFRDC)	C-CPFF	JHOPKINS, COLUMBIA, MD	5.000	0.954	11/08								
Government Engineering Support	WX	NAWCAD, PAX RIVER, MD	4.996	4.431	11/08								
Government Engineering Support	WX	VARIOUS	3.019	0.612	11/08								
Program Management Support	WX	NAWCAD, PAX RIVER, MD	2.652	5.609	11/08								
Travel	WX	NAWCAD, PAX RIVER, MD	0.293	0.105	11/08								
Subtotal Management			22.048	15.454									
Total Cost			49.410	74.230									
Remarks:													

UNCLASSIFIED

EXHIBIT R4, Schedule Profile													DATE: May 2009
39539													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7						PROGRAM ELEMENT NUMBER AND NAME 0307207N, AERIAL COMMON SENSOR						PROJECT NUMBER AND NAME 3015 AERIAL COMMON SENSOR	
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones							MDD △					MS A △	
Contract Milestones			▲	BAA Contract Award				△					
System Development							Study Contract Award						
Analysis of Alternatives							AoA						
Software 1XXSW Delivery 2XXSW Delivery													
Test & Evaluation Milestones													
Development Test													
Operational Test													
Production Milestones													
Production Deliveries													

UNCLASSIFIED

[illegible]

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0307207N, AERIAL COMMON SENSOR			PROJECT NUMBER AND NAME 9999 CONGRESSIONAL ADD			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	1.600							
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional add. B. Accomplishments/Planned Program:								
9999	FY 08	FY 09	FY 10					
Accomplishments/Effort/Subtotal Cost	1.600							
RDT&E Articles Quantity								
Provide Secure Data Sharing (ONI).								

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0307217N, EPX (EP-3 Replacement)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost			11.976					
3015 EPX (EP-3 Replacement)			11.976					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
Provides funding for the Navy's EPX (EP-3 replacement) program. EPX is the Navy's recapitalization of existing EP-3E capabilities and will be a transformational platform to fulfill Navy and OSD requirements for a manned multi-intelligence Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) capability. EPX RDT&E efforts will develop the system to meet the multi-intelligence ISR&T requirements, ensure connectivity to other service platforms and ground stations, and address an ISR capability gap presented by service life limits of the EP-3E.

The Joint Requirements Oversight Council (JROC) validated Navy service requirements in December 2007, and the Navy has established EPX as the program to accomplish their ISR&T re-capitalization.

The acquisition concept for EPX has been established, and system development activities are underway. FY08 Pre-MS A risk reduction efforts with industry participation included requirements analysis, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development, and threat analysis. Materiel Development Decision (MDD), Analysis of Alternatives (AoA), and award of study contract(s) are planned in FY09. AoA planned completion FY10. MS A is planned for FY10.

FY 08 and FY 09 funds budgeted under PE 0307207N Aerial Common Sensor (ACS).

EPX will utilize remaining ACS FY09 funds during FY10 transition.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009																																																
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		R-1 ITEM NOMENCLATURE 0307217N, EPX (EP-3 Replacement)																																																
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></td> <td></td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current President's Budget:</td> <td></td> <td></td> <td style="text-align: right;"><u>11.976</u></td> </tr> <tr> <td>Total Adjustments</td> <td></td> <td></td> <td style="text-align: right;">11.976</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></td> <td></td> </tr> <tr> <td> SBIR/STTR/FTT Assessments</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">11.976</td> </tr> <tr> <td> Rate/Misc Adjustments</td> <td></td> <td></td> <td style="text-align: right;"><u>11.976</u></td> </tr> <tr> <td> Subtotal</td> <td></td> <td></td> <td style="text-align: right;">11.976</td> </tr> </tbody> </table> Schedule: Material Development Decision (MDD) planned for 3rd quarter FY09 and study contract(s) planned for 4th quarter FY09. AoA planned completion 1st quarter FY10. MS A is planned for FY10. Technical: Not applicable.				FY08	FY09	FY10	Funding:				Previous President's Budget:			0.000	Current President's Budget:			<u>11.976</u>	Total Adjustments			11.976	Summary of Adjustments				Congressional Rescissions				Congressional Adjustments				SBIR/STTR/FTT Assessments				Program Adjustments			11.976	Rate/Misc Adjustments			<u>11.976</u>	Subtotal			11.976
	FY08	FY09	FY10																																															
Funding:																																																		
Previous President's Budget:			0.000																																															
Current President's Budget:			<u>11.976</u>																																															
Total Adjustments			11.976																																															
Summary of Adjustments																																																		
Congressional Rescissions																																																		
Congressional Adjustments																																																		
SBIR/STTR/FTT Assessments																																																		
Program Adjustments			11.976																																															
Rate/Misc Adjustments			<u>11.976</u>																																															
Subtotal			11.976																																															

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0307217N, EPX (EP-3 Replacement)			PROJECT NUMBER AND NAME 3015 EPX (EP-3 Replacement)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost			11.976					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funding for the Navy's EPX (EP-3 replacement) program. EPX is the Navy's recapitalization of existing EP-3E capabilities and will be a transformational platform to fulfill Navy and OSD requirements for a manned multi-intelligence Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) capability. EPX RDT&E efforts will develop the system to meet the multi-intelligence ISR&T requirements, ensure connectivity to other service platforms and ground stations, and address an ISR capability gap presented by service life limits of the EP-3E. The Joint Requirements Oversight Council (JROC) validated Navy service requirements in December 2007, and the Navy has established EPX as the program to accomplish their ISR&T re-capitalization. The acquisition concept for EPX has been established, and system development activities are underway. FY08 Pre-MS A risk reduction efforts with industry participation include requirements analysis, Concept of Operations (CONOPS) development, trade study analysis, specification development, system concept development, and threat analysis. Materiel Development Decision (MDD), Analysis of Alternatives(AoA), and award of study contract(s) are planned in FY09. AoA planned completion FY10. MS A is planned for FY10. FY 08 and FY 09 funds budgeted under PE 0307207N Aerial Common Sensor. EPX will utilize remaining ACS FY09 funds during FY10 transition.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0307217N, EPX (EP-3 Replacement)	PROJECT NUMBER AND NAME 3015 EPX (EP-3 Replacement)		
B. Accomplishments/Planned Program				
EPX Trade Study and Tech Develop Activities	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			6.000	
RDT&E Articles Quantity				
FY10 tasks include contractor(s) performing requirements allocations to system and subsystem levels, identification of program resource requirements, and prototype planning efforts of key system technologies. AoA planned completion 1st quarter FY10.				
Support EPX initial test and eval doc/plan	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				
Support initial test and evaluation planning and documentation.				
EPX govt/contr sys eng support; ISR study	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost			5.976	
RDT&E Articles Quantity				
Fund Government EPX program management in FY10.				

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0307217N, EPX (EP-3 Replacement)	PROJECT NUMBER AND NAME 3015 EPX (EP-3 Replacement)									
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>Not Applicable</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The EPX acquisition strategy will utilize an evolutionary program approach to develop increments of capability to meet the Navy's ISR&T mission needs and address the ISR gap presented by the service life limits of the EP-3E. A competitive environment will be maintained through the Technology Demonstration (TD) phase, with a single contractor selected following MS B to develop the system solution. The Pre-MS A and TD phase focus will be to establish achievable performance requirements, reduce technical risk, and identify mature cost and schedule parameters for development, procurement, and life cycle support. The System Development and Demonstration phase will design and produce production representative systems for test and evaluation. Production and deployment will occur following successful operational evaluation of those production representative systems.					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	Not Applicable			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
Not Applicable												

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0307217N, EPX (EP-3 Replacement)			PROJECT NUMBER AND NAME 3015 EPX (EP-3 Replacement)							
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 Dev	C-CPAF	Various											
Primary Hdw Dev-TD Award	FFP	TBD				5.596	11/09						
Primary Hdw Dev - Trade Study	FFP	Various											
Systems Engineering	WX	SPAWARSYSCEN SD CA				0.025	11/09						
Systems Engineering	WX	NAWCAD, PAX RIVER, MD				0.359	11/09						
Training Development	WX	NAWCTSD, ORLANDO, FL				0.020	11/09						
Subtotal Product Development						6.000							
Remarks: Prior year funds reflect FY 07 and FY 08 funds budgeted under PE 0307207N, Aerial Common Sensor.													
Development Support	WX	NAWCAD, PAX River, MD											
Development Support	WX	Various											
ENG & TECH SRVC (NON-FFRDC)	C-CPFF	Various											
Software Development	WX	NAWCAD, PAX River, MD											
Subtotal Support													

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0307217N, EPX (EP-3 Replacement)			PROJECT NUMBER AND NAME 3015 EPX (EP-3 Replacement)							
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											
Subtotal T&E													
ENG & TECH SRVC (NON_FFRDC)	C-CPFF	TBD				1.228	11/09						
ENG & TECH SRVC (NON_FFRDC)	C-CPFF	JHOPKINS, COLUMBIA, MD				0.418	11/09						
Government Engineering Support	WX	NAWCAD, PAX RIVER, MD				1.605	11/09						
Government Engineering Support	WX	VARIOUS				0.260	11/09						
Program Management Support	WX	NAWCAD, PAX RIVER, MD				2.420	11/09						
Travel	WX	NAWCAD, PAX RIVER, MD				0.045	11/09						
Subtotal Management						5.976							
Total Cost						11.976							
Remarks:													

EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME						May 2009
RDT&E, N / BA-7						0307217N, EPX (EP-3 Replacement)						
PROJECT NUMBER AND NAME						3015 EPX (EP-3 Replacement)						
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones							MDD ▲				MS A ▲	
Contract Milestones			▲	BAA Contract Award				▲				
System Development							Study Contract Award					
Analysis of Alternatives							AoA					
Software 1XXSW Delivery 2XXSW Delivery												
Test & Evaluation Milestones												
Development Test												
Operational Test												
Production Milestones												
Production Deliveries												

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

UNCLASSIFIED

[illegible]

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				0308601N/MODELING AND SIMULATION SUPPORT				
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	7.604	7.985	8.028					
2222/Modeling and Simulation	7.604	7.985	8.028					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Program Element addresses projects under the Navy Modeling and Simulation (M&S) Office. It supports technical and management initiatives directed by Congress, Department of Defense (DoD), Secretary of the Navy (SECNAV), and Chief of Naval Operations (CNO) with the aim of bringing organization and focus to the development and use of M&S throughout the Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S, and represents Navy interests in Joint and other agency initiatives. It funds efforts to define and coordinate the corporate Navy M&S policy and guidance to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Efforts are organized around four product areas: (1) Engineering Studies and Analysis: identifies and measures the relevance of existing and emerging standards, technologies and services necessary to guide Navy M&S use; (2) Products and Services: promotes the policy, standards and technologies necessary to guide more efficient development and use of M&S across the Navy, including development and management of the Navy Modeling and Simulation Information Service (NMSIS); (3) M&S Quality Assurance Program: establishes and manages a disciplined process of model Verification, Validation and Accreditation (VV&A); and (4) Simulation Experiments: supports M&S use in Navy exercises and experiments across a wide variety of warfighting and supporting communities. Specifically, Simulation Experiments integrate appropriate models and simulations into Fleet exercises to test, validate and evaluate for possible transition to operationally relevant M&S products in support of Navy operations, training, acquisition, analysis and assessment.

CLASSIFICATION:

EXHIBIT R-2 RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		R-1 ITEM NOMENCLATURE 0308601N/Modeling and Simulation

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 PresBud Submit	7.665	8.007	8.144
FY10 PresBud Submit	7.604	7.985	8.028
Total Adjustments	-0.061	-0.022	-0.116

Summary of Adjustments

SBIR	-0.061	0.000	0.000
Rate Adjustment	0.000	-0.022	-0.116
Subtotal	-0.061	-0.022	-0.116

PROGRAM CHANGE EXPLANATION:
 Technical: Not applicable
 Schedule: Not applicable

C. OTHER PROGRAM FUNDING SUMMARY:
 Not applicable

D. ACQUISITION STRATEGY:
 Not applicable

E. PERFORMANCE METRICS:

This program supports ongoing efforts to define, develop and utilize M&S technologies, standards and techniques in DoN and Joint programs across a wide range of disciplines and technical arenas. As such, performance metrics are specific to individual projects initiated under this program element. Representative examples of performance criteria for M&S support include the following: VV&A of deployed M&S systems to support Fleet and Force missions and assessments; degree of composability and adaptability of system architectures employed in M&S systems; ability of M&S systems to replicate and permit recreation of force or system interactions that otherwise would be performed by more labor-intensive or expensive personnel, forces or elements; degree to which M&S frameworks would permit rapid integration and employment of analytic capabilities for the analysis and documentation of warfighter missions, weapons systems or Tactics, Techniques and Procedures (TT&P); and ability of a specific M&S technology or technique to meet the requirements specified in an individual project supported by this program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0308601N Modeling and Simulation Suppo			PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010	OCO FY 2010	Total FY 2010			
2222/Modeling and Simulation	7.604	7.985	8.028		8.028			
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project addresses critical coordination of Navy M&S efforts, integrates individual programs into a coherent whole, promotes reuse of resources, and aligns Navy efforts with Joint programs. It develops and maintains a comprehensive repository of models, simulations and authoritative data to support broad-based Navy requirements. It promotes reusability through the Quality Assurance process for models, simulations and data, and enhances interoperability by coordinating and reviewing Navy's transition to DoD-mandated standards for distributed simulations. The project participates in Fleet exercise experiments, distributed simulations and demonstrations such as Limited Objective Experiments (LOE), Virtual at Sea Training (VAST), and Virtual Missile Range (VMR).								
B. ACCOMPLISHMENTS/PLANNED PROGRAM:								
	FY 2008	FY 2009	FY 2010					
ENGINEERING STUDIES AND ANALYSIS	3.718	3.814	3.825					
This activity conducts engineering studies and analyses aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S, and investigate Service-unique requirements for standards or guidance. Individual efforts focus on developing or evaluating approaches to optimize training, assessments and acquisition functional/mission objectives through more efficient development and use of M&S. This activity develops methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards will support the full range of architecture and engineering design and analysis requirements across the Navy. This activity also provides an M&S degree program through the Naval Postgraduate School, Modeling Virtual Environments and Simulation (MOVES) curriculum.								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0308601N MODELING AND SIMULATION SUPPORT	PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION
FY 2008 Plan: - Continued to segment the Embedded Simulation Infrastructure and two Mission Applications and continued to prepare and demonstrate documentation for test and release in Global Command and Control System (GCCS) and Global Command and Control System/Maritime (GCCS/M). - Continued to develop a set of models, architectures, and standards for communications M&S. - Continued to work with the MOVES Institute and the MOVES degree program to provide military relevant thesis topics for research. - Continued M&S support to Fleet Forces Command (FFC) for the CNO-directed Task Force Sim. - Continued M&S utilization in Campaign/Mission assessments to support OPNAV N70 analysis of warfighting requirements. FY 2009 Plans: - Continue all efforts of FY08. FY 2010 Plans: - Continue all efforts of FY09. FY 2011 Plans: - Continue all efforts of FY10.		

R-2a RD TEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0308601N MODELING AND SIMULATION SUPPORT	PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION																	
B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="width: 30%;"></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> <tr> <td>PRDDUCT AND SERVICES</td> <td style="text-align: center;">1.544</td> <td style="text-align: center;">1.672</td> <td style="text-align: center;">1.682</td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> This activity supports development of common services, tools, databases and standards to ensure the integration and connectivity of M&S products employed in Naval assessments, in training and acquisition, and among operational communities. It manages and maintains the Navy M&S Information System (NMSIS), as a central M&S information resource to support informed M&S investment decision making across Navy. It provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. It provides annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy. FY 2008 Plans: • Continued to promote and enhance state-of-practice and technology within the Navy M&S community. • Continued the development, servicing and use of NMSIS as directed under applicable DoD DIR, SECNAVINST, and OPNAVINST. • Continued to organize and facilitate quarterly Navy M&S Technical Interchange Meetings to bring together the Navy M&S community for a direct interchange of M&S requirements, technology, standards and experience. • Continued to foster and develop the Navy M&S Standards Process that draws M&S experts from the acquisition, training and operational communities, and from industry. • Continued development of a Navy Enterprise M&S Support Plan. FY 2009 Plans: • Continue all efforts of FY08. FY 2010 Plans: • Continue all efforts of FY09. FY 2011 Plans: • Continue all efforts of FY10.						FY 08	FY 09	FY 10		PRDDUCT AND SERVICES	1.544	1.672	1.682						
	FY 08	FY 09	FY 10																
PRDDUCT AND SERVICES	1.544	1.672	1.682																

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0308601N MODELING AND SIMULATION SUPPORT	PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 08	FY 09	FY 10	
M&S QUALITY ASSURANCE PROGRAM	0.529	0.541	0.553	

This activity implements and manages the Modeling and Simulation (M&S) Quality Assurance development of the VV&A process and guidelines for modeling, simulation, and data. It reviews both new and legacy M&S VV&A plans and reports, and develops and maintains the Naval M&S VV&A repository. It establishes and implements a VV&A training curriculum for developers and accreditors, and provides an annual VV&A assessment to CNO.

FY 2008 Plans:

- Continued to develop and update case studies within the VV&A Handbook.
- Continued to incorporate information developed for training/education into the VV&A Handbook.
- Continued to coordinate with the NMSIS effort to update and Beta test new VV&A data entry fields as required.

FY 2009 Plans:

- Continue all efforts of FY08.

FY 2010 Plans:

- Continue all efforts of FY09.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0308601N MODELING AND SIMULATION SUPPORT	PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION																	
B. ACCOMPLISHMENTS/PLANNED PROGRAM: <table border="1" style="margin: 10px auto; width: 80%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 15%; text-align: center;">FY 08</td> <td style="width: 15%; text-align: center;">FY 09</td> <td style="width: 15%; text-align: center;">FY 10</td> <td style="width: 25%;"></td> </tr> <tr> <td>SIMULATION EXPERIMENTS</td> <td style="text-align: center;">1.813</td> <td style="text-align: center;">1.958</td> <td style="text-align: center;">1.968</td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> This activity supports Fleet exercises and experiments through the application of distributed simulations across a wide variety of warfighting and supporting communities. Specifically, it develops and integrates appropriate M&S into Fleet Synthetic Training (FST), and develops simulation efforts to test and evolve the standards for models, interfaces, and data. It supports development of tools necessary to enable the seamless access and use of operationally relevant M&S products to support Navy training, warfare assessments and acquisition requirements. FY 2008 Plans: • Continued to define Fleet training initiatives and M&S enhancements. • Continued to support the Olympic Challenge series of Joint experimentations using a synergetic M&S approach. • Continued development of the Virtual at Sea Training (VAST) concept to provide the capability to conduct training in a virtual environment that would otherwise require a land-based training range or be cost or schedule prohibitive. • Continued to document elements of the maritime virtual environment and models that can be used effectively to enable reuse in naval simulations and to establish best practices where standards are not yet feasible. • Continued the upgrade of Virtual Missile Range (VMR) virtual threat capabilities. FY 2009 Plans: • Continue all efforts of FY08. FY 2010 Plans: • Continue all efforts of FY09.						FY 08	FY 09	FY 10		SIMULATION EXPERIMENTS	1.813	1.958	1.968						
	FY 08	FY 09	FY 10																
SIMULATION EXPERIMENTS	1.813	1.958	1.968																

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0308601N MODELING AND SIMULATION SUPPORT	PROJECT NUMBER AND NAME 2222/MODELING AND SIMULATION

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:
PE 0603235N (Common Picture Advanced Technology)

NON-NAVY RELATED RDT&E:
Not applicable.

D. ACQUISITION STRATEGY:
Not applicable.

E. MAJOR PERFORMERS:

Recipients	City/State	Description
SPAWARSYSCEN CHASN	Charleston, SC	Integrated Direct Support to Navy Modeling and Simulation Office and VV&A
SPAWARSYSCEN SAN DIEGO	San Diego, CA	Modeling and Simulation Standards Maintenance
NPS MOVES Institute	Monterey, CA	M&S Research and Functional Namespace Management

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0702207N Depot Maintenance (NON-IF)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	20.943	11.093	14.675					
3030 F/A-18 SLAP	17.873	7.154	13.688					
3182 T-45 SLAP	3.070	3.939	0.987					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

3030: The F/A-18A-F Service Life Assessment Program (SLAP) is assessing the structural condition of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations (CNO) inventory requirements. The goal of the SLAP program is to identify critical structures and components that can achieve the extended service life limit goals for all models. An increase in total landings and flight hours would allow the F/A-18E/F to meet CNO inventory requirements, to include planning for the announced one year Joint Strike Fighter slide. This effort is required to be conducted for these airframes to ascertain what actions and modifications must be taken to safely operate each system beyond its designed life until the targeted end of service life.

3182: The T-45 SLAP is assessing the structural condition of the T-45 Fleet in order to determine structural modifications necessary to extend the aircraft designed service life to support Pilot Training Requirements (PTR) and Naval Flight Officer Training Requirements (NTR) until 2021. The T-45 aircraft structure is currently fatigue limited to 14,400 flight hours based on initial full-scale fatigue tests conducted from 1992-1996. This service life limit prevents the T-45 fleet from meeting PTR/NTR requirements past 2016. Recent studies have determined that the fleet squadrons have not been flying the T 45 aircraft as aggressively as the initial fatigue studies predicted. These studies demonstrate that the 14,400 flight hour service life can likely be extended to 21,600 flight hours, which will support meeting PTR/NTR until 2021. A T-45 SLAP is required to assess the critical areas within the structure that require modifications to achieve a 21,600 flight hour service life. This assessment will be based on the updated fleet aircraft usage spectrum and future predicted training missions of the T-45 aircraft. The assessment will address critical structural areas that are either landing and/or flight hour limited. To maintain PTR/NTR beyond 2021, analysis and studies will be conducted to outline improvements, assess manufacturing capabilities and develop specifications for future trainer aircraft.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7	R-1 ITEM NOMENCLATURE 0702207N Depot Maintenance (NON-IF)	

B. PROGRAM CHANGE SUMMARY:

Funding:	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
FY2009 President's Budget:	18.988	21.130	9.577
Current President's Budget:	20.943	11.093	14.675
Total Adjustments	1.955	-10.037	5.098

Summary of Adjustments			
Congressional Reductions			
Congressional Adjustments		-10.007	
SBIR/STTR/FTT Assessments	-0.145		
Program Adjustments	2.100		5.120
Rate/Misc Adjustments		-0.030	-0.022
Subtotal	1.955	-10.037	5.098

Schedule:

3030 F/A-18 SLAP schedule changes in FY08-FY10 are a result of the Phase A contract award for F/A-18 E/F SLAP moving from first quarter FY08 to third quarter FY08. Contract award was delayed due to extended Technical Evaluation review period for the proposed contract. The addition of SLAP Phase B and Phase C are due to additional Navy funding and efforts associated with service life extension of the F/A-18 E/F fleet.

3182 T-45 SLAP Phase I schedule shifted from 2nd Quarter to 3rd Quarter FY2008 due to substantiation of subcontractor costs. The delay will have a negligible effect on expenditures and allow the FY09 increment of funding to award in 2nd Quarter FY09 as planned.

Technical:

Not Applicable

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702207N Depot Maintenance (NON-IF)			PROJECT NUMBER AND NAME 3030 F/A-18 SLAP			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
3030 F/A-18 SLAP	17.873	7.154	13.688					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The F/A-18E/F Service Life Assessment Program (SLAP) is assessing the structural condition of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations (CNO) inventory requirements. The goal of the SLAP program is to identify critical structures and components that can achieve the extended service life limit goals for all models. An increase in total landings and flight hours would allow the F/A-18E/F to meet CNO inventory requirements, to include planning for the announced one year Joint Strike Fighter slide. This effort is required to be conducted for these airframes to ascertain what actions and modifications must be taken to safely operate each system beyond its designed life until the targeted end of service life.								

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 3030 F/A-18 SLAP																	
B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;">F/A-18E-F SLAP</th><th style="width: 15%;">FY 08</th><th style="width: 15%;">FY 09</th><th style="width: 15%;">FY10</th><th style="width: 25%;"></th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: right;">17.873</td><td style="text-align: right;">7.154</td><td style="text-align: right;">13.688</td><td></td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>					F/A-18E-F SLAP	FY 08	FY 09	FY10		Accomplishments/Effort/Subtotal Cost	17.873	7.154	13.688		RDT&E Articles Quantity				
F/A-18E-F SLAP	FY 08	FY 09	FY10																
Accomplishments/Effort/Subtotal Cost	17.873	7.154	13.688																
RDT&E Articles Quantity																			

Begin analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F flight hours from 6,000 to 9,000 hours.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702207N Depot Maintenance (NON-IF)		PROJECT NUMBER AND NAME 3030 F/A-18 SLAP								
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>APN-5 P-1#33 F/A-18 OSIP (11-99)</td> <td>86.371</td> <td>113.978</td> <td>118.100</td> </tr> </tbody> </table> D. ACQUISITION STRATEGY: The Service Life Assessment Program (SLAP) program employs sole source contracts with Boeing, the aircraft prime manufacturer. SLAP consists of structural analyses of the main landing gear, arresting hook and catapult back-up structures, vertical tails, wings and fuselage. The current life limits for the F/A-18 E/F are 6,000FH, 2,250 Cat/Traps and 15,750 total landings. The F/A-18 E/F SLAP program of record states the SLAP goals as 12,000FH, 3,500 Cat/Traps and 22,500 total landings. The primary objective of F/A-18 E/F SLAP is to determine if the stated SLAP goals are feasible. These analyses will provide for the development of aircraft modifications necessary to extend total aircraft landings, catapults /arrestments, and flight hours. The F/A-18 E/F SLAP Program is broken into three phases: Phase A , Phase B, and Phase C. Completion of F/A-18 E/F Phase A will select, but not provide, the fatigue lives for the "Hot-Spots." Phase B of the F/A-18 E/F will provide the fatigue lives for all "Hot-Spots." Phase C will provide a set of fatigue lives for "Hot-Spots" across the entire fuselage and wing. Engineering Change Proposals (ECPs) generated by the SLAP analyses will be incorporated into the Service Life Management Program (SLMP) under OSIP (11-99). The program will consist of exploitation of complete structural fatigue testing with the expectation of extending the current service life of the F/A-18E/F. Conducting F/A-18E/F SLAP to study the aircraft lifetime will provide a better estimate of aircraft service life and a follow on Service Life Extension Program (SLEP).					<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	APN-5 P-1#33 F/A-18 OSIP (11-99)	86.371	113.978	118.100
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>									
APN-5 P-1#33 F/A-18 OSIP (11-99)	86.371	113.978	118.100									

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0702207N Depot Maintenance (NON-IF)			PROJECT NUMBER AND NAME 3030 F/A-18 SLAP							
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						
Prod Development SLAP F/A-18A-D	SS/CPFF	Boeing-St. Louis, MO	28.775										
Prod Development SLAP F/A-18E/F	SS/CPFF	Boeing-St. Louis, MO	16.906	5.871	03/09	11.986	03/10						
Subtotal Product Development			45.681	5.871		11.986							
Remarks:													
Subtotal Support			0.000	0.000		0.000							
Remarks:													

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0702207N Depot Maintenance (NON-IF)			PROJECT NUMBER AND NAME 3030 F/A-18 SLAP					
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:											
Cont ETS SLAP-F/A-18E/F	TBD	NAWCAD, Pax River, MD	0.377	0.359	12/08	0.380	12/09				
Govt ETS SLAP-F/A-18E/F	WX	NAWCAD, Pax River, MD	0.436	0.458	12/08	0.461	12/09				
Govt ETS SLAP-F/A-18E/F	WX	FRC, North Island, CA	0.154	0.466	12/08	0.861	12/09				
Subtotal Management			0.967	1.283		1.702					
Remarks:											
Total Cost			46.648	7.154		13.688					

UNCLASSIFIED

EXHIBIT R4, Schedule Profile												DATE:
APPROPRIATION/BUDGET ACT PROGRAM ELEMENT NUMBER AND NAME												May 2009
RDT&E, N / BA-7												
0702207N Depot Maintenance (NON-IF)												
PROJECT NUMBER AND NAME												
3030 F/A-18 SLAP E/F												
Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Contract Award Phase A			★									
1.1 E/F SLAP Spectrum Development				←	←	←	←	←	△			
1.2 Flight/Ground Loads Development				←	←	←	←	←	△			
1.3 FT50/76/77/78/90 Failure Analysis				←	←	←	←	←	←	←	△	
1.4 Damage Tolerance/ Crack Growth Analysis & Testing							△	←	←	←	△	
1.5 Fleet Inspection Development									△	←	←	
1.6 ECP Development								△	←	←	←	
2.0 Phase B											△	←

UNCLASSIFIED

[illegible]

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702207N, DEPOT MAINTENANCE (NON-IF)			PROJECT NUMBER AND NAME 3182, T-45 SLAP			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
3182 T-45 SLAP	3.070	3.939	0.987					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The T-45 Service Life Assessment Program (SLAP) is assessing the structural condition of the T-45 fleet in order to determine structural modifications necessary to extend the aircraft designed service life to support Pilot Training Requirements (PTR) and Naval Flight Officer Training Requirements (NTR) until 2021. The T-45 aircraft structure is currently fatigue limited to 14,400 flight hours based on initial full-scale fatigue tests conducted from 1992-1996. This service life limit prevents the T-45 fleet from meeting PTR/NTR requirements past 2016. Recent studies have determined that the fleet squadrons have not been flying the T-45 aircraft as aggressively as the initial fatigue studies predicted. These studies demonstrate that the 14,400 flight hour service life can likely be extended to 21,600 flight hours, which will support meeting PTR/NTR until 2021. A T-45 Service Life Assessment Program (SLAP) is required to assess the critical areas within the structure that require modifications to achieve a 21,600 flight hour service life. This assessment will be based on the updated fleet aircraft usage spectrum and future predicted training missions of the T-45 aircraft. The assessment will address critical structural areas that are either landing and/or flight hour limited. Provide a description of the project and narrative justification. To maintain PTR/NTR beyond 2021, analysis and studies will be conducted to outline improvements, assess manufacturing capabilities and develop specifications for future trainer aircraft.								

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) No. and Name	PROJECT NUMBER AND NAME 3182, T-45 SLAP															
B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"><tr><td style="padding: 2px 5px;">Analysis of T-45 structural condition</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;">3.070</td><td style="padding: 2px 5px; text-align: center;">3.939</td><td style="padding: 2px 5px; text-align: center;">0.987</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> The T-45 Service Life Assessment Program will analyze structural critical areas requiring modification to increase service life from 14,400 flight hours to 21,600 flight hours, publishing results in three separate reports (Updated Finite Element Model report, SLAP Internal Loads Methodology report, and SLAP Fatigue Analysis report).			Analysis of T-45 structural condition	FY 08	FY 09	FY 10		Accomplishments/Effort/Subtotal Cost	3.070	3.939	0.987		RDT&E Articles Quantity				
Analysis of T-45 structural condition	FY 08	FY 09	FY 10														
Accomplishments/Effort/Subtotal Cost	3.070	3.939	0.987														
RDT&E Articles Quantity																	

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0702207N, DEPOT MAINTENANCE (NON-IF)	PROJECT NUMBER AND NAME 3182, T-45 SLAP
C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable D. ACQUISITION STRATEGY: The SLAP is a sole source contract with Boeing, the aircraft prime contractor. SLAP consists of structural analyses of landing gear, arresting hook and catapult back-up structure, vertical tail, wings and fuselage. These analyses will facilitate the development of aircraft modifications necessary to extend total aircraft service life from 14,400 to 21,600 flight hour.		

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /					R-1 ITEM NOMENCLATURE 0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM			
					BA-7			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	1.588	1.871	2.725					
3170 AVIONICS COMPONENT IMPROVEMENT PROGRAM	1.588	1.871	2.725					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Avionics Component Improvement Program (AvCIP) develops, integrates and tests solutions to address critical readiness and reliability deficiencies, obsolescence, loss of sustainability, and top repair cost drivers in Navy in service avionics systems. Project candidates are collected from across all platforms, reviewed, competed and selected in the year prior to funding allocation.								

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM	

B. PROGRAM CHANGE SUMMARY:

	FY08	FY09	FY10
Funding:			
FY09 President's Budget:	1.600	1.877	2.755
FY10 President's Budget:	1.588	1.871	2.725
Total Adjustments	-0.012	-0.006	-0.030

Summary of Adjustments

Congressional Rescissions			
Congressional Adjustments		-0.001	
SBIR/STTR/FTT Assessments	-0.012		
Program Adjustments			-0.029
Rate/Misc Adjustments		-0.005	-0.001
Subtotal	-0.012	-0.006	-0.030

Schedule:

Selection of two (2) projects in FY07:

Project Unit 07A. EA-6B TACAN Modification. Testing May 08. Qualification Sep 08.

Project Unit 07B. F/A-18E/F Radar Altimeter Shock Mount. Design Review Jun 08. Testing Aug 08. Qualification Sep 08.

Selection of three (3) projects in FY08:

Project Unit 08A. Naval Aircrew Common Ejection Seat (NACES) Sequencer. Contract award Jan 08. Design Review Mar 08. Testing Jun 08. Qualification and Field solution Sep 08.

Project Unit 08B. E-2 APS-145 Radar Radio Frequency Power Meter. Contract award Jan 08. Design Review Jun 08. Testing Oct 08. Qualification Dec 08.

Project Unit 08C. APN-171 Radar Altimeter Single Card Altimeter. Contract award Jul 08. Design Review Mar 09. Does not require Testing. APN-171 Radar Altimeter Single Card Altimeter was dropped due to lack of procurement follow-on. Standard Central Air Data Computer (SCADC) Testbench Redesign was chosen to take the place of the APN-171 Radar Altimeter. SCADC Government Testbench Redesign will begin 3Q FY08. Testing 2Q FY09 and Qualification 3Q FY09.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM			PROJECT NUMBER AND NAME 3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	1.588	1.871	2.725					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Avionics Component Improvement Program (AvCIP) provides design and development, test and evaluation, and integration support to resolve critical readiness and reliability deficiencies, obsolescence, loss of sustainability and top repair cost drivers of in-service Navy avionics systems. Funds are competitively allocated across multi-platform commodity and platform-specific projects with the objective of maintaining Avionics systems effectiveness at levels required to ensure mission success. AvCIP has been endorsed by the OSD Business Initiatives Council (BIC) as a cooperative tri-service program that adopts the better business practices and proven resourcing models of the Engine CIP. Resources are directed just prior to the execution year, allowing funds to address the most current fleet issues and accelerate solution fielding. Lack of out-year deliverable specificity is mitigated through definition of Avionics capability evolution in the Core Avionics Master Plan. Although Avionics association to digital technology brings challenges to keep pace with Moore's Law and stay ahead of obsolescence, it also affords significant opportunity to reap benefits of emerging advancements. Conversion of legacy systems from analog to digital components has consistently resulted in reliability gains that significantly reduce maintenance/repair activity/costs, save weight and space, and increase operational availability. Modern open system architecture technology insertion improves system upgradeability, by reducing integration time and cost. Avionics systems are the vehicles that enable platform connectivity and interoperability. AvCIP will help platforms integrate the modern technology that will allow them to keep pace with the rapid evolution of transformational network centric operations development. AvCIP also provides a vehicle to address unanticipated performance issues or critical changes in threat, tactics or operational demands revealed during deployment without disrupting program budget profiles designed for other purposes. AvCIP is designed to support manned and unmanned, common and unique, fixed and rotary wing aircraft electronics systems, including communications, navigation, surveillance, sensors, combat identification, civil interoperability, safety, mission data processing and display, and network connectivity equipment. Initiative selection is based upon analysis of operational priority, performance improvement, capability benefit, scope of applicability across fleet platform or weapon system inventory, technical risk, delivery time, cost and life cycle return on investment. In FY 2007, AVCIP transferred from Standards Development, PE 0604215N, Project Unit 0572.								

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM	PROJECT NUMBER AND NAME 3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)		
B. Accomplishments/Planned Program				
Addresses Avionics Critical Readiness	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.588	1.871	2.725	
RDT&E Articles Quantity				
Investigate High Value Return on Investment Candidates, addressing avionics critical readiness and reliability deficiencies, obsolescence, loss of sustainability and top repair cost drivers. Prioritize critical avionics performance, capability and obsolescence problems that require immediate attention. Pursue solutions to these problems based upon urgency, warfighting contribution and return on investment. Develop and test system solutions based on priority. Resources will cover program management, engineering, contracting and logistics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and developmental/operational testing.				

R-1 SHOPPING LIST - Item No. 215

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-7	0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM	3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)

C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
APN Line Item 057700, Common Avionics, AVCIP		2.000	2.000
0702239A, Avionics Component Improvement Program, Army			
0702239F, Avionics Component Improvement Program, Air Force			

D. ACQUISITION STRATEGY:

The Avionics Component Improvement Program (AvCIP) will annually compete candidate solutions according to criticality of operational contribution, technical risk, return on investment, and breadth of application. OPNAV N88 & N43, NAVAIR, NAVICP and the Fleet will participate in project selection for execution year allocation. The AvCIP IPT will monitor project execution and track return on investment using Fleet supply and component performance tracking systems (Snapshot, NALCOMIS, NALDA, LMDS/Deckplate, VAMOSC). Demonstrated Fleet operation/sustainment cost avoidances will be coordinated with N43 Flying Hour Program. Modification solutions include modular hardware, software and material upgrades. Resources will cover program management, engineering, contracting and logistics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and developmental/operational testing.

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

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-7			0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM			3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)						
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	1.427									
Ancillary Hardware Development	TBD	TBD				0.525	03/10					
Aircraft Integration	TBD	TBD	0.457			0.500	03/10					
Ship Integration												
Ship Suitability												
Systems Engineering	WX	NAWCAD, PAX RIVER MD				0.350	03/10					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.884	0.000		1.375						
Remarks:												
Development Support		TBD				0.300	03/10					
Software Development												
Integrated Logistics Support	WX	NAWCWD, PT MUGU, CA		0.111	11/08							
Integrated Logistics Support	WX	NAWCAD, PAX RIVER MD	0.132									
Configuration Management												
Technical Data												
Studies & Analyses	WX	NAWCAD, PAX RIVER MD		1.760	01/09	0.269	03/10					
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.132	1.871		0.569						
Remarks:												

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: May 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM			PROJECT NUMBER AND NAME 3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)							
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				0.230	11/09						
Operational Test & Evaluation													
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Subtotal T&E			0.000	0.000		0.230							
Remarks:													
Contractor Engineering Support	VARIOUS	VARIOUS	0.072										
Government Engineering Support	WX	NAWCAD Patuxent River MD	0.500			0.250	11/09						
Program Management Support	WX	NAWCAD, Patuxent River MD	0.208			0.301	11/09						
Travel													
Transportation													
SBIR Assessment													
Subtotal Management			0.780	0.000		0.551							
Remarks:													
Total Cost			2.796	1.871		2.725							
Remarks:													

R-1 SHOPPING LIST - Item No. 215

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE:															
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME															
RDT&E,N / BA-7									0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM								3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM															
Fiscal Year	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Management Milestones	FY09 AvCIP CYCLE				FY10 AvCIP CYCLE				FY11 AvCIP CYCLE																							
Funding Allocation	▲				▲				△																							
Candidate Collection	■				■				□																							
Candidate Evaluation		■				■				□																						
Candidate Prioritization & Selection			▲				△				△																					
Candidate Endorsement			■			□					□																					
Contract Establishment	■		■						□				□																			
Selected AvCIP Projects																																
07A EA-6B TACAN Modification	Design Review		Test	▲	Qual																											
07B F/A-18 Radar Altimeter Shock Mount	Design Review		Test	▲	Qual																											
08A NACES Sequencer	Design Review	▲	Test	▲	Qual & Field																											
08B E-2C APS-145 Pwr Mtr Radar Radio Frequency	Design Review	▲	Test	▲	Qual																											
08C SCADC Testbench Redesign			▲	Design Review	▲	Qual																										

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME		
RDT&E,N / BA-7			0702239N, AVIONICS COMPONENT IMPROVEMENT PROGRAM			3170, AVIONICS COMPONENT IMPROVEMENT PROGRAM		
Schedule Profile			FY 2008	FY 2009	FY 2010			
AvCIP Funding Allocation			1Q	1Q	1Q			
AvCIP Candidate Collector			1Q-2Q	1Q-2Q	1Q-2Q			
AvCIP Candidate Evaluation			2Q-3Q	2Q-3Q	2Q-3Q			
AvCIP Candidate Prioritization & Selection			3Q	3Q	3Q			
AvCIP Candidate Endorsement			3Q	3Q	3Q			
AvCIP Project Contract Establishment			3Q-4Q	3Q-4Q	3Q-4Q			
Selected Projects Schedule Profiles								
07A EA-6B TACAN Mod								
Contract Award (CA)								
Design/Test			3Q					
Qualification			4Q					
07B F/A-18 Radar Altimeter Mod								
Contract Award (CA)								
Design/Test			3Q					
Qualification			4Q					
08A NACES Sequencer Test Bench								
Contract Award (CA)			2Q					
Design/Test			2Q-3Q					
Qualification			4Q					
08B E-2C APS-145 Radar Power Meter Radar Radio Frequency								
Contract Award (CA)			2Q					
Design/Test			3Q-4Q	1Q				
Qualification				1Q				
08C SCADC Testbench Redesign								
SCADC G0V Testbench			3Q					
Design Review				2Q				
Qualification				3Q				

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
Total PE	56.862	61.693	56.691
1050 MANUFACTURING TECHNOLOGY			
	54.933	56.507	56.691
9999 CONGRESSIONAL PLUS-UPS			
	1.929	5.186	0.000

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Manufacturing Technology (ManTech) program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development and transition of leading edge manufacturing technologies. The ManTech program is executed through a Center of Excellence (COE) strategy. A majority of the COEs are consortium based with only a small group of technical and management personnel at the center. ManTech projects are primarily performed by industry participants that bill the COE which, in turn, bills the Navy which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks. The ManTech program, by providing seed funding for the development of moderate to high risk process and equipment technology, permits contractors to upgrade their manufacturing capabilities. Ultimately, the program aims to produce high-quality weapon systems with shorter lead times and reduced acquisition costs.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: May 2009

BUDGET ACTIVITY: 07
PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

B. PROGRAM CHANGE SUMMARY:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
President's Budget 2009	57.313	56.681	58.589
Congressional Program Reductions	0.000	-0.168	0.000
Program Adjustments	0.000	0.000	-1.917
Rate/Misc Adjustments	0.000	-0.020	0.019
SBIR/STTR Transfer	-0.451	0.000	0.000
Total Congressional Increases	0.000	5.200	0.000
President's Budget 2010	56.862	61.693	56.691

PROGRAM CHANGE SUMMARY EXPLANATION:

Technical: Not applicable.

Schedule: Not applicable.

C. OTHER PROGRAM FUNDING SUMMARY:

Not applicable.

D. ACQUISITION STRATEGY:

Efforts have been focused on the Integrated Systems Investment Strategy platforms: DDG 1000, CVN 21, Littoral Combat Ship (LCS), and the Virginia Class Submarine (VCS) as well as aircraft / other programs. Due to a change in strategy in FY 2007, FY 2008 and the outyears increasingly focus on affordability efforts for DDG-1000, CVN-21, LCS, and VCS with some concentration on improvements for non-ship systems.

E. PERFORMANCE METRICS:

The ManTech program's overall goal is to transition production technology to reduce the cost of Navy weapons systems. Metrics are currently collected on the cost savings per hull and for the class for each of the 4 primary shipbuilding platforms, DDG-1000, CVN-21, LCS and VCS.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

COST: (Dollars in Millions)

Project Number & Title	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate
1050 MANUFACTURING TECHNOLOGY	54.933	56.507	56.691

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ManTech Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. Major areas of endeavor both underway and planned include: advanced manufacturing technology for metalworking, joining, electronics and electro-optics, composites, shipbuilding, and above-the-factory-floor business operations technology. The ManTech Program is aimed at assisting acquisition programs in meeting performance and affordability goals by inserting manufacturing process solutions early into the design phase.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
COMPOSITES PROCESSING AND FABRICATION	6.000	6.000	6.000

The primary technical goal of the Composites Processing and Fabrication activity is improving weapon systems affordability, enhancing weapon system effectiveness and improving reliability / war-fighter readiness through the increased utilization of composite materials and structures. This is being achieved through the development and maturation of affordable, robust manufacturing and assembly processes that fully exploit the benefits of composite materials. Concentration in FY 2008 and the outyears is on composites processing for the following four platforms: DDG-1000, CVN-21, VCS, and LCS although ManTech will continue to develop composites manufacturing technology for high priority air platforms.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

FY 2008 Accomplishments:

- Continued Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of Composite Sail Cusp; and continuation of VCS Impeller.
- Continued other composites thrusts (formerly projects) to address improvements / affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices.
- Continued Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes continuation of DDG-1000 Helodeck Stiffeners Affordability; and continuation of DDG-1000 Radomes Affordability.
- Continued Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.
- Continued Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of Composite Frame Manufacturing Technology - V-22 and H-53; and completion of Titanium-Graphite for F/A-18 Engine Bay Doors.

FY 2009 Plans:

- Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes completion of Composite Sail Cusp and VCS Impeller and continuation / initiation of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction.
- Continue other composites thrusts (formerly projects) to address improvements / affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices.
- Continue Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative.
- Continue Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.
- Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes completion of Composite Frame Manufacturing Technology - V-22 and H-53 and continuation / initiation of efforts to develop / optimize composite materials fabrication technology for reduced cost Air Platform construction.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

FY 2010 Plans:

- Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction.
- Continue Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative.
- Continue Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.
- Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of efforts to develop / optimize composite materials fabrication technology for reduced cost Air Platform construction.
- Complete other composites thrusts (formerly projects) to address improvements / affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices.

	FY 2008	FY 2009	FY 2010
CORPORATE INVESTMENTS	10.706	12.167	12.481

The Corporate Investments activity is focused on accelerating defense industrial enterprise progress toward implementation of world-class industrial practices as well as advanced design and information systems that support weapon system development, production, and sustainment. Key emphasis areas include: 1) Benchmarking and accelerating the implementation of world-class industrial practices throughout the contractor base; 2) Demonstrating and validating advanced business practices and information technologies capable of streamlining management functions in all industrial base tiers; and 3) Leveraging information technologies in pursuit of tighter coupling of all defense industrial enterprise elements. Corporate Investment efforts create improvements to cost and cycle time for weapon system development, production, and repair. Additionally, Corporate Investments include the funding of recently identified near-term high priority shipbuilding affordability efforts for the four major platforms - DDG-1000, CVN-21, VCS, and LCS.

The funding increase from FY 2008 to FY 2009 supports the new Shipbuilding Affordability Strategy requirement.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

FY 2008 Accomplishments:

- Continued Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21. Includes Light Activated Semiconductor Switches, HSLA-115 Evaluation and Implementation Support, and Digital Radiography Support.
- Continued Near-Term High Priority Shipbuilding Affordability Thrust for LCS.
- Continued efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes / technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others.
- Completed Best Manufacturing Practices efforts in surveys, the Program Manager's Workstation, and Collaborative Work Environment.
- Initiated Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000. Includes Pallet Manufacturing Process Modeling, Power Electronic Module Cost Out effort, and SiGe-based System-on-Chip Low Cost / Weight Phased Array Antennas.
- Initiated Near-Term High Priority Shipbuilding Affordability Thrust for VCS. Includes Design for Production Process Improvement, Automated Install of Studs, Deckplate Construction Information Network, Outfitting Process Improvement, and VCS Material Management.
- Initiated Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability / performance of Navy and defense platforms and weapon systems.

FY 2009 Plans:

- Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21.
- Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS.
- Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes / technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others.
- Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000.
- Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS. Includes completion of Design for Production Process Improvement, Automated Install of Studs, Deckplate Construction Information Network (renamed Paperless Deckplate MIP OQE Data Capture), Outfitting Process Improvement, and VCS Material Management and initiation of additional near-term high priority shipbuilding affordability efforts for VCS. Also includes initiation of Low Cost Impeller Support effort for Navy submarines / aircraft carriers and for shafts for Navy surface combatants.

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

-Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability / performance of Navy and defense platforms and weapon systems.

FY 2010 Plans:

- Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21.
- Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS.
- Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes / technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others.
- Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000.
- Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS.
- Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability / performance of Navy and defense platforms and weapon systems.

	FY 2008	FY 2009	FY 2010
ELECTRONICS PROCESSING AND FABRICATION	10.000	10.000	10.000

Electronics Processing and Fabrication efforts develop and deploy affordable, robust manufacturing processes and capabilities for electronics critical to defense applications over their full life cycle. Efforts create new and improved manufacturing processes on the shop floor, as well as repair and maintain facilities such as depots and logistics centers, with a strong emphasis on process maturation. Emphasis in FY 2008 and outyears is on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared towards toward electronics / electro-optics improvements for high priority air platforms.

FY 2008 Accomplishments:

- Continued Electronics / Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of Conformal Acoustic Velocity Sensor (CAVES) for VCS.
- Continued Electronics / Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. Includes

R1 Line Item 216

Page 7 of 15

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

continuation of LCS Reconfigurable Antenna.

- Continued advanced electronics and electro-optics efforts / thrusts to address improvements / affordability for DDG-1000, CVN-21, VCS, LCS, F/A-18, EA-18G, and others.
- Continued Electronics / Electro-Optics Thrust for Air Platforms. Includes continuation of Multispectral Mid-Infrared (IR) Lasers for Directional Infrared Counter Measures (DIRCM); completion of Helmet Mounted Display Visor; and completion of Digital Heads-Up Display.
- Continued Electronics / Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes continuation of DDG-1000 Remote Source Lighting; continuation of SiGE-Based System-on-Chip for Low-Cost Weight Phased Array Antennas; and continuation of High-G Packaging and Miniaturization for Deeply Integrated Inertial Guidance Units.
- Continued Electronics / Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes continuation of High-Power Carbide PiN Diode Manufacturing.
- Initiated and completed effort to determine applicability and performance capability of fiber optic acoustic sensors to reliably detect underwater swimmers approaching ships in port locations. (Underwater Swimmer Detection System)

FY 2009 Plans:

- Continue Electronics / Electro-Optics Thrust for VCS Affordability Initiative. Includes completion of Conformal Acoustic Velocity Sensor CAVES for VCS and initiation of improved affordable electronics / electro-optics efforts.
- Continue Electronics / Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. Includes completion of LCS Reconfigurable Antenna.
- Continue advanced electronics and electro-optics efforts / thrusts to address improvements / affordability for DDG-1000, CVN-21, VCS, LCS, F/A-18, EA-18G, and others.
- Continue Electronics / Electro-Optics Thrust for Air Platforms. Includes continuation of Multispectral Mid-IR Lasers for DIRCM and initiation of electronics / electro-optics efforts to improve affordability for Air Platforms.
- Continue Electronics / Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar / communications efforts to impact DDG 1000 affordability. Includes completion of DDG-1000 Remote Source Lighting and High-G Packaging and Miniaturization for Deeply Integrated Inertial Guidance Units.
- Continue Electronics / Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes completion of High-Power Carbide PiN Diode Manufacturing.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

FY 2010 Plans:

- Continue Electronics / Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics / electro-optics efforts.
- Continue Electronics / Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative.
- Continue Electronics / Electro-Optics Thrust for Air Platforms. Includes completion of Multispectral Mid-IR Lasers for DIRCM and continuation of electronics / electro-optics efforts to improve affordability for Air Platforms.
- Continue Electronics / Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG 1000 affordability. Includes completion of SiGE-Based System-on-Chip for Low-Cost Weight Phased Array Antennas.
- Continue Electronics / Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes initiation of electronics / electro-optics efforts to improve affordability for CVN-21.
- Complete advanced electronics and electro-optics efforts / thrusts to address improvements / affordability for DDG-1000, CVN-21, VCS, LCS, F/A-18, EA-18G, and others.

	FY 2008	FY 2009	FY 2010
METALS PROCESSING AND FABRICATION	18.000	18.000	18.000

The objective of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing processes and capabilities for metals and special materials critical to defense weapon system applications. Major areas that support this objective include: processing methods, special materials, joining, and inspection and compliance. These efforts directly impact the cost and performance of future aircraft, rotorcraft, land combat vehicles, surface and subsurface naval platforms, space systems, artillery and ammunition, and defense industry manufacturing equipment. Emphasis in FY 2008 and outyears is on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared toward metals processing and fabrication improvements for high priority air platforms.

FY 2008 Accomplishments:

- Continued Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of VCS Material Management; and continuation of Design for Production

R1 Line Item 216

Page 9 of 15

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

Process Improvement.

- Continued Outfitting Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of Outfitting Process Improvement.
- Continued rapid response and teaching factory activities.
- Continued Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes continuation of DDG-1000 Advanced Bonding Methods for Steel Structures; continuation of Low Cost Pallet Systems for DDG-1000 AGS; continuation of DDG-1000 Improved Tee Sections for High-Strength Steel Structures; continuation of Coating Application Improvement - formerly High Solids Coatings on DDG-1000; and continuation of PVLS Hull Integration (formerly Large Marine Structure Hull Integration).
- Continued Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes continuation of Ballistic 10% Ni Steel; continuation of Laser Welded Lightweight Panel Structure Fabrication - NMC; continuation of Advanced Surface Ship Watertight Enclosures; continuation of Alloy 625 Formability for Future Carriers; continuation of CVN Preparation Methods for Coating Tanks; and continuation of Optimization of CVN-21 Power Unit Assembly Facility and Carrier Visual Build.
- Continued Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. Includes continuation of Improved Dimensional Accuracy for LCS; continuation of LCS Paint Facility Design; and continuation of Low Cost FSW of Aluminum for LCS Applications.
- Continued Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of SSN Alloy 625 Pipe Welding; continuation of SSN-774 Damping Material Application; continuation of SSN Alternative Pipe Joining and Fittings; and continuation of Laser Cladding for Submarines.
- Continued Metal Materials and Process Improvements Thrust for Other Ship / Naval Sea Systems Command (NAVSEA) Platforms.
- Continued Metals Materials and Process Improvement Thrust for Air Platforms. Includes continuation of Corrosion Resistant Coatings for Magnesium Transmission Gearboxes; continuation of Translational Friction Weld Repair of Blinks; continuation of Erosion Resistant Coatings for Stage 1 Compressor Components; and continuation of N-UCAS Structural Design and Manufacturing Development.
- Continued Metal Materials and Process Improvements Thrust for Marine Corps Systems.

FY 2009 Plans:

- Continue Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative.
- Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative.
- Continue rapid response and teaching factory activities.
- Continue Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative.

R1 Line Item 216

Page 10 of 15

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

Includes completion of DDG-1000 Advanced Bonding Methods for Steel Structures; completion of Low Cost Pallet Systems for DDG-1000 AGS; completion of Coating Application Improvement - formerly High Solids Coatings on DDG-1000; and completion of PVLS Hull Integration (formerly Large Marine Structure Hull Integration). Metallic materials and process efforts for DDG 1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components.

- Continue Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.

Includes completion of CVN Preparation Methods for Coating Tanks and completion of Optimization of CVN-21 Power Unit Assembly Facility and Carrier Visual Build. Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components.

- Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative.

- Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative.

Includes completion of SSN Alloy 625 Pipe Welding; completion of SSN-774 Damping Material Application; and completion of Laser Cladding for Submarines. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating / cladding, etc.) resulting in reduced cost of fabrication for VCS components.

- Continue Metal Materials and Process Improvements Thrust for Other Ship / NAVSEA Platforms.

- Continue Metals Materials and Process Improvement Thrust for Air Platforms.

- Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems.

FY 2010 Plans:

- Continue Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative.

- Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative.

- Continue rapid response and complete teaching factory activities.

- Continue Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative.

Metallic materials and process efforts for DDG-1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components.

- Continue Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.

Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative.
- Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating / cladding, etc.) resulting in reduced cost of fabrication for VCS components.
- Continue Metal Materials and Process Improvements Thrust for Other Ship / NAVSEA Platforms.
- Continue Metals Materials and Process Improvement Thrust for Air Platforms.
- Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems.

	FY 2008	FY 2009	FY 2010
OTHER (SHIPBUILDING, REPAIR TECH, ENERGETICS, AND TECHNICAL ENGINEERING SUPPORT)	10.227	10.340	10.210

The "Other" activity includes shipbuilding technology, repair technology, energetics, and technical engineering support. Shipbuilding technology primarily addresses the development of manufacturing process improvements for shipyards and is geared towards affordability efforts for four ship platforms: DDG-1000, CVN-21, VIRGINIA Class Submarine (VCS), and Littoral Combat Ship (LCS). Repair technology addresses repair, overhaul, and sustainment functions that emphasize remanufacturing processes and advancing technology. Energetics efforts concentrate on developing energetics solutions to ensure the availability of safe, affordable, and quality energetics products largely in support of Program Executive Office (PEO) Integrated Warfare Systems (IWS).

FY 2008 Accomplishments:

- Continued Shipbuilding Affordability Thrust for CVN-21.
- Continued Shipbuilding Affordability Thrust for VCS.
- Continued Shipbuilding Affordability Thrust for LCS. Includes completion of Internal Supply Chain - Marinette Marine.
- Continued Shipbuilding Affordability Thrust for DDG-1000.
- Continued Shipbuilding Thrust for Other Ship / NAVSEA Platforms.
- Continued Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs.

R1 Line Item 216

Page 12 of 15

UNCLASSIFIED

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Continued Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of Flexible Manufacturing of Nitrogen Based Gun Propellants; and continuation of energetics efforts to support PEO IWS and other acquisition programs.
- Continued to provide technical engineering support for the ManTech Program.

FY 2009 Plans:

- Continue Shipbuilding Affordability Thrust for CVN-21.
- Continue Shipbuilding Affordability Thrust for VCS.
- Continue Shipbuilding Affordability Thrust for LCS.
- Continue Shipbuilding Affordability Thrust for DDG-1000.
- Continue Shipbuilding Thrust for Other Ship / NAVSEA Platforms.
- Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs.
- Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes completion of Flexible Manufacturing of Nitrogen Based Gun Propellants; and continuation of energetics efforts to support PEO IWS and other acquisition programs.
- Continue to provide technical engineering support for the ManTech Program.

FY 2010 Plans:

- Continue Shipbuilding Affordability Thrust for CVN-21.
- Continue Shipbuilding Affordability Thrust for VCS.
- Continue Shipbuilding Affordability Thrust for LCS.
- Continue Shipbuilding Affordability Thrust for DDG-1000.
- Continue Shipbuilding Thrust for Other Ship / NAVSEA Platforms.
- Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs.
- Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs.
- Continue to provide technical engineering support for the ManTech Program.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

C. OTHER PROGRAM FUNDING SUMMARY - NAVY RELATED RDT&E:

Not applicable.

OTHER PROGRAM FUNDING SUMMARY - NON-NAVY RELATED RDT&E:

PE 0708045A End Item Industrial Preparedness Activities

PE 0708011S Industrial Preparedness

PE 0708611F Support Systems Development

D. ACQUISITION STRATEGY:

Not applicable.

UNCLASSIFIED

FY 2010 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: May 2009

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 9999

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: CONGRESSIONAL PLUS-UPS

CONGRESSIONAL PLUS-UPS:

	FY 2008	FY 2009
E-BEAM FREE FORM REPAIR QUALIFICATION	0.000	1.197

	FY 2008	FY 2009
IMPROVED ADVANCED WATERTIGHT DOOR (IAWD) FOR NAVY SURFACE SHIPS	0.965	0.000

	FY 2008	FY 2009
NEXT GENERATION SCALABLE LEAN MANUFACTURING INITIATIVE	0.000	2.393

	FY 2008	FY 2009
OUT OF AUTOCLAVE COMPOSITE PROCESSING	0.000	1.596

	FY 2008	FY 2009
U.S. NAVY NUCLEAR POWER PLANT AND SHIP PROPULSION SHAFT MANUFACTURING IMPROVEMENT	0.964	0.000

CLASSIFICATION:		UNCLASSIFIED																																																	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION							DATE May 2009																																												
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7				R-1 ITEM NOMENCLATURE 0708730N/MARITIME TECHNOLOGY (MARITECH)																																															
COST (In Millions)	FY 2008	FY 2009	FY 2010																																																
Total PE Cost	13.525	0.000	0.000																																																
9999 / CONGRESSIONAL ADDS	13.525	0.000	0.000																																																
A. MISSION DESCRIPTION: (U) Project 9999 - Congressional Adds 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;">13.911</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;">13.525</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">-0.386</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</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;">-0.386</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;">0.000</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;">0.000</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">-0.386</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> </table>								Funding:	FY 2008	FY 2009	FY 2010	FY09 President's Budget	13.911	0.000	0.000	FY10 President's Budget	13.525	0.000	0.000	Total Adjustments	-0.386	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	-0.386	0.000	0.000	Program Adjustments	0.000	0.000	0.000	Rate/Misc Adjustments	0.000	0.000	0.000	Total	-0.386	0.000	0.000
Funding:	FY 2008	FY 2009	FY 2010																																																
FY09 President's Budget	13.911	0.000	0.000																																																
FY10 President's Budget	13.525	0.000	0.000																																																
Total Adjustments	-0.386	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	-0.386	0.000	0.000																																																
Program Adjustments	0.000	0.000	0.000																																																
Rate/Misc Adjustments	0.000	0.000	0.000																																																
Total	-0.386	0.000	0.000																																																

CLASSIFICATION:		UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/MARITIME TECHNOLOGY (MARITECH)	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADDS	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9B13A/National Shipbuilding Research Program	11.597	0.000	0.000
RDT&E Articles Quantity	0	0	0
(U) Provides funding for various shipbuilding and ship repair technology development projects specifically focused on reducing the cost of Navy ship design, construction and repair through NSRP. The NSRP is an industry directed, Navy co-sponsored, cost sharing, collaborative shipbuilding technology research consortium focused on reducing the cost of Navy shipbuilding and ship repair. It utilizes a unique legal mechanism which allows cooperation across the U.S. shipbuilding industry, while avoiding anti-trust concerns. It is structured as a collaboration of eleven major U.S. shipyards focused on industry-wide implementation of solutions to multi-yard, multi-program common cost drivers.			
	FY 2008	FY 2009	FY 2010
9858A/Navy Automatic Identification Technology	0.771	0.000	0.000
RDT&E Articles Quantity	0	0	0
(U) The Navy Automatic Identification Technology (AIT) Engineering Support Center (ESC) allows the Navy to incorporate AIT technologies and processes into the upfront planning of ship and aircraft acquisition programs, expeditionary forces, logistics, special operations forces, and all maintenance communities. Navy AIT ESC establishes the infrastructure for core life-cycle support to preclude redundancy and promote standardization as differing Navy organizations institute AIT-enabled systems/processes. AIT is a rapidly developing capability and its introduction and use must be coordinated throughout the Navy to ensure the most appropriate and cost-effective technologies are adopted. The Navy AIT ESC will operate as a Navy Service Office, administratively supported by the Naval Supply Systems Command (NAVSUP) Headquarters.			
	FY 2008	FY 2009	FY 2010
9C82A/Enhanced Tracking and Asset Control (ETAC)	1.157	0.000	0.000
RDT&E Articles Quantity	0	0	0
(U) Enhanced Tracking and Asset Control - The funding would be used by the Navy to implement ETAC at Navy repair, stock point and distribution sites across Navy air, surface, submarine and warfare center support environments.			