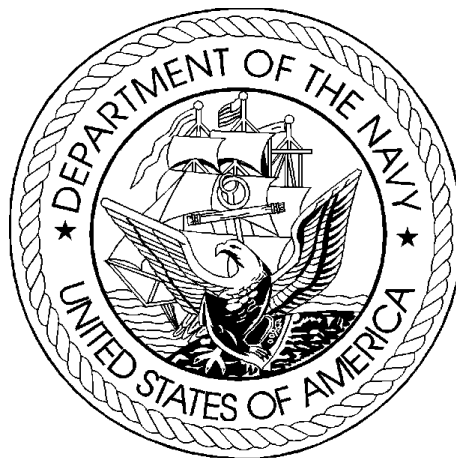


DEPARTMENT OF THE NAVY  
FISCAL YEAR (FY) 2007  
BUDGET ESTIMATES SUBMISSION



JUSTIFICATION OF ESTIMATES  
FEBRUARY 2006

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

UNCLASSIFIED  
DEPARTMENT OF THE NAVY  
FY 2007 RDT&E PROGRAM

FEBRUARY 2006

SUMMARY  
(\$ IN THOUSANDS)

Summary Recap of Budget Activities -----	FY 2005 -----	FY 2006 -----	FY 2007 -----
Operational Systems Development	3,280,746	3,343,386	3,713,379
Total Research, Development, Test & Eval, Navy	3,280,746	3,343,386	3,713,379
Summary Recap of FYDP Programs -----			
Strategic Forces	166,602	180,038	206,986
General Purpose Forces	994,640	1,007,842	822,562
Intelligence and Communications	986,798	1,177,171	1,331,522
Research and Development			1,292,926
Central Supply and Maintenance	73,191	75,147	59,383
Total Research, Development, Test & Eval, Navy	3,280,746	3,343,386	3,713,379

## UNCLASSIFIED

DEPARTMENT OF THE NAVY  
FY 2007 RDT&E PROGRAM

EXHIBIT R-1

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

Date: FEBRUARY 2006

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2005 -----	FY 2006 -----	FY 2007 -----	
162	0603660N	Advanced Development Projects	07				
163	0604227N	HARPOON Modifications	07			36,284	U
164	0604402N	Unmanned Combat Air Vehicle (UCAV) Advanced Component and Prototype Development	07			239,163	U
165	0101221N	Strategic Sub & Weapons System Support	07	84,478	92,171	124,522	U
166	0101224N	SSBN Security Technology Program	07	41,846	43,401	42,869	U
167	0101226N	Submarine Acoustic Warfare Development	07	11,232	9,399	2,131	U
168	0101402N	Navy Strategic Communications	07	29,046	35,067	37,464	U
169	0203761N	Rapid Technology Transition (RTT)	07	19,516	25,266	39,285	U
170	0204136N	F/A-18 Squadrons	07	121,376	86,089	31,098	U
171	0204152N	E-2 Squadrons	07	18,255	17,022	1,540	U
172	0204163N	Fleet Telecommunications (Tactical)	07	21,761	32,149	27,189	U
173	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	31,227	27,029	18,635	U
174	0204311N	Integrated Surveillance System	07	27,023	30,647	30,740	U
175	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	3,580	4,696	1,812	U
176	0204571N	Consolidated Training Systems Development	07	20,322	43,615	17,857	U
177	0204574N	Cryptologic Direct Support	07	1,414	1,401	1,425	U
178	0204575N	Electronic Warfare (EW) Readiness Support	07	12,204	13,777	20,673	U
179	0205601N	HARM Improvement	07	153,797	84,569	99,208	U
180	0205604N	Tactical Data Links	07	18,380	86,864	41,967	U

## UNCLASSIFIED

DEPARTMENT OF THE NAVY  
FY 2007 RDT&E PROGRAM

EXHIBIT R-1

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

Date: FEBRUARY 2006

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2005 -----	FY 2006 -----	FY 2007 -----	
181	0205620N	Surface ASW Combat System Integration	07	20,397	12,751	9,417	U
182	0205632N	MK-48 ADCAP	07	21,237	21,724	24,988	U
183	0205633N	Aviation Improvements	07	75,417	94,928	71,612	U
184	0205658N	Navy Science Assistance Program	07	7,060	3,858	3,376	U
185	0205675N	Operational Nuclear Power Systems	07	63,920	63,092	69,350	U
186	0206313M	Marine Corps Communications Systems	07	272,587	256,291	218,460	U
187	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	56,786	72,982	47,592	U
188	0206624M	Marine Corps Combat Services Support	07	15,908	16,318	17,524	U
189	0207161N	Tactical AIM Missiles	07	3,927	9,243	7,946	U
190	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	8,546	3,531	6,705	U
191	0208058N	Joint High Speed Vessel (JHSV)	07			14,163	U
192	0301303N	Maritime Intelligence	07				
193	0301323N	Collection Management	07				
194	0301327N	Technical Reconnaissance and Surveillance	07				
195	0303109N	Satellite Communications (SPACE)	07	447,061	539,489	748,662	U
196	0303140N	Information Systems Security Program	07	25,696	21,569	23,037	U
197	0303158N	Joint Command and Control Program (JC2)	07		4,925	5,073	U
198	0305149N	COBRA JUDY	07	92,661	117,749	135,372	U
199	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	07	5,958	9,985	7,307	U

## UNCLASSIFIED

DEPARTMENT OF THE NAVY  
FY 2007 RDT&E PROGRAM

EXHIBIT R-1

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

Date: FEBRUARY 2006

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2005 -----	FY 2006 -----	FY 2007 -----	
200	0305188N	Joint C4ISR Battle Center (JBC)	07	43,064	67,255		U
201	0305192N	Military Intelligence Program (MIP) Activities	07	4,701	4,225	6,793	U
202	0305204N	Tactical Unmanned Aerial Vehicles	07	76,943	115,173	115,950	U
203	0305205N	Endurance Unmanned Aerial Vehicles	07	64,045		26,357	U
204	0305206N	Airborne Reconnaissance Systems	07	13,866	31,399	35,038	U
205	0305207N	Manned Reconnaissance Systems	07	49,732	62,002	22,815	U
206	0305208N	Distributed Common Ground/Surface Systems	07	13,029	12,141	16,587	U
207	0307207N	Aerial Common Sensor (ACS)	07	26,555	34,994	17,182	U
208	0308601N	Modeling and Simulation Support	07	21,966	7,710	7,503	U
209	0702207N	Depot Maintenance (Non-IF)	07	4,200	12,461	2,960	U
210	0702239N	Avionics Component Improvement Program	07			1,375	U
211	0708011N	Industrial Preparedness	07	59,095	59,286	55,048	U
212	0708730N	Maritime Technology (MARITECH)	07	9,896	3,400		U
		Operational Systems Development		3,280,746	3,343,386	3,713,379	
		Total Research, Development, Test & Eval, Navy		3,280,746	3,343,386	3,713,379	

**Fiscal Year 2007 Budget Estimates  
Budget Appendix Extract Language**

**RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY**

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, \$16,912,223,000, to remain available for obligation until September 30, 2008: *Provided*, That funds appropriated in this paragraph which are available for the V-22 may be used to meet unique operational requirements of the Special Operations Forces: *Provided further*, That funds appropriated in this paragraph shall be available for the Cobra Judy program. (10 U.S.C. 174, 2352-54, 7522; Department of Defense Appropriations Act, 2006).



## PROGRAM

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## RATING

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## IMPROVEMENT PLAN

[About Improvement Plans](#)

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## PROGRAM ASSESSMENT

### Defense Communications Infrastructure

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

#### NOT PERFORMING

##### Results Not Demonstrated

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

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

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

- [Details and Current Status of this program assessment.](#)
- [How all Federal programs are assessed.](#)
- [Learn more about Defense Communications Infrastructure.](#)

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
--	-------------------------------

APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA7		0604227N Harpoon Modifications						
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost				36.284	53.325	24.044		
1843 Harpoon Block II				36.284	53.325	24.044		

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**  
 FY 2007 New Start Program. The Harpoon Block III Weapons System is 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 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. Specific improvements 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 will provide for a concept of operations which will support existing ISR Platform target detection; target & weapon position update (ie. UAV, Helo, Fixed wing), and ISR Platform to Weapon Correlation Mapping.

This development effort will lead to a procurement of 400 Harpoon Block III upgrade kits, beginning in FY 2009, that will retrofit existing Harpoon USN missile inventory.

FY07-FY09 RDT&E funding will support full development of Selected Availability Anti-Spoof Security Module (SAASM) development and integration, Data link integration, and Test and Evaluation.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>		PROGRAM ELEMENT NUMBER AND NAME 0604227N Harpoon Modifications			PROJECT NUMBER AND NAME 1843 Harpoon Block II			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost				<b>36.284</b>	<b>53.325</b>	<b>24.044</b>		
RDT&E Articles Qty				<b>4</b>				

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

FY 2007 New Start Program. The Harpoon Block III Weapons System is 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 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. Specific improvements 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 will provide for a concept of operations which will support existing ISR Platform target detection; target & weapon position update (ie. UAV, Helo, Fixed wing), and ISR Platform to Weapon Correlation Mapping.

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# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME 0604227N Harpoon Modifications	PROJECT NUMBER AND NAME 1843 Harpoon Block II
--	---	--

**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				0.846
RDT&E Articles Quantity				4

Start Block III kit design and development. Begin prototype development and fabrication.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				13.546
RDT&E Articles Quantity				

Start Block III Guidance Control Unit Design & Integration.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				6.446
RDT&E Articles Quantity				

Start Block III missile Operational Flight Program (OFP) design and development.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME 0604227N Harpoon Modifications	PROJECT NUMBER AND NAME 1843 Harpoon Block II
--	---	--

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

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				15.446
RDT&E Articles Quantity				

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.

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

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

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME 0604227N Harpoon Modifications	PROJECT NUMBER AND NAME 1843 Harpoon Block II																																																								
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;"></th> <th style="text-align: right; width: 15%;">FY 05</th> <th style="text-align: right; width: 15%;">FY 06</th> <th style="text-align: right; width: 15%;">FY 07</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;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>  Current BES/President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">36.284</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;">36.284</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td>  Congressional Reductions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Congressional Undistributed Reductions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Congressional Increases</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Programmatic Adjustments</td> <td></td> <td></td> <td style="text-align: right;">36.100</td> </tr> <tr> <td>  Economic Assumptions</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Miscellaneous Adjustments</td> <td></td> <td></td> <td style="text-align: right;">0.184</td> </tr> <tr> <td>  Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">36.284</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule:</p> <p style="margin-left: 20px;">New Start</p> <p style="margin-top: 20px;">Technical:</p> <p style="margin-left: 20px;">New Start</p>				FY 05	FY 06	FY 07	Funding:				Previous President's Budget:	0.000	0.000	0.000	Current BES/President's Budget	0.000	0.000	36.284	Total Adjustments	0.000	0.000	36.284	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions				Congressional Increases				Programmatic Adjustments			36.100	Economic Assumptions				Miscellaneous Adjustments			0.184	Subtotal	0.000	0.000	36.284
	FY 05	FY 06	FY 07																																																							
Funding:																																																										
Previous President's Budget:	0.000	0.000	0.000																																																							
Current BES/President's Budget	0.000	0.000	36.284																																																							
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Programmatic Adjustments			36.100																																																							
Economic Assumptions																																																										
Miscellaneous Adjustments			0.184																																																							
Subtotal	0.000	0.000	36.284																																																							

R-1 SHOPPING LIST - Item No. 163

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA7			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604227N Harpoon Modifications			<b>PROJECT NUMBER AND NAME</b> 1843 Harpoon Block II			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
232600 Harpoon Mods (WPN, BA2)					9.145	22.705	23.622	19.800	75.272
522700 Harpoon Support Equipment (OPN, BA-4)			0.100		7.224	8.026	5.021	3.100	23.471
<b>E. ACQUISITION STRATEGY:</b>									
<p>HARPOON Block III will provide a capability upgrade consisting of a "kit", which will be installed on existing Harpoon RGM-84D missiles (Formally an ACAT 1C program). Program insertion will be at the System Development and Demonstration level, followed by a production and installment effort funded in Weapons Procurement, Navy. Required support equipment will be procured using Other Procurement, Navy.</p> <p>Acquisition management will be executed by the Program Manager for PMA-201 via a Government and contractor IPT concept. The primary Harpoon Block III upgrade contract, to include all system integration efforts, is intended to be Sole Source, Cost-Plus Fixed Fee with Boeing, the Original Equipment Manufacturer for Harpoon. Select RDT&amp;E collateral efforts are being evaluated as stand-alone contract candidates in the interest of cost savings.</p>									

R-1 SHOPPING LIST - Item No. 163

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA7</b>			0604227N Harpoon Modifications			1843 Harpoon Block II						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Boeing, St Charles						17.084	10/06	48.269	65.353	65.353
Ancillary Hardware Development	WX	NAWC WD China Lake, CA						5.743	10/06	4.640	10.383	
Ancillary Hardware Development	WX	Port Hueneme, CA						0.400	10/06	0.300	0.700	
Ancillary Hardware Development	WX	NSWC Indian Head, MD						0.300	10/06	0.300	0.600	
Ancillary Hardware Development	WX	SPAWAR, San Diego, CA						0.400	10/06	0.300	0.700	
Ship Integration	WX	Port Hueneme, CA						0.057	10/06	0.060	0.117	
Ship Integration	WX	NSWC, Dahlgren, VA						2.700	10/06	1.200	3.900	
Ship Integration	WX	SPAWAR, San Diego, CA						1.500	10/06	1.100	2.600	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		28.184		56.169	84.353	
<p>Remarks: Prime contractor software development is being accomplished on the primary development contract and is included in the Boeing cost estimate above. The China Lake Ancillary Hardware Development cost above also includes software development.</p>												
Development Support	Various	Various						2.700	11/06	6.200	8.900	
Integrated Logistics Support	Various	Various						2.400	11/06	1.600	4.000	
Integrated Logistics Support	WX	Port Hueneme, CA						0.300	10/06	0.700	1.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		5.400		8.500	13.900	
<p>Remarks:</p>												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA7</b>			0604227N Harpoon Modifications			1843 Harpoon Block II						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Integrated Test & Evaluation	WX	NAWC WD China Lake. CA						1.100	10/06	9.500	10.600	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		1.100		9.500	10.600	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various						1.500	10/06	3.000	4.500	
Travel	Various	Various						0.100	10/06	0.200	0.300	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		1.600		3.200	4.800	
Remarks:												
Total Cost			0.000	0.000		0.000		36.284		77.369	113.653	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>								PROGRAM ELEMENT NUMBER AND NAME 0604227N Harpoon Modifications								PROJECT NUMBER AND NAME 1843 Harpoon Block II																								
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
<b>Milestone DECISIONS</b>								△ ACAT Designation				△ MSB								△ MSC		△ FRP																		
<b>System Design and Demonstration Milestones</b>										△ RFP				△ Award R&D Contract		△ SRR		△ PDR		△ CDR																				
<b>Production Milestone</b>																									<b>Production &amp; Retrofit</b>															
																									MSL Kit Procurement Qty				50				125				125			
																									LCS Kit Procurement Qty				28				27							

R-1 SHOPPING LIST - Item No. 163

**UNCLASSIFIED**





EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>					R-1 ITEM NOMENCLATURE 0604402N Unmanned Combat Air Vehicle (UCAV) Adv Cp / Proto Dev			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost				<b>239.163</b>	<b>310.212</b>	<b>369.617</b>	<b>491.347</b>	<b>421.219</b>
3178 Unmanned Combat Air Vehicle (UCAV)				<b>239.163</b>	<b>310.212</b>	<b>369.617</b>	<b>491.347</b>	<b>421.219</b>

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

Note: In FY06 the Department transferred the Joint Unmanned Combat Air System (J-UCAS) program from the Defense Advanced Research Projects Agency (DARPA) to be a joint program led by the Air Force with Navy representation. In Dec 05 the Department further directed the J-UCAS program to split into two separate programs: one AF classified program and a Navy Unmanned Combat Air Vehicle (UCAV) program. This exhibit describes the Navy UCAV program. Funding is being realigned from PE 0604400F and PE 0603400F to PE 0604402N.

The UCAV program is an effort to develop Aircraft Carrier based, long endurance, long range, low observable, autonomous capabilities for Persistent Intelligence, Surveillance, and Reconnaissance (ISR) missions within the emerging global command and control architecture for the warfighting community. The program is focused on maturing technologies that support a competition for a System Development and Demonstration (SDD) phase , resulting in an IOC of FY18. SDD funding is not covered or described in this exhibit.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0604402N UCAV Adv Cp / Proto Dev			PROJECT NUMBER AND NAME 3178 Unmanned Combat Air Vehicle (UCAV)				
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
3178 Unmanned Combat Air Vehicle (UCAV)					<b>239.163</b>	<b>310.212</b>	<b>369.617</b>	<b>491.347</b>	<b>421.219</b>
RDT&E Articles Qty - Not Applicable									

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

The UCAV program is an effort to develop Aircraft Carrier based, long endurance, long range, low observable, autonomous capabilities for Persistent Intelligence, Surveillance, and Reconnaissance (ISR) missions within the emerging global command and control architecture for the warfighting community. The program is focused on maturing technologies that support a competition for a System Development and Demonstration (SDD) phase , resulting in an IOC of FY18. SDD funding is not covered or described in this exhibit.

R-1 SHOPPING LIST - Item No. 164

## UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 2 of 11)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0604402N UCAV Adv Cp / Proto Dev	PROJECT NUMBER AND NAME 3178 Unmanned Combat Air Vehicle (UCAV)

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			239.163
RDT&E Articles Quantity			

Initiate development of Unmanned Combat Air Vehicle (UCAV), operating system and sensors, government engineering support, logistics support, program management support, and travel for the UCAV program.

R-1 SHOPPING LIST - 164

**UNCLASSIFIED**

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 3 of 11)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		<b>February 2006</b>																																																
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-7</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604402N UCAV Adv Cp / Proto Dev	<b>PROJECT NUMBER AND NAME</b> 3178 Unmanned Combat Air Vehicle (UCAV)																																																
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: center;">FY 05</th> <th style="text-align: center;">FY 06</th> <th style="text-align: center;">FY 07</th> </tr> </thead> <tbody> <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;">239.163</td> </tr> <tr> <td>Total Adjustments</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">239.163</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 40px;">Congressional Reductions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional Undistributed Reductions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional Increases</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Economic Assumptions</td> <td></td> <td></td> <td style="text-align: right;">0.163</td> </tr> <tr> <td style="padding-left: 40px;">Miscellaneous</td> <td></td> <td></td> <td style="text-align: right;">239.000</td> </tr> <tr> <td style="padding-left: 40px;">Subtotal</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">239.163</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule:</p> <p style="margin-left: 40px;">Not applicable</p> <p style="margin-top: 20px;">Technical:</p> <p style="margin-left: 40px;">Not applicable</p>			Funding:	FY 05	FY 06	FY 07	Previous President's Budget:			0.000	Current President's Budget:			239.163	Total Adjustments			239.163	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions				Congressional Increases				Economic Assumptions			0.163	Miscellaneous			239.000	Subtotal			239.163
Funding:	FY 05	FY 06	FY 07																																															
Previous President's Budget:			0.000																																															
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R-1 SHOPPING LIST - 164

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0604402N UCAV Adv Cp / Proto Dev			PROJECT NUMBER AND NAME 3178 Unmanned Combat Air Vehicle (UCAV)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
0604731N / UCAV						61.275	102.166		163.441
<b>E. ACQUISITION STRATEGY:</b>									
<p>In December 2005, the Department directed the funding of a Navy Unmanned Combat Air Vehicle Program. The funding will come from a portion of the J-UCAS PE from FY07 to FY11 as directed . The Department also requires the Navy to submit by August 2006, a restructured program and a plan to conduct an Aircraft Carrier demonstration of a low observable unmanned combat air system. The Navy is currently formulating that plan.</p> <p>The UCAV acquisition strategy is to mature required technologies for a Aircraft Carrier based, long endurance, long range, low observable, autonomous capabilities for a Persistent Intelligence, Surveillance, and Reconnaissance (ISR) Unmanned Aerial System (UAS) to the appropriate level for a Milestone B, notionally including a competitive down select to a single contractor for the SDD phase. This effort will leverage not only the work conducted under the former J-UCAS program, but also other efforts ongoing in the Department. The ultimate goal is to provide a carrier based, long endurance, long range, low observable, autonomous capable, Persistent Intelligence, Surveillance, and Reconnaissance (ISR) UAS operational capability.</p>									

R-1 SHOPPING LIST - Item No. 164

## UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 5 of 11)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0604402N UCAV Adv Cp / Proto Dev			3178 Unmanned Combat Air Vehicle (UCAV)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development*	TBD	TBD						239.163	12/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		239.163		Continuing	Continuing	
Remarks: * All funding is reflected under Primary Hardware Development. Detailed estimates by cost categories are currently unavailable. These funds will also cover Government engineering support, logistical support, program management support, and travel for the UCAV program.												
Integrated Logistics Support	WX	Various									0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0604402N UCAV Adv Cp / Proto Dev			3178 Unmanned Combat Air Vehicle (UCAV)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Government Engineering Support	WX	Various									0.000	
Program Management Support	Various	Various									0.000	
Travel	TO	NAVAIR-HQ, Pax River, MD									0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Total Cost			0.000	0.000		0.000		239.163		Continuing	Continuing	
Remarks:												

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**UNCLASSIFIED**

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 7 of 11)



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: <b>February 2006</b>															
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-7</b>								0604402N UCAV Adv Cp / Proto Dev								3178 Unmanned Combat Air Vehicle (UCAV)																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>UCAV Development Activities</b>																																

R-1 SHOPPING LIST - Item No. 164

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>January 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>					R-1 ITEM NOMENCLATURE <b>PE 0101221N Strategic Sub &amp; Wpns Sys Spt</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost*(total may or may not add due to rounding)		84.5	92.2	124.5	88.1	88.3	89.9	87.1
J2228 Technology Applications Program		77.1	85.7	81.2	84.9	85.1	86.6	86.6
J3158 Enhanced Special Weapons		0.0	0.0	43.1	2.9	2.9	2.9	0.0
S0004 TRIDENT Submarine System Improvement		7.4	6.5	0.2	0.3	0.3	0.4	0.5

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

The TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) 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, Radiation Hardened Electronics Applications, and Strategic Propulsion Applications. 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 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 and waterside requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

R-1 SHOPPING LIST - Item No. 165 - 1 of 165 - 16

# UNCLASSIFIED

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, Page 1 of 2)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	R-1 ITEM NOMENCLATURE <b>PE 0101221N Strategic Sub &amp; Wpns Sys Spt</b>

**B. (U) Program Change Summary:**

	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>
Previous President's Budget ( FY 2006 President's Controls)	89.9	90.0	89.4
Current BES/Fact of Life Budget (FY 2007 President's Budget Controls)	84.5	92.2	124.5
Total Adjustments:	-5.4	+2.2	+35.1

**Summary of Adjustments:**

Execution Realignments	-2.2		
SBIR Transfer	-1.8		
Department of Energy Reduction	-.1		
Nuclear Physical Security	-1.3		
Congressional Reductions (Project 2228)		-1.3	
Contractor Support/Miscellaneous (Projects 2228 and 3158)			-7.3
SSBN funding adjustment- project S0004			-2.7
Thin Plate Congressional Plus-up (Project S0004)		+3.5	
Enhanced Special Weapons Increase			+45.1

C. (U) Other Program Funding Summary: See enclosed R-2a for each individual project data.

D. (U) Acquisition Strategy: See enclosed R-2a for each individual project data.

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost J2228 Technology Applications	77.1	85.7	81.2	84.9	85.1	86.6	86.6
RDT&E Articles Qty							

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

This project supports implementation of a coordinated Navy/Air Force Reentry System Applications Program (RSAP), a coordinated Navy/Air Force Strategic Guidance Applications Program (GAP), a coordinated Navy/Air Force Strategic Propulsion Applications Program (SPAP), and a coordinated Department of Defense Radiation Hardened Applications Program (RHAP). 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 SPAP program, which commenced in FY 2004, demonstrates and validates technologies unique to strategic missile applications. The RHAP program, which commenced in FY 2004, addresses production, qualification and manufacturing issues associated with strategic and space radiation hardened electronics. 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." Current 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.
  
- The SPAP program is a coordinated Navy/Air Force effort and addresses infrastructure needs by exercising critical developmental skills to allow for future large-scale rocket motor test firings. A sound base of demonstrated technologies suitable for Strategic Missile applications will be maintained and will provide the nation a talent base and source of technologies suitable for a follow-on development program. Boost propulsion (missile stages), post boost propulsion (missile payload delivery vehicle) and Ordnance (separation events and flight termination events) are all integral parts of missile propulsion application efforts.
  
- The RHAP program sustains critical skills in radiation hardened electronics by advancing radiation hardened simulation technologies to reflect the processes in future systems. These efforts become of greater importance because of the shrinking industrial base for radiation hardened electronics, the unavailability of underground testing resources, and the loss of radiation hardened expertise. These efforts are coordinated by the Radiation Hardened Oversight Council (RHOC) chaired by the Director, Defense Research & Engineering (DDR&E). The RHAP program focuses on a coordinated Productization & Qualification Program which provides a transition between Science and Technology (S&T) and production by efficient utilization of limited resources, sharing of information to eliminate redundancy, increased use of common part/technologies, coordination into the RHOC technology road map and implementation of the USD (AT&L) investment strategy. The RHAP compliments the GAP electronic part activities by specifically focusing on those tasks required to ensure producibility of radiation hardened parts.

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>	

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

	FY 05	FY 06	FY 07
Reentry Systems Application Program (RSAP)	25.9	26.6	27.0
RDT&E Articles Quantity			

(U) FY 2005 PLAN

- (U) (\$25.9) Continue Reentry System Applications Program. Fully obligated.  
 FY 2005 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 heatshield and nosetip materials including those available from Science & Technology (S&T).
  - (U) Characterize and develop alternate low-cost heatshield and replacement nosetip material.
  - (U) Conduct a ground and flight test program to assess performance of reentry components exposed to operational environments beyond their design life; complete evaluation of ground test results; flight test repackaged components for risk mitigation.
  - (U) Initiate fabrication of RB inertial sensor flight test instrumentation for FY 2006 flight test.
  - (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) Begin development of radiation hardened processor for advanced GPS receiver.
  - (U) Initiate feasibility study of the use of Terminal Fix Sensors (TFS) for target area trajectory correction.
  - (U) Ground test advanced reentry material systems.
  - (U) Develop advanced avionics computer for new engineering instrumentation package.

(U) FY 2006 PLAN

- (U) (\$26.6) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the first year.  
 FY 2006 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 heatshield and nosetip materials including those available from Science & Technology (S&T).
  - (U) Flight test alternate low-cost heatshields and replacement nosetip material.
  - (U) Flight test operationally aged heatshields 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) 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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>

## B. (U) Accomplishments/Planned Program (Continued)

### (U) FY 2007 PLAN

- (U) (\$27.0) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the first year.  
FY 2007 efforts include:
  - (U) Maintain the current capability and support the planned service life extension of Navy reentry systems.
  - (U) Continue development of reentry vehicle replacement heatshield and nosetip materials and tooling
  - (U) Conduct aging assessment update for reentry vehicle materials and their replacements
  - (U) Develop low cost replacement materials using new/improved materials and processes for flight test experimentation.
  - (U) Develop appropriate flight test plan and initiate activities to test improved in-flight instrumentation data transfer
  - (U) Flight test and evaluate the Mk4A advanced 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 test instrumentation to demonstrate D5LE missile reentry body interface compatibility
  - (U) Final development of advanced GPS receiver and integrate for flight test demonstration
  - (U) Continue ground testing of advanced instrumentation components

R-1 SHOPPING LIST - Item No. 165 - 5 of 165 - 16

UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>

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

	FY 05	FY 06	FY 07
Guidance Application Program (GAP)	20.5	21.0	21.3
RDT&E Articles Quantity			

(U) FY 2005 PLAN

- (U) (\$20.5) Continue Strategic Guidance Applications Programs (GAP). Fully obligated.

FY 2005 efforts include:

- (U) Utilize alternate models for incorporation in Integrated Engineering Environment (IEE) and Hardware in the Loop (HWIL). Exercise alternate sensor technologies in the virtual system and the HWIL experiments. Finalize IEE/HWIL capability to an increased fidelity for system architecture/design tradeoffs in support of technology downselect by FY 2006 for D5 Life Extension.
- (U) Continue to evaluate alternate sensor technologies, (accelerometer, gyro, and stellar) and proximity electronics for application in the D5 Life Extension Guidance system and/or replacement of system weak links. Evaluate prototype radiation-hard sensor build and test results for appropriate applications.
- (U) (Sensors) Design, build, and evaluate Silicon Oscillator Accelerometer (SOA) support electronics and improved build processes. Prove SOA capability to meet Rad-hard strategic goals
- (U) (GYRO) Build 6 gyros focused on improved dynamic and radiation margin in support of Life Extension.
- (U) (GYRO) Develop Interferometric Fiber Optic Gyro (IFOG) hardenable electronic circuits.
- (U) (Stellar) Invest in alternate star sensor technologies for advanced system concepts, e.g. Electron Bombarded (intensified) Charged Coupled Device (CCD) and Active Pixel sensors.

(U) FY 2006 PLAN

- (U) (\$21.0) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the 1<sup>st</sup> year.

FY 2006 efforts include:

- (U) Complete the prototype virtual system simulation model and demonstrate models in a closed-loop system. Modeling and simulation support for sub-system design and HWIL infrastructure development.
- (U) Continue to evaluate alternate sensor technologies, (accelerometer, gyro, and stellar) and proximity electronics for application in the D5 Life Extension Guidance system and/or replacement of system weak links. Evaluate prototype radiation-hard sensor build and test results for appropriate applications.
- (U) (SOA) Continue design, build and evaluate SOA support electronics and improved build processes. Prove SOA capability to meet Rad-Hard strategic goals.
- (U) (AltPIGA) Develop producible long life, low cost hemispherical gas bearing wheel.
- (U) (Hemispherical Resonator Gyro (HRG)) Examine and demonstrate technologies for reducing long term bias trending. Improve performance during and following shock and vibration events.
- (U) (IFOG) Improve IFOG proximity electronics hardness to strategic radiation levels.



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>	

**B. (U) Accomplishment/Planned Program (Continued)**

(U) FY 2007 PLAN

- (U) (\$21.3) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the first year.  
FY 2007 efforts include:
  - (U) Support the IMU system integration effort, model simulation development in support of the enhanced ground testing (EGT) task, support remaining non-real-time subsystem/system simulation effort and support software Verification & Validation (V&V) testing.
  - (U) Continue to evaluate alternate sensor technologies, (accelerometer, gyro, and stellar) and proximity electronics for application in the D5 Life Extension Guidance system and/or replacement of system weak links. Evaluate prototype radiation-hardened sensor build and test results for appropriate applications.
  - (U) (SOA) Continue design, build and evaluate SOA support electronics and improved build processes. Test the all-silicon SOA in a strategic radiation environment.
  - (U) (AltPIGA) Develop producible long-life, low cost hemispherical gas bearing wheel and commercial processes/vendors for mass produced flexure/pick off assemblies for AltPIGA.
  - (U) (IFOG) Build and radiation test complete sense head. Perfect technologies and processes for producing low cost Rad Hard fiber. Conduct investigations to improve circumvention and recovery performance.
  - (U) (HRG) Improve benign scale factor performance. Examine and demonstrate technologies for reducing long term bias trending. Improve performance during and following shock and vibration events.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>	

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

	FY 05	FY 06	FY 07
Strategic Propulsion Applications Program (SPAP)	17.2	18.2	17.8
RDT&E Articles Quantity			

(U) FY 2005 PLAN

- (U) (\$17.2) Continue SPAP program. Fully obligated.  
 FY 2005 efforts include:
  - (U) Continue down select process of boost motor components by testing and prepare for a boost rocket motor test demonstration.
  - (U) Initiate component tests for identified post boost control technologies.
  - (U) Initiate component tests for identified missile ordnance technologies.
  - (U) Complete fabrication of boost motor test hardware
  - (U) Initiate down-select process for suitable post boost technologies test

(U) FY 2006 PLAN

- (U) (\$18.2) Continue SPAP program. Full obligation is projected by the 3rd quarter of the first year.  
 FY 2006 efforts include:
  - (U) Conduct biennial Industrial Base assessment.
  - (U) Complete boost rocket motor test demonstration
  - (U) Complete boost rocket motor post test assessment and evaluation.
  - (U) Complete component tests for identified post boost control technologies.
  - (U) Continue component tests for identified missile ordnance technologies.

(U) FY 2007 PLAN

- (U) (\$17.8) Continue SPAP program. Full obligation is projected by the 3<sup>rd</sup> quarter of the first year.  
 FY 2007 efforts include:
  - (U) Continue components tests for suitable boost motor technologies
  - (U) Continue to evaluate and down-select suitable technologies for boost motor test.
  - (U) Continue component tests for identified post boost control technologies.
  - (U) Continue to evaluate and down-select suitable post boost control technologies test.
  - (U) Complete component tests for identified missile ordnance technologies.
  - (U) Initiate preparations for post boost and ordnance demonstration test.

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

	FY 05	FY 06	FY 07
Radiation Hardened Applications Program (RHAP)	13.5	19.9	15.1
RDT&E Articles Quantity			

(U) FY 2005 PLAN

- (U) (\$13.5) Continue RHAP program. Full obligation is projected by the end of the first year.  
FY 2005 efforts include:
  - (U) Continue productization and qualification of .35 micron digital SOI technology.
  - (U) Continue productization and qualification of 0.7 micron mixed signal SOI technology.
  - (U) Continue physics based modeling method for nuclear radiation effects (X-ray, gamma, and neutron) on missile and guidance missile components.
  - (U) Initiate physics based modeling for nuclear radiation effects on complex digital circuits with built in testability.
  - (U) Initiate productization and qualification of high voltage analog SOI technology.
  - (U) Continue evaluation and validation of post radiation SPICE models for dose rate, total ionizing dose, and single event effects
  - (U) Continue technology/product development of alternate non-volatile memories, including Chalcogenide (CRAM), Magnetic (MRAM), and Silicon-on-Nitride (SONOS) technologies.

(U) FY 2006 PLAN

- (U) (\$19.9) Continue RHAP program, Full obligation is projected by the 3rd quarter of the first year.  
FY 2006 efforts include:
  - (U) Initiate productization and qualification of .15 micron digital CMOS-epi and SOI technology.
  - (U) Continue productization and qualification of .35 micron mixed-signal SOI technology.
  - (U) Complete productization and qualification of .35 micron digital SOI technology
  - (U) Complete productization and qualification of 0.7 micron mixed-signal SOI technology
  - (U) Initiate productization and qualification of alternate non-volatile memories, including Chalcogenide (CRAM), Magnetic (MRAM) and Silicon-on-Nitride (SONOS) technologies.
  - (U) Continue productization and qualification of high-voltage analog SOI technology.
  - (U) Complete physics based modeling methods for nuclear radiation effects (X-ray, gamma, neutron) on missile and guidance/missile components.
  - (U) Continue physics based modeling for nuclear radiation effects on complex digital circuits with built in testability.
  - (U) Continue evaluation and validation of post radiation SPICE models for dose rate, total ionizing dose, neutron and single event effects.
  - (U) Initiate physics based modeling of survivability and rail-span collapse of complex digital circuits in dose-rate (X-ray and gamma) environment.

(U) FY 2007 PLAN

- (U) (\$15.1) Continue RHAP Program. Full obligation is projected by the 3<sup>rd</sup> quarter of the first year.  
FY 2007 efforts include:
  - (U) Continue productization and qualification of .15/.35 micron digital CMOS-SOI technology.
  - (U) Complete productization and qualification of .35/.7 micron mixed-signal SOI products.
  - (U) Continue productization and qualification of primary non-volatile memory technology and product Magnetic (MRAM).
  - (U) Complete productization and qualification of high-voltage analog SOI technology
  - (U) Complete physics based modeling methods for nuclear radiation effects on complex digital circuits with built in testability.
  - (U) Complete evaluation and validation of post radiation SPICE models for dose rate, total ionizing dose, neutron and single event effects.
  - (U) Continue physics based modeling of survivability and rail-span collapse of complex digital circuits in dose-rate (X-ray and Gamma) environment.

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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>

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

<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Total Complete</u>	<u>Total Cost</u>
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**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:**

- LMSS / CA - Reentry Body Systems integration (RSAP)
- NSWC / VA - Heatshield Nositip 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)
- CSDL/MA- Guidance radiation hardened electronics integration(RHAP)
- CSDL/MA- Analog, digital, mixed-signal and discreet radiation model development (RHAP)
- HI/FL - RADHARD application specific integrated Circuit library (RHAP)
- NGMS/CA - RADHARD oxi-nitride non-volatile memory productization (RHAP)
- CSDL/MA - Analog, digital, mixed signal and discreet radiation model development (RHAP)
- BAE/MD - 4M-bit RADHARD Chalcogenide non-volatile memory product development (RHAP)
- NAWC/CA - Rocket Motor testing and integration (SPAP)
- LMSSC/CA - Missile systems integration (SPAP)
- NSWC/VA - Coordinating and executing ordnance tests (SPAP)

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Exhibit R-3 Cost Analysis	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT <b>PE 0101221N Strategic Sub &amp; Wpns Sys Spt</b>
PROJECT NUMBER AND NAME <b>Technology Applications J2228</b>	

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>Support &amp; Management</b>														
Technology Applications	SS - CPFF	LMMS / CA	70.5			12.8	10-04	12.5	12-05	13.7	10-06	Cont.	Cont.	TBD
Technology Applications	WR	NSWC / VA	45.7			5.8	10-04	5.7	10-05	6.2	10-06	Cont.	Cont.	TBD
Technology Applications	MIPR	DOE / NM	18.9			1.0	10-04	1.0	10-05	1.0	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	7.1			4.0	10-04	5.4	10-05	4.2	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	ITT / CO	2.2			1.8	10-04	1.8	10-05	1.9	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	143.2			13.4	10-04	18.0	02-06	17.9	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	LMMSC/ CA	6.8			17.7	10-04	16.2	12-05	14.6	10-06	Cont.	Cont.	TBD
Technology Applications	WR	NAWC/CA	0.8			2.1	10-04	0.4	10-05	0.4	10-06	Cont.	Cont.	TBD
Technology Applications	WR	NSWC / VA	0.2			1.0	10-04	0.8	10-05	0.4	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	CSDL / MA	2.2			5.2	10-04	3.5	02-06	5.3	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	HI/FL	5.6			6.2	10-04	11.9	10-05	10.1	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	NGMS/CA	1.0			1.5	10-04	0.0	10-05	0.0	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	BAE/MD	1.3			0.5	10-04	0.0	11-05	0.0	10-06	Cont.	Cont.	TBD
Technology Applications	SS - CPFF	INTERSIL	0.0			1.5	10-04	2.0	10-05	2.0	10-06	Cont.	Cont.	TBD
Technology Applications	VARIOUS	VARIOUS	0.8			2.6	10-04	6.5	10-05	3.5	10-06	Cont.	Cont.	TBD
Subtotal Product Development			306.3			77.1		85.7		81.2				

Remarks:

Total Cost			306.3	0.0		77.1		85.7		81.2		Cont.	Cont.	

Remarks:

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Enhanced Special Weapon J3158</b>

COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost J3158 Enhanced Special Wpns				<b>43.1</b>	<b>2.9</b>	<b>2.9</b>	<b>2.9</b>	
RDT&E Articles Qty								

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

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 and waterside requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Enhanced Special Weapons J3158</b>	

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

	FY 05	FY 06	FY 07
Project Cost J3158 Enhanced Special Wpns	0.0	0.0	35.2
SSBN Escort Mission			

(U) FY 2007 PLAN

(\$35.2) Enhanced Special Weapons/SSBN Escort Mission . Full obligation is projected by the 3rd quarter of the fiscal year.

FY 2007 efforts include:

- (U) Research and study leading to new or improved technologies in both active and passive protection systems to be used in the safeguarding of Navy's nuclear assets.
- (U) Technology evaluations and marinization studies of a palletized protection system, capable of reliable operations including detection, characterization and response in a marine environment.
- (U) Development and test of a prototype system. The prototype will consist of two independent palletized units operating together to properly demonstrate "system-level" capabilities and effectiveness in a hostile scenario.

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Enhanced Special Weapons J3158</b>	

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

	FY 05	FY 06	FY 07
Project Cost J3158 Enhanced Special Wpns	0.0	0.0	7.9
Nuclear Weapons Security			

(U) FY 2007 PLAN

(U) (\$7.9) Enhanced Special Weapons / Nuclear Weapons Security program. Full obligation is projected by the 3rd quarter of the first year.

FY 2007 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) Remotely Operated Weapons Technologies: This task is directed to enhancing the current ROWs technology that uses direct copper connection and modifies it to a network for Navy applications. In addition, new features (i.e. target tracking) for added capabilities will be researched and prototyped.

(U) Land Water Interface Sensors: This effort includes research into existing sensor technologies to improve capabilities in areas where current sonars and land based sensors capabilities could be improved. Initial findings are expected to be sufficient to warrant development and test of prototype.

(U) Technology Reviews: This tasks involves reviews and assessments of technologies and advanced concepts for applicability or potential adaptation to protective measures required for safeguard of nuclear assets.

(U) Access Doors: This task explores developing new concepts, technologies and designs for doors and closures protecting nuclear assets.

(U) Final Denial Technologies: This task explores concept weapons, microwaves, acoustic devices, etc. for application to denial requirements related to protection of nuclear assets.

(U) Smart Sensors: This task researches new technologies and concepts for detecting explosives or explosive devices from greater distances than currently available.

(U) Research and study leading to new or improved technologies in both active and passive protection systems to be used in the safeguarding of Navy's nuclear assets.



EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>January 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	PROJECT NUMBER AND NAME <b>Enhanced Special Weapons J3158</b>	

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

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Complete</u>	<u>Cost</u>
<b><u>Nuclear Weapons Security</u></b>									
MILCON (CNI)	51.6	91.6	48.2	59.9	101.5	114.0	114.4	continuing	continuing
OPN BA 7/812800/PE 0208147N	9.5	66.1	22.0	51.1	60.9	29.8	26.4	continuing	continuing
O&MN BA 1/1D2D/PE 0101221N	41.0	68.0	87.4	77.4	91.7	80.7	83.3	continuing	continuing
<b><u>Transit/Escort</u></b>									
OPN BA1/1210/PE 0204228N	0	44.6	20.9	30.8	0.0	53.0	66.5	continuing	continuing
OPN BA1/0950/PE 0101228N	0	0.0	0.0	37.0	0.0	0.0	0.0	Complete	37.0
WPN BA4/4217/PE 0101228N	0	5.2	0.0	0.0	70.0	14.1	0.0	Complete	89.3
OMN BA1/1D2D/0101221N	0	19.2	63.7	73.4	86.9	87.2	85.6	continuing	continuing

**D. (U) Acquisition Strategy:**

Full and open competition

**E. (U) Major Performers:**

- TBD - 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.

Exhibit R-3 Cost Analysis										DATE: <b>January 2006</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>				PROGRAM ELEMENT <b>PE 0101221N Strategic Sub &amp; Wpns Sys Spt</b>				PROJECT NUMBER AND NAME <b>Enhanced Special Weapons J3158</b>						

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Val of Contract
<u>Support &amp; Management</u>														
Enhanced Special Weapons	CPFF	TBD	0.0	0.0	N/A	0.0	N/A	0.0	N/A	35.2	10-06	Cont.	Cont.	TBD
Enhanced Special Weapons	WR	NFESC/CA	0.0	0.0	N/A	0.0	N/A	0.0	N/A	3.0	10-06	Cont.	Cont.	TBD
Enhanced Special Weapons	MIPR	DOE/NM	0.0	0.0	N/A	0.0	N/A	0.0	N/A	2.0	10-06	Cont.	Cont.	TBD
Enhanced Special Weapons	CPFF	APL/MD	0.0	0.0	N/A	0.0	N/A	0.0	N/A	1.1	10-06	Cont.	Cont.	TBD
Enhanced Special Weapons	VARIOUS	VARIOUS	0.0	0.0	N/A	0.0	N/A	0.0	N/A	1.8	10-06	Cont.	Cont.	TBD
Subtotal Product Development			0.0	0.0		0.0		0.0		43.1				

Remarks:

Total Cost			0.0	0.0		0.0		0.0		43.1		Cont.	Cont.	

Remarks:

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EXHIBIT R-2, RDT&E Project Justification						DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0101226N / Sub Acoustic Warfare Development</b>				PROJECT NUMBER AND NAME 1265 Submarine Defensive Warfare Systems			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Cost to Complete
Total PE Cost	11.232	9.399	2.131	4.280	7.576	7.782	7.946	CONT.	CONT.
1265 Submarine Defense Warfare	11.232	8.399	2.131	4.280	7.576	7.782	7.946	CONT.	CONT.
Issue 9999 - Congressional Add	0.000	1.000	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
RDT&E Articles Qty									
<p><b>Defense Emergency Responses Funds (DERF): Not Applicable</b></p> <p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all classes of US submarines. Acoustic Intercept consist of developing a new acoustic sensor, the Sparsely Populated Volumetric Array (SPVA), that will improve the performance of acoustic intercept systems and will provide a ranging capability for submarines through Acoustic Rapid COTS Insertion (ARCI) and Advanced Process Build (APB) software improvements. Littoral Warfare Weapon (LWW) will enable engagement of air threats and potentially small boats through adaptation of an existing air-to-air missile for submarine launch. Common Very Lightweight Torpedo (CVLWT) (ATT/CRAW) will conduct a dynamic launch study to determine physical capability of the All-Up-Round (AUR), as designed for Surface Ship Torpedo Defense application, to survive storage and launch environments for the CSA MK 2 Countermeasure Launcher. Next Generation Countermeasure (NGCM) efforts entails simulation and effectiveness analysis of new technologies from Future Naval Capability (FNC) and SBIR efforts at the Weapons Analysis Facility (WAF). The WAF analysis provides the US Navy with robust testing of new hardware and software within a detailed representation of complex acoustic environments.</p> <p>FY06 Congressional Add to continue the development of the Mobile Acoustic Countermeasure Device (MACD).</p>									

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101226N / Sub Acoustic Warfare Development</b>	PROJECT NUMBER AND NAME 1265 Submarine Defensive Warfare Systems	
<b>B. Accomplishments/Planned Program</b>			
<b>Acoustic Intercept</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.955	0.000	0.000
RDT&E Articles Quantity			
FY05 - Participated in APB 05 Sea-Test.			
<b>WAF Analysis</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.473	1.500	1.500
RDT&E Articles Quantity			
FY 05-07 - Continued to conduct countermeasure proofing and effectiveness analysis for designated torpedo at Weapons Analysis Facility (WAF) .			
<b>NGCM</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.239	4.899	0.631
RDT&E Articles Quantity			
FY05-Began transition of Future Naval Capability (FNC) technologies into existing fleet countermeasures. FY06-07 - Continue transitioning of Future Naval Capability (FNC) technologies into existing fleet countermeasures.			
<b>CVLWT (CRAW/ATT)</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.565	2.000	0.000
RDT&E Articles Quantity			
FY05 - Conducted a dynamic study on submarine launch design. FY06 - Analyze data from study to address constraints of the submarine launched ATT design and assess hardening ATT for Sub launch applications.			
<b>LWW</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.000	0.000	0.000
RDT&E Articles Quantity			
FY05- Congressional Plus-Up Add to continue seeker characterization study and conduct land based demonstration of the AIM-9X Missile.			

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101226N / Sub Acoustic Warfare Development</b>	PROJECT NUMBER AND NAME 1265 Submarine Defensive Warfare Systems

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 Pres Controls	11.322	8.527	2.164
FY 2007 Pres Controls	11.232	8.399	2.131
Total Adjustments	(0.090)	(0.128)	(0.033)

Summary of Adjustments:			
Contract Support Reduction	0.000	0.000	(0.015)
Pay Rates	0.000	0.000	(0.028)
SBIR	(0.084)	0.000	0.000
Nuclear Physical Security	0.003	0.000	0.000
Inflation	0.000	0.000	0.010
Recissions	0.000	0.128	0.000
Miscellaneous Reduction	(0.009)	0.000	0.000
Subtotal	(0.090)	0.128	(0.033)

Schedule:  
Not Applicable

Technical:  
Not Applicable

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0101226N / Sub Acoustic Warfare Development</b>			PROJECT NUMBER AND NAME 1265 Submarine Defensive Warfare Systems		
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>							
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
OPN - 221000/221005 Submarine Acoustic Warfare Systems	20.713	25.470	20.227	16.890	20.833	21.246	21.587
 <b>E. ACQUISITION STRATEGY: *</b>							
See Attached Schedule							
 <b>F. MAJOR PERFORMERS: **</b>							
See Attached R-3							

R-1 SHOPPING LIST - Item No. 167

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N /BA-7</b>		<b>0101226N / Sub Acoustic Warfare Development</b>			<b>1265 Submarine Defensive Warfare Systems</b>							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY04 and PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WAF Analysis	WX	NUWC Newport, RI	3.508	1.473	10/04	1.500	02/06	1.500	12/06	CONT.	CONT.	
SPVA System Engineering	CPFF	AAC Ronkonkoma, NY	0.900	0.955	12/04	0.000		0.000		CONT.	CONT.	
NGCM System Engineering	WX	NUWC Newport, RI	0.000	4.624	12/04	4.299	02/06	0.506	01/07	CONT.	CONT.	
NGCM System Engineering	CPFF	System Planning and Analysis, Arlington, VA	0.000	0.429	07/05	0.300	03/06	0.000		CONT.	CONT.	
LWW	WX	NUWC Newport, RI	0.429	0.300	04/05	0.000		0.000		CONT.	CONT.	
LWW	CPFF	Raytheon Middleton, RI	0.656	2.159	05/05	0.000		0.000		CONT.	CONT.	
LWW	MP	PEO Missiles & Space, Redstone Arsenal, AL	0.000	0.359	08/06	0.000		0.000		CONT.	CONT.	
LWW	WX	NAWCW, Point Mugu, CA	0.000	0.027	04/05	0.000		0.000		CONT.	CONT.	
LWW	MP	Edwards AFB, Edwards, CA	0.000	0.018	10/06	0.000		0.000		CONT.	CONT.	
LWW	CPFF	Lockheed Martin, Manassas, VA	1.800	0.000		0.000		0.000		CONT.	CONT.	
CVLWT (CRAW/ATT)	FFP	PSU State College, PA	0.000	0.100	02/05	1.800	02/06	0.000		CONT.	CONT.	
CVLWT (CRAW/ATT)	WX	NUWC Newport, RI	0.000	0.225	12/04	0.100	02/06	0.000		CONT.	CONT.	
CVLWT (CRAW/ATT)	WX	NSWC Crane, IA	0.000	0.240	12/04	0.100	02/06	0.000		CONT.	CONT.	
Subtotal Product Development			7.293	10.909		8.099		2.006		CONT.	CONT.	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Miscellaneous											0.000	
Subtotal Support			0.000	0.000		0.000		0.000			0.000	

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








CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
<b>RDTE&amp;E, N /BA-7</b>			<b>0101226N / Sub Acoustic Warfare Development</b>				1265 Submarine Defensive Warfare Systems					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	C/CPFF	EG&G Gaithersburg, MD	0.400	0.273	07/05	0.250	12/05	0.100	11/06	CONT.	CONT.	
Travel		PMS415	0.200	0.050	11/04	0.050	11/05	0.025	11/06	CONT.	CONT.	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.600	0.323		0.300		0.125			0.000	
Remarks:												
Total Cost			7.893	11.232		8.399		2.131			0.000	
Remarks:												




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**CLASSIFICATION:**

EXHIBIT R-4, SCHEDULE PROFILE (page 1)	DATE: <b>February 2006</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-4</b>	PROJECT NUMBER AND NAME <b>1265 Submarine Defensive Warfare Systems</b>							
	<b>FY 05</b>	<b>FY 06</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>	<b>FY 11</b>	
ACOUSTIC INTERCEPT IMPROVEMENT INITIATIVE SPVA	<b>SENSOR DEVELOPMENT</b>							
	 At-Sea Tests (TACDEVEX)							
	Transition Phase							
WEAPONS ANALYSIS FACILITY (WAF)	<b>CM Effectiveness / WAF Threat Vulnerability</b>							
COMMON VERY LIGHTWEIGHT TORPEDO (CVLWT) (CRAW/ ATT)								
	Conduct Study / Complete Analysis							
TORPEDO DEFENSE WORKING GROUP (TDWG) / NEXT GENERATION COUNTERMEASURE (NGCM)	 Signal Generator Band  Tactical/ Adaptive Proc. (SACM)  Single Crystal Torpedo Freq.	 Single Crystal Sonar Freq.  Full Duplex Mobility	 Group Behavior  Classification Table  RF Up-Link	 ACCOMS  Fire Through Friendly Fire  MS B	Continue Technology Insert			

R-1 SHOPPING LIST - Item No. 167

 ONR Technology Inserts

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101226N / Sub Acoustic Warfare Developme</b>	PROJECT NUMBER AND NAME 9999 Congressional Plus-Up: 9790N
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**CONGRESSIONAL PLUS-UPS:**

	FY 06		
9790N			
Mobile Acoustic Countermeasure	1.000		

FY06- Congressional Plus-Up Add to continue the development of the Mobile Acoustic Countermeasures Device (MACD) that will be deployed from a submarine or surface ship in response to an in-bound torpedo threat.



R-1 SHOPPING LIST - Item No. 167

APPROPRIATION/BUDGET ACTIVITY	BA 7					R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0101402N, NAVY STRATEGIC COMMUNICATIONS		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	29.046	35.067	37.464	38.833	33.467	42.021	16.309	
0793 E-6 SERVICE LIFE ASSESSMENT PROGRAM	.868	3.854						
3002 NAVY STRATEGIC COMMUNICATIONS BLOCK I	28.178	27.113	37.464	38.833	33.467	42.021	16.309	
9999 CONGRESSIONAL ADD		4.100						

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

(0793) A Service Life Assessment of selected critical components is being performed on the E-6B. The original E-6A service life of this airframe was 27,000 hours based on a prescribed weight and expected operational usage. Current E-6B weight and operational usage exceed those original values and lessen, by some unknown value, the original 27,000 hours airframe service life. SLAP is a two- phase program. Phase 1 is conducting a general study to define the critical locations using data gathered from the fleet and previous test data. Phase 1A will use data gathered during Phase 1 to develop a finite element model. Phase 2 will conduct the detailed analyses of the critical locations. The contractor will analyze fleet aircraft and review onboard recorder data in order to generate an updated loads spectrum. The contractor will update the external/internal loads analysis associated with the updated loads spectrum and operational usage data. Utilizing the data from the first two steps, the contractor will update the existing E-6 Durability and Damage Tolerance Assessments. This data will then allow the contractor to update the Reliability-Centered Maintenance (RCM) analysis, and optimize the E-6 Maintenance Plans. The contractor will perform preliminary high level trade studies of potential modifications to increase the service life.

(3002) The E-6B Block I program corrects Airborne National Command Post program FOT&E 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 consists of the design, development, integration, and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS)/Intercommunications System (ICS), Mission Computer System (MCS), and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block I project also incorporates a Multi-level Security (MLS) Open Systems Architecture (OSA), and adds improved operator workstations throughout the aircraft which, in addition to reducing workload and improving system interoperability, provides a foundation for future evolutionary upgrades. Other modifications include: enhance cooling capabilities to support the additional systems in the MLS OSA, and the Internet Protocol (IP) upgrade effort, which increases communications bandwidth to 45 megabytes per second to support battlestaff command and control and first responder operations.

(9999) CONGRESSIONAL ADD: The E-6B Aircraft Block I Mod program: APU/ECS upgrade

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>					PROJECT NUMBER AND NAME 0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM	
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COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0793 E-6 SERVICE LIFE ASSESSMENT PROGRAM	.868	3.854					
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(0793) A Service Life Assessment of selected critical components is being performed on the E-6B. The original service life of this airframe was 27,000 hours based on a prescribed weight and expected operational usage. Current weight and operational usage exceed those original values and lessen, by some unknown value, the original 27,000 hour airframe service life. SLAP is a two-phase program. Phase 1 is conducting a general study to define the critical locations using data gathered from the fleet and previous test data. Phase 1A will use data gathered during Phase 1 to develop a finite element model. Phase 2 will conduct the detailed analyses of the critical locations. The contractor will analyze fleet aircraft and review onboard recorder data in order to generate an updated loads spectrum. The contractor will update the external/internal loads analysis associated with the updated loads spectrum and operational usage data. Utilizing the data from the first two steps, the contractor will update the existing E-6 Durability and Damage Tolerance Assessments. This data will then allow the contractor to update the Reliability-Centered Maintenance (RCM) analysis, and optimize the E-6 Maintenance Plans. The contractor will perform preliminary high level trade studies of potential modifications to increase the service life.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME 0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.868	3.854		
RDT&E Articles Qty				

Funding supports the E-6 Service Life Assessment Program, which includes the following efforts: assemble and deliver GFI; assist contractor in developing critical location selection criteria; develop finite element model; perform RCM Analysis; assess scheduled maintenance impacts; perform supportability analysis; attend technical review meetings; review and correct CDRLs; determine the load-to-strain/stress relationships for each critical location; generate a service spectra and calculate critical location fatigue lives that 85 percent of the fleet should exceed; perform damage tolerance analysis to determine critical location inspection techniques and intervals; evaluate life enhancement potential for life-critical locations; modify the LOOPIN fatigue damage algorithms to accept available individual aircraft data (3M, NAVAIR form 13920/1, Structural Data Recording Set (SDRS), and structural configuration) to calculate individual aircraft fatigue life expended (FLE) values for all critical locations; validate SDRS for baseline individual aircraft FLE values; develop damage tolerance algorithms to accept available individual aircraft data (3M, NAVAIR form 13920/1, Structural Data Recording Set (SDRS), and structural configuration) to calculate individual aircraft crack size (growth) values for all critical locations.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME 0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.192	3.913	
Current President's Budget:	0.868	3.854	
Total Adjustments	-0.324	-0.059	
Summary of Adjustments			
Congressional Reductions		-0.041	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.058		
Congressional Increases			
Economic Assumptions		-0.018	
Miscellaneous Adjustments	-0.266		
Subtotal	-0.324	-0.059	0.000

Schedule:

Delays in the Phase 1 contract award resulted in Phase 2 delays due to contract renegotiations. Phase 2 must be complete before Milestone C can be reached, so MSC has been moved from 3Q FY06 to 4Q FY07.

Technical:

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
056400 E-6 A/B Series	19.548	11.079	99.184	149.598	142.806	107.567	107.968	153.132	790.882

E. ACQUISITION STRATEGY:

SLAP is a sole source program due to the proprietary nature of the data needed to complete the required studies and analyses. Each phase of SLAP will be awarded a separate cost-reimbursable delivery order under a Basic Ordering Agreement (BOA) with Boeing.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /		0101402N, NAVY STRATEGIC COMMUNICATIONS				0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
SUBTOTAL PRODUCT DEVELOPMENT												
Remarks:												
SUPPORT												
Studies & Analyses	SS-CPFF	THE BOEING COMPANY, WICHITA, KS	4.062			2.827	3/1/2006				6.889	6.889
SUBTOTAL SUPPORT												
Remarks:												
TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												
Remarks:												
MANAGEMENT												
Contractor Engineering Support	RX	TITAN CORPORATION, MARLTON, NJ				.075	10/15/2005				.075	.075
Government Eng Sup	VARIOUS	VARIOUS	1.509	.864	VARIOUS	.924	VARIOUS				3.297	
Program Management Support	RX	VARIOUS	.035			.023	10/15/2005				.058	
Travel	VARIOUS	VARIOUS	.003	.004	VARIOUS	.005	VARIOUS				.012	
SUBTOTAL MANAGEMENT												
Remarks:												
Total Cost			5.609	.868		3.854					10.331	
Remarks:												

CLASSIFICATION:																																
EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY																								PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
RDT&E, N / BA-7																								0101402N, NAVY STRATEGIC COMMUNICATIONS				0793, E-6 SERVICE LIFE ASSESSMENT PROGRAM				
Fiscal Year	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contract Award (Phase 1)		▲			Contract Award (Phase 1)																											
SLAP Phase 1 - Load and Stress Analysis and Critical Area Selection					████████████████████				Phase 1																							
Contract Award (Phase 1A)			▲		Contract Award (Phase 1A)																											
SLAP Phase 1A - Finite element model					████████████████████				Phase 1A																							
Contract Award (Phase 2)													△				Contract Award (Phase 2)															
SLAP Phase 2 - Detailed Analysis of Critical Areas with SLEP Modification Recommendations																	████████████████████				Phase 2											
Milestone C																																





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		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
H3002 NAVY STRATEGIC COMMUNICATIONS BLOCK I	28.178	27.113	37.464	38.833	33.467	42.021	16.309		
RDT&E Articles Qty		1	1						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(3002) The E-6B Block I program corrects Airborne Command Post program FOT&E operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems. Block I consists of the design, development, integration, and testing of the replacements for existing Digital Airborne Intercommunications Switching System (DAISS)/Intercommunications System (ICS), Mission Computer System (MCS), and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block I project also incorporates a Multi-Level Security (MLS) Open Systems Architecture (OSA), and adds improved operator workstations throughout the aircraft which, in addition to reducing workload and improving system interoperability, provides a foundation for future evolutionary upgrades. Other modifications include: enhance cooling capabilities to support the additional systems in the MLS OSA, and the Internet Protocol (IP) upgrade effort, which increases communications bandwidth to 45 megabytes per second to support battlestaff command and control and first responder operations. Block I Systems Integration Lab (SIL) RDT&E articles will be procured and installed to support Contractor Testing (CT), Developmental Testing (DT), and Operational Testing (OT). The SIL comprises a fully functional set of E-6B mission avionics in a lab environment. The purpose of the SIL is to reduce risk and verify the design prior to pre-production aircraft modification. During CT, DT, and OT, the SIL will be used where feasible to reduce total flight test hours and costs. Pre-production aircraft RDT&E articles will be procured to support CT, DT, and OT testing.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME <b>3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I</b>
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	20.541	20.072	27.960	
RDT&E Articles Qty		1	1	

Funding supports all prime contract tasks following Block I contract award including program initiation, engineering research, design development, integration and test of MLS OSA, MCS, DAISS, electrical, cooling, and other subsystems related to Block I; prepare and conduct design reviews (engineering, logistics, training, test) including PDR, CDR, and TRRs; Systems Integration Laboratory modification, preparation for and presentation of the Block I design, contractor developmental test and evaluation planning, and leading to LRIP approval and award. The Internet Protocol (IP) upgrade effort, which increases communications bandwidth to 45 megabytes per second to support battlestaff command and control and first responder operations, will begin in FY07.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.496	2.593	2.761	
RDT&E Articles Qty				

Funding supports engineering, management, trade studies, and studies and analysis contract support services for acquisition planning and development of acquisition documents, schedule development and monitoring, industry conferences, DoD 5000 series document development and revision, engineering and C3 architectural studies and analysis, Systems Integration Lab modification and test, logistics planning, training planning and CDRL reviews for the replacement of DAISS, MCS, UHF C3 System, incorporation of MLS OSA with new servers and operator stations, fixes in ground electrical and cooling capabilities for austere operations. The Internet Protocol (IP) upgrade effort, which increases communications bandwidth to 45 megabytes per second to support battlestaff command and control and first responder operations, will begin in FY07.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.141	4.448	6.743	
RDT&E Articles Qty				

Funding supports acquisition planning, acquisition strategy adjustment, requirements analysis and refinement, industry conferences, DoD 5000 series document development and revision, program management, technical review and oversight, Systems Integration Lab modification and test, contract management activities, preliminary and critical design reviews, CDRL reviews, technical interchange and program management meetings; developmental and operational test and evaluation planning, execution, and reporting in support of government review and design approval for the replacement of DAISS, MCS, UHF C3 System, incorporation of MLS OSA with new servers, operator stations, fixes in ground electrical, and cooling capabilities for austere operations. The Internet Protocol (IP) upgrade effort, which increases communications bandwidth to 45 megabytes per second to support battlestaff command and control and first responder operations, will begin in FY07.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME <b>3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I</b>
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	25.769	27.530	22.739
Current President's Budget:	28.178	27.113	37.464
Total Adjustments	2.409	-0.417	14.725

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.661	-0.292	
Congressional Increases	0.005		
Economic Assumptions		-0.125	0.126
Miscellaneous Adjustments	3.065		14.599
Subtotal	2.409	-0.417	14.725

Schedule:

Schedule revisions are due to a program restructure to descope the Auxiliary Power Unit (APU) upgrades from the program in response to multiple FY04 and FY05 budget marks. Funding reductions in FY04 and FY05 also resulted in a one year slip in the procurement of the test articles.

Technical:

Due to FY04 and FY05 budget marks, the APU upgrades have been descoped from the program.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
056400 E-6 A/B Series	19.548	11.079	99.184	149.598	142.806	107.567	107.968	153.132	790.882

E. ACQUISITION STRATEGY:

Competitively awarded Cost Plus Award Fee (CPAF) development contract and CPAF/Cost Plus Incentive Fee (CPIF) Low Rate Initial Production (LRIP) contract with sole source follow-on Firm Fixed Price (FFP) full rate production contract.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /		0101402N, NAVY STRATEGIC COMMUNICATIONS				3002, NAVY STRATEGIC COMMUNICATIONS BLOCK I						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fee	C-CPAF	BAE SYSTEMS/ROCKWELL COLLINS, CEDAF	.895	2.407	VARIOUS	2.083	VARIOUS	1.876	VARIOUS	2.814	10.075	10.075
Primary Hdw Development	C-CPAF	BAE SYSTEMS/ROCKWELL COLLINS, CEDAF	8.053	18.134	11/1/2004	17.989	11/1/2005	14.076	11/1/2006	10.814	69.066	69.066
Primary Hdw Development	C-CPAF	TBD						12.008	11/1/2006	76.993	89.001	89.001
SUBTOTAL PRODUCT DEVELOPMENT			8.948	20.541		20.072		27.960		90.621	168.142	
Remarks: First award fee (April 2004-Sep 2004) Contractor earned 77.56%. Second award fee (Oct 2004-March 2005) Contractor earned 85%. Third award fee (April 2005-Sep 2005) Contractor earned 85.79%.												
SUPPORT												
Studies & Analyses	RX	VARIOUS	3.071	.237	10/15/2004	.137	10/15/2005	.138	10/15/2006	.548	4.131	
SUBTOTAL SUPPORT			3.071	.237		.137		.138		.548	4.131	
Remarks:												
Developmental Test & Evaluation												
	WX	NAWCAD, PATUXENT RIVER MD								2.000	2.000	
Operational Test & Evaluation												
	WX	NAWCAD, PATUXENT RIVER MD								4.910	4.910	
SUBTOTAL TEST & EVALUATION										6.910	6.910	
Remarks:												
MANAGEMENT												
Contractor Engineering Support	RX	VARIOUS	5.240	1.426	10/15/2004	1.172	10/15/2005	1.124	10/15/2006	3.919	12.881	
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	11.141	3.189	10/15/2004	2.398	10/15/2005	3.746	10/15/2006	13.063	33.537	
Government Engineering Support	WX	VARIOUS	2.758	.800	10/15/2004	1.700	10/15/2005	2.597	10/15/2006	9.144	16.999	
Program Management Support	RX	VARIOUS	5.515	1.833	10/15/2004	1.284	10/15/2005	1.499	10/15/2006	5.225	15.356	
Travel	VARIOUS	VARIOUS	.378	.152	VARIOUS	.350	VARIOUS	.400	VARIOUS	1.200	2.480	
SUBTOTAL MANAGEMENT			25.032	7.400		6.904		9.366		32.551	81.253	
Remarks:												
Total Cost			37.051	28.178		27.113		37.464		130.630	260.436	
Remarks:												

CLASSIFICATION:		EXHIBIT R4, Schedule Profile																												DATE: February 2006																																
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																																						
RDT&E, N / BA-7												0101402N, Navy Strategic Communications												3002, Navy Strategic Communications Block 1																																						
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011																																	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																														
<b>Acquisition Milestones</b>																																																														
Source Selection	■		Source Selection																																																											
Milestone B	▲		MS-B																																																											
Contract Award	▲		Contract Award																																																											
Design Readiness Review																													△																																	
Milestone C																													MS-C																																	
<b>System Development</b>																																																														
Preliminary Design Review																													▲																																	
Critical Design Review																													▲		△		Aircraft CDR																													
System Integration Lab Install																													Systems Integration Lab																																	
Prototype Aircraft Installation																													Prototype Aircraft Installation																																	
<b>Test &amp; Evaluation Milestones</b>																																																														
Contractor/Developmental Test (CT/DT)																													CT/DT																																	
Operational Test (OPEVAL)																													OPEVAL																																	
<b>Production Milestones</b>																																																														
LRIP Phase																													LRIP Phase																																	
Full Rate Production Decision/Start																													△																																	
First Deployment																													★																																	
Full Rate Production																													Full Rate Production																																	
IOC																													★																																	

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<b>CLASSIFICATION:</b>								
Exhibit R-4a, Schedule Detail						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT 0101402N, Navy Strategic Communications				PROJECT NUMBER AND NAME 3002, Navy Strategic Communications Block 1		
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Source Selection	3Q 03 - 2Q04							
Milestone B (MS-B)	2Q							
Contract Award	2Q							
Preliminary Design Review (PDR)		1Q						
Critical Design Review (CDR)		4Q	2Q					
Design Readiness Review			1Q					
Systems Integration Lab			2Q-4Q					
Aircraft Installation				2Q-4Q	1Q			
Contractor/Developmental Testing (CT/DT)					1Q-4Q	1Q		
Milestone C (MS-C)						1Q		
Operational Testing (OPEVAL)						1Q-2Q		
LRIP Phase						2Q-4Q	1Q-4Q	1Q-2Q
Full Rate Production (FRP) Decision/Start							1Q	
First Deployment							4Q	
Full Rate Production (FRP)							1Q-4Q	1Q-4Q FY15
IOC								4Q

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>					PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD	
	<b>BA 7</b>							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Accomplishments / Effort / Sub-total Cost								
9999 CONGRESSIONAL ADD		4.100						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(9999) CONGRESSIONAL ADD



APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		4.100		

The E-6B Aircraft Block I Mod program: APU/ECS

Funding supports the modification of the current Block I contract to resume descoped nonrecurring engineering required to add an Auxiliary Power Unit (APU) and upgrade the Environmental Cooling System (ECS) in the Block I baseline design. This will require a small amount of additional effort on the part of the Government to modify the current specification, statement of work, and Contract data requirements List (CDRLs) and conduct an Engineering Design Review and an Integrated Baseline Review. It is expected that the majority of the funds will be put on the contract with Rockwell Collins and expended by L3 Comm the subcontractor responsible for the APU/ECS integration prior to the APU descopes in FY05.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0101402N, NAVY STRATEGIC COMMUNICATIONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:		0.000	
Current President's Budget:		4.100	
Total Adjustments		<u>4.100</u>	

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		4.100	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	<u>0.000</u>	<u>4.100</u>	<u>0.000</u>

Schedule:

Technical:

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
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E. ACQUISITION STRATEGY:

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

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

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
<b>Total PE</b>	19,516	25,266	39,285	23,295	23,327	23,643	23,969
3126 RAPID TECHNOLOGY TRANSITION (RTT)	14,599	24,266	28,005	23,295	23,327	23,643	23,969
3174 RAPID DEVELOPMENT AND DEPLOYMENT (RDD)	0	0	11,280	0	0	0	0
9999 CONGRESSIONAL PLUS-UPS	4,917	1,000	0	0	0	0	0

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The mission of the Rapid Technology Transition (RTT) program 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 program 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 program is structured to bring transition efforts 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 RTT program is designed to be pro-active in identifying opportunities and to work with resource sponsors, fleet and force users, and Program Managers (PMs) in constructing viable technology transition efforts one at a time.

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT interacts with

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: Feb 2006

Exhibit R-2

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0203761N

PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

the venture capital community and industry. The RTT program coordinates 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.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

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

**B. PROGRAM CHANGE SUMMARY:**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2006 President's Budget Submission	19,493	24,653	24,649
Congressional Action	0	1,000	0
Congressional Undistributed Reductions/Rescissions	-15	-387	0
Execution Adjustments	793	0	0
FY 2005 SBIR	-759	0	0
Program Adjustments	4	0	-1,785
Rapid Development and Deployment	0	0	11,228
Rate Adjustments	0	0	193
Technology Insertion Program Pilot	0	0	5,000
FY 2007 President's Budget Submission	19,516	25,266	39,285

**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 efforts a year that provide for new, innovative, and potentially disruptive technology being inserted into DON acquisition programs. The RTT efforts will have a greater than 80% success rate of insertion and fielding of technology into DON warfighting systems.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

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 Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
3126 RAPID TECHNOLOGY TRANSITION (RTT)	14,599	24,266	28,005	23,295	23,327	23,643	23,969

**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 efforts 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 RTT project is designed to be pro-active in identifying opportunities and to work with resource sponsors, fleet and force users, and program managers in constructing viable technology transition efforts one at a time.

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT interacts with the venture capital community and industry. The RTT project coordinates closely with Program Executive Offices (PEOs) and Program Managers (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.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0203761N      PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)  
PROJECT NUMBER: 3126      PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

## B. ACCOMPLISHMENTS/PLANNED PROGRAM:

### FY 2005 Accomplishments:

- Completed all RTT efforts that began in FY 2004 to include Battle Force E-mail for P-3C; Commercial Bandwidth Optimization for Surface Ships; Secure High Frequency (HF) Internet capability for E-2C; Metal Matrix Composite Shaft Seals for DDG-51; and Automated E-2C Air Tasking Order capability for Joint targeting.
- Continued RTT Venture Capital (VC) efforts such as leads generated through the Naval Research Advisory Committee (NRAC) panel on VC, and utilization of leading commercial (non-defense industry) trends identified by the NRAC VC panel to guide development of FY 2005 RTT transition efforts.
- Initiated transformational efforts for High Voltage Gallium Arsenide MMIC, Erosion Blade Resistant Coatings; Enhanced Battlespace Awareness; Technical Control and Analysis Center; Aviation Weapons Information Management System; Oil Content Monitor; Thermobaric Hellfire; and Open Architecture Radar Designated Decoy Launch.
- Initiated efforts with innovative and disruptive technologies that support accelerating achievements of Sea Power 21 objectives.

### FY 2006 Plans:

- Complete the following FY 2005 efforts: Erosion Blade Resistant Coatings; Enhanced Battlespace Awareness; Technical Control and Analysis Center; Aviation Weapons Information Management System; Oil Content Monitor; Thermobaric Hellfire; and Open Architecture Radar Designated Decoy Launch.
- Continue High Voltage Gallium Arsenide MMIC effort.
- Initiate J-IED efforts as approved by the Joint-Service committee.
- Initiate 5-8 new transition efforts for the Global War on Terrorism, FORCEnet, and other emergent needs.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0203761N      PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)  
PROJECT NUMBER: 3126      PROJECT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)

## **FY 2007 Plans:**

- Complete all efforts that began in FY 2006.
- Initiate 5-8 new technology transition efforts.

## **C. OTHER PROGRAM FUNDING SUMMARY:**

NAVY RELATED RDT&E: All technology investments in DON.

NON-NAVY RELATED RDT&E: All technology investments outside DON.

## **D. ACQUISITION STRATEGY:**

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

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0203761N PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)  
PROJECT NUMBER: 3174 PROJECT TITLE: RAPID DEVELOPMENT AND DEPLOYMENT (RDD)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
3174 RAPID DEVELOPMENT AND DEPLOYMENT (RDD)	0	0	11,280	0	0	0	0

**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 needs in the Global War on Terrorism (GWOT). The RDD process applies when existing Department of the Navy (DON) processes cannot meet urgent operational needs. GWOT has 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 2005	FY 2006	FY 2007
RDD	0	0	11,280

RDD is a new start in FY 2007.

**FY 2007 Plans:**

Initiate multiple projects within RDD for urgent warfighter requirements that meet the RDD selection and execution criteria. RDD will initiate 3 to 6 projects.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0203761N      PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)  
PROJECT NUMBER: 3174            PROJECT TITLE: RAPID DEVELOPMENT AND DEPLOYMENT (RDD)

### C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E: All RDT&E in DON.

### D. ACQUISITION STRATEGY:

For RDD requirements that meet the selection criteria, use the virtual Naval Innovation Laboratory (NaIL) 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 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.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0203761N PROGRAM ELEMENT TITLE: RAPID TECHNOLOGY TRANSITION (RTT)  
PROJECT NUMBER: 9999 PROJECT TITLE: Congressional Plus-Ups

CONGRESSIONAL PLUS-UPS:

	FY 2005	FY 2006
DISRUPTIVE TECHNOLOGY OPPORTUNITIES FUNDS (DOTF)	4,917	0

Initiated a Navy partnership with the Defense Advanced Research Projects Agency (DARPA) on a portfolio of high-risk, high-payoff projects to address pressing naval challenges. Specific areas to be funded are "Wasp" Micro Air Vehicles; Fast Connectivity for Coalitions and Agents; Improving Warfighter Information Intake Under Stress; and Translingual Information Detection, Extraction and Summarization.

	FY 2005	FY 2006
120 MM HIGH EXPLOSIVE PLASTIC AMMUNITION PROGRAM	0	1,000

This effort supports 120MM high explosive plastic ammunition research.

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>					R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS			
		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
COST (\$ in Millions)								
Total PE Cost		121.376	86.089	31.098	15.298	10.095	10.079	10.056
1662 F/A-18 Improvements		35.726	20.954	24.708	12.374	10.095	10.079	10.056
2065 F/A-18 RADAR Upgrade		84.068	56.435	6.390	2.924			
9999 Congressional Adds		1.583	8.700					

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

The F/A-18 is capable of using external equipment to perform either fighter or attack missions. The capabilities of the F/A-18 weapon system can be upgraded to accommodate and incorporate new or enhanced weapons as well as advances in technology to respond effectively to emerging future threats. Continued development capability is required to successfully optimize new F/A-18 weapon system capabilities in the Fleet and to ensure interoperability in a network centric environment. Additionally, continued improvements in reliability and maintainability are necessary to ensure maximum benefit is achieved through reduced cost of ownership and to provide enhanced availability.

**F/A-18 Improvements:** The F/A-18 is a multi-mission strike fighter aircraft that is used in both fighter and attack roles through selected use of external equipment (fuel tanks, targeting/navigation, Advance Targeting Forward Looking Infrared (ATFLIR) pods, and various bomb/missile launching racks). Additional capabilities are required for interoperability in a network-centric operational 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 avionics including the Joint Helmet Mounted Cueing System (JHMCS), conversion of the System Configuration Set (SCS) to a Higher Order Language (HOL), development of the F/A-18 E/F Advanced Crew Station (ACS), replacement of Automatic Carrier Landing System (ACLS) in the F/A18, and upgrade of the existing Global Positioning System/Inertial Navigation System in order to meet precision strike/precision approach requirements. Continued hardware/software development is required to successfully optimize fleet F/A-18 weapons systems for interoperability in a network centric operational environment, to include: increased software capabilities, potential new hardware capabilities, upgrading existing hardware, and network centric warfare upgrades. Additionally, a continuing capability is needed to perform technical evaluations/investigative flight testing and provide software based on reported fleet problems.

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY BA-7</b>	R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS	
<p><b>F/A-18 Radar Upgrade:</b> The F/A-18 Radar Upgrade, Active Electronically Scanned Array (AESA) development program, beginning in FY 1999, is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series radar. The AESA 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 significantly increases A/A and A/G detection and tracking ranges. The AESA provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy radar. The AESA is also more affordable than previous radars. Significant savings in operating and support costs can be realized through a five fold increase in reliability over the AN/APG-73 as well as incorporating open architecture and Higher Order Language software. Additionally, savings can be realized by avoiding parts obsolescence redesign costs that will be experienced on the AN/APG-65 and AN/APG-73.</p> <p><b>CONGRESSIONAL ADDS:</b></p> <p><b>Military Rapid Response Command Information System:</b> The Military Rapid Response-Command and Information System (MRRICIS) is a command, control, and communications mobile ground node that will provide enhanced connectivity between Naval TACAIR (F/A-18) weapon platforms and USMC's Expeditionary Warfare ground C2 nodes such as the On-the-Move Network Digital Over Horizon Radio System (CONDOR) and JFCOM's Rapid Attack Information Dissemination Execution Relay (RAIDER). This funding will be used to perform a initial proof-of-concept demonstration , system engineering and analysis on new technologies with the long range goal of establishing test and evaluation facilities in Hawaii. This work will leverage off of joint service facilities to test the Sea Power 21/ForceNet concepts above.</p> <p><b>FIA-18EIF Net Centric Operations Upgrades</b></p>		

R-1 SHOPPING LIST - Item No.170

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>35.726</b>	<b>20.954</b>	<b>24.708</b>	<b>12.374</b>	<b>10.095</b>	<b>10.079</b>	<b>10.056</b>

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

The F/A-18 is a multi-mission strike fighter aircraft that is used in both fighter and attack roles through selected use of external equipment (fuel tanks, targeting/navigation, Advance Targeting Forward Looking Infrared (ATFLIR) pods, and various bomb/missile launching racks). Additional capabilities are required for interoperability in a network-centric operational 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 avionics including the Joint Helmet Mounted Cueing System (JHMCS), conversion of the System Configuration Set (SCS) to a Higher Order Language (HOL), development of the F/A-18 E/F Advanced Crew Station (ACS), replacement of Automatic Carrier Landing System (ACLS) in the F/A18, and upgrade of the existing Global Positioning System/Inertial Navigation System in order to meet precision strike/precision approach requirements. Continued hardware/software development is required to successfully optimize fleet F/A-18 weapons systems for interoperability in a network centric operational environment, to include: increased software capabilities, potential new hardware capabilities, upgrading existing hardware, and network centric warfare upgrades. Additionally, a continuing capability is needed to perform technical evaluations/investigative flight testing and provide software based on reported fleet problems.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.758	2.176	2.635
RDT&E Articles Quantity			

Continue to conduct engineering analysis and develop improvements to existing systems and subsystems for deficiencies identified during development of the aircraft. Provide technical support for the integration of new weapons, systems, and Network Centric Warfare capability. Continue to develop and integrate enhancements in support of Single Integrated Air Picture (SIAP) block 0 ICP TJ00-004 change 2 to incorporate track identification Taxonomy improvements.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	12.182	12.597	18.613
RDT&E Articles Quantity			

Continue to develop and integrate enhancements to the effectiveness, interoperability, and safety of the F/A-18 Weapon System (airframe, avionics, and weapons) and subsystems to include MIDS and ANAV.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	12.141	1.250	
RDT&E Articles Quantity			

Continue and complete development of JHMCS Front Seat and Operational Test. Start and complete development of Aft Seat capability.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements
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**B. Accomplishments/Planned Program (Cont.)**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	6.496		
RDT&E Articles Quantity			

Complete software conversion from Assembly language to Higher Order Language (HOL) to include Software Configuration Set H1E and H2E. Start and complete Validation/Verification (V/V), OT, and OT&E.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.149		
RDT&E Articles Quantity			

Complete Aft Crew Station development, integration, and testing.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.931	
RDT&E Articles Quantity			

Start the development of the LINK4A/ RT-1379A replacement and Depot repair stand-up. The RT-1379A is required for the automatic carrier landing system (ACLS) in the F/A-18.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements

**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				3.460
RDT&E Articles Quantity				

Start of the validation and verification of the Weapon Configurations on F/A- 18E/F aircraft and Top Integration load out list (TILL).

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

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

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	36.887	21.273	14.678
Current BES/President's Budget	35.726	20.954	24.708
Total Adjustments	-1.161	-0.319	10.030
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.464	-0.222	
Congressional Increases			
Economic Assumptions		-0.097	0.175
Miscellaneous Adjustments	-0.697		9.855
Subtotal	-1.161	-0.319	10.030

Schedule:

- MIDS: These schedule changes do not represent any impacts to funding. H2E operational test schedule slipped by one quarter to allow time to fix software discrepancies discovered in developmental testing. This slip in H2E operational test has also delayed MIDS OT&E. SIAP development efforts are tied to the 21X and H4E SCS OFP being developed by the AWL and Boeing. The changes are reflective of the changes in SCS development schedules.

- ANAV program is an ECP, thus LRIP and FRP are incorrect terminology. All references to LRIP and FRP are deleted. EDM deliveries corrected to better represent the actual deliveries, which changed due to sub-component deliveries to the box manufacturer. The aircraft modifications schedule changes were corrected to better represent the staggered approach to the modifications. DT-IIA, DT-IIB and DT-IIC test phases are changed to show an overlap of efforts to take advantage of shared test asset availability. Production Milestone terminology modified to eliminate references to LRIP and FRP.

Technical:

Not Applicable.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements
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**D. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-1 (E/F) Weapons System Cost Line Item 4 F/A-18E/F Hornet (MYP)	2979.309	2822.335	2333.992	2044.012	1802.502	1806.927	1558.971		15348.048
APN-1 (G) Weapons System Cost Line Item 2 EA-18G	8.211	336.661	891.507	1308.289	1627.333	1469.445	1083.602		6725.048
APN-5 Line Item 28 F-18 Series Modification	457.340	420.444	477.366	527.802	551.696	516.594	523.002	1521.802	7232.467

Related RDT&E

(U) P.E. 064269N EA-18 G (FY05-11)

(U) P.E. 0604270N Electronic Warfare Development (FY02-04)

**E. ACQUISITION STRATEGY:**

The F/A-18 Improvements program consists of extensive development projects and integration of avionics systems onto the F/A-18E/F. The major programs within the F/A-18 Improvements project are:

- **ANAV.** ANAV development is provided on a sole source cost plus fixed fee contract on an R&D Basic Ordering Agreement to Boeing. Procurement of production hardware will be made as CFE through the prime contractor.
- **Higher Order Language (HOL).** The conversion of the System Configuration Set software to HOL will be accomplished by the F/A-18 Advanced Weapons Laboratory at China Lake as the designated Software Support Activity for the F/A-18. The design of the software will be accomplished by Boeing under sole source cost type contracts. The contract vehicle is a Technical Direction Letter contract at China Lake. As the Prime contractor for the aircraft, Boeing is the design agent for software of aircraft in production.
- **Advanced Crew Station.** The design and development of the Advanced Crew Station modification is sole source to Boeing as the Prime aircraft contractor.
- **MIDS.** An acquisition developmental effort supported by SPAWAR (PMW-780).
- **JHMCS.** JHMCS development is via a sole source cost plus award fee Joint Air Force contract to Boeing.
- **ACLS.** ACLS development is provided on a sole source cost plus fixed fee contract on an R&D Basic Ordering Agreement to Boeing. Procurement of redesigned/replacement components will be made as GFE through Naval Undersea Warfare Center.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0204136N F/A-18 SQUADRONS			1662 F/A-18 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development PIDS/DCS	SS/CPFF/FFP	MDA-ST LOUIS,MO	90.000								90.000	90.000
Primary Hardware Development ATFLIR	SS/CPFF/AF	MDA-ST LOUIS,MO	166.147								166.147	166.147
AWARD FEE ATFLIR			1.576								1.576	1.576
Primary Hardware Development ANAV	SS/CPFF	MDA-ST LOUIS,MO	13.522	5.193	01/05	5.628	01/06	3.261	01/07	0.175	27.779	27.779
Primary Hardware Development ACS	SS/CPFF	MDA-ST LOUIS, MO	50.301	0.192	12/04						50.493	50.493
Primary Hardware Development JHMCS	MIPR	WPAFB DAYTON, OHIO	45.315	4.094	05/05						49.409	
Primary Hardware Development MISC.	WX	VARIOUS	30.516	0.267	VAR					20.528	51.311	
Primary Hardware Development ACS	SS/CPFF	Triton, MD	2.500								2.500	2.500
Ancillary Hdw Develop ATFLIR	WX	NAWCAD-LAKEHURST NJ	9.201								9.201	
System Engineering	WX	NAWCAD, PAX RIVER, MD	3.792	1.092	12/04						4.884	
Subtotal Product Development			412.870	10.838		5.628		3.261		20.703	453.300	
Remarks: FY99 and prior year award fee earned is 74.7% (ATFLIR)												
Development Support MISC	VARIOUS	VARIOUS	36.792	1.475	12/04	1.459	12/05	0.958	12/06	2.989	43.673	
Software Development	WX	NAWCWD-CHINA LAKE	130.494	14.235	11/04	4.300	11/05	8.149	11/06	4.317	161.495	
Software Development (TDL)	SS/CPFF/TDL	MDA/NAWCWD-CHINA LAK	127.560	4.612	11/04	3.065	11/05	2.777	11/06	0.370	138.384	138.384
Prior Year Costs	Various	Various	2,567.069								2,567.069	
Subtotal Support			2,861.915	20.322		8.824		11.884		7.676	2,910.621	
Remarks: Prior year costs (FY95 & prior) not broken out into separate categories.												

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Exhibit R-2, RD TEN Budget Item Justification  
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDTE&amp;E, N / BA-7</b>			0204136N F/A-18 SQUADRONS				1662 F/A-18 Improvements					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER, MD	51.668	0.794	11/04	3.226	11/05	2.628	11/06	2.000	60.316	
Operational Test & Evaluation	WX	OPTEVFOR, NORFOLK, VA	9.251	2.051	12/04	1.250	12/05	2.198	11/06	1.559	16.309	
Developmental Test & Evaluation	WX	NAWCWD, CHINA LAKE, CA						3.460	11/06		3.460	
Subtotal T&E			60.919	2.845		4.476		8.286		3.559	80.085	
Remarks:												
Program Management Sup	VARIOUS	NAVAIR, PAX RIVER, MD	13.843	0.915	12/04	1.157	12/05	0.547	12/06	8.548	25.010	
Travel	WX	NAVAIR, PAX RIVER, MD	5.229	0.806	VAR	0.869	VAR	0.730	VAR	2.256	9.890	
Subtotal Management			19.072	1.721		2.026		1.277		10.804	34.900	
Remarks:												
Total Cost			3,354.776	35.726		20.954		24.708		42.742	3,478.906	
Remarks:												


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

EXHIBIT R4, Schedule Profile													DATE: <b>February 2006</b>																			
APPROPRIATION/BUDGET / PROGRAM ELEMENT NUMBER AND NAME													PROJECT NUMBER AND NAME																			
<b>RDT&amp;E, N / BA-7</b> 0204136N F/A-18 Squadrons													1662 F/A-18 Improvements																			
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>ACS</b> Acquisition Milestones								IOC 																								
Prototype Phase																																
<b>Test &amp; Evaluation</b> Milestones																																
Development Test	H2E DT				TECH EVAL																											
Operational Test									FOT&E																							
<b>Production Milestones</b>																																

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail				DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0204136N F/A-18 Squadrons			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
Schedule Profile for <b>ACS</b>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FRP DVMC							
First flight Developmental Testing (DT) for ACS Aircraft with H2E.	1Q-3Q						
TECHEVAL	4Q	1Q-2Q					
FOT&E ACS		2Q-4Q					
IOC		4Q					

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>												
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
<b>RDT&amp;E, N / BA-7</b>					0204136N F/A-18 Squadrons										1662 F/A-18 Improvements																	
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>HOL Development Milestones</b>																																
Verification/Validation																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test	<input type="checkbox"/>																															
Fleet Release	H2E <input type="checkbox"/>	Fleet Release <input type="checkbox"/>																														

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Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT 0204136N F/A-18 Squadrons			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
Schedule Profile for <b>HOL</b>		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
H1E								
Follow On Test and Evaluation (FOT&E)								
H2E Requirements Definition								
Development Test (DT)								
Validation & Verification (V&V)								
Operational Test Readiness Review (OTRR)								
Follow On Test and Evaluation (FOT&E)		1Q						
Fleet Release		2Q						

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**Exhibit R-2, RD TEN Budget Item Justification**  
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EXHIBIT R4, Schedule Profile																						DATE: February 2006						
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	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>JHMCS Acquisition Milestones</b>																												
Prototype Phase																												
JHMCS Front Seat Development																												
JHMCS Aft Seat Development																												
Software OFP-19C Delivery OFP-H3E Delivery																												
<b>Test &amp; Evaluation Milestones</b>																												
Development Test																												
Operational Test																												
<b>Production Deliveries</b>																												
LRIP III																												
LRIP IV																												
FRP																												

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Exhibit R-2, RDTE Budget Item Justification

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0204136N F/A-18 Squadrons			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
Schedule Profile for <b>JHMCS</b>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Preliminary Design Review (PDR) AFT Seat							
Critical Design Review (CDR) AFT Seat							
Test Readiness Review (TRR) Aft Seat							
Developmental Testing Aft Seat	1Q-4Q	1Q-2Q					
Operational Testing (OT-IIB) Front Seat							
Development Test (DT) D AFT seat	1Q-2Q						
Development Test (DT) F AFT seat	1Q-2Q						
Software Delivery OFP-19C		1Q					
Follow On Test Evaluation (D Aft Seat)	2Q-4Q						
Follow On Test Evaluation (F Aft Seat)	2Q-4Q						
Software Delivery OFP-H2E+		1Q					
LRIPIV							
Full Rate Production Start							

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EXHIBIT R4, Schedule Profile																DATE: <b>February 2006</b>															
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME															
<b>RDT&amp;E, N / BA-7</b>								0204136N F/A-18 Squadrons								1662 F/A-18 Improvements															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>ANAV Acquisition Milestones</b>								STEP 2 ECP △								IOC △															
Box Development Development								FCA ☆				PCA ☆																			
Aircraft Integration Design Reviews	CDR ▲																														
Integration Test Tape	Design				Flight Test																										
H-4E	Design & Development				Integrated T&E																										
<b>Test &amp; Evaluation Milestones</b>																															
Aircraft Modifications																															
Lab/King Air Box Test																															
Non-AESA Aircraft																															
AESA Aircraft																															
<b>Production Milestones</b>																															
FY06 Procurements (Lot 30 A/C)								170 △ Procurement				Deliveries (42)																			
FY07 Procurements												△ Procurement				Deliveries (42)															
FY08 Procurements																△ Procurement				Deliveries (42)											
FY09 Procurements																				△ Procurement				Deliveries (42)							
FY10 Procurements																								△ Procurement				Deliveries (42)			
Aircraft Deliveries																															

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Exhibit R-2, RDTE Budget Item Justification

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail				DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0204136N F/A-18 Squad	PROJECT NUMBER AND NAME 1662 F/A-18 Improvements					
Schedule Profile for <b>ANAV</b>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Eng Dev Model (EDM) Delivery - Boeing (Lab/Flight Testing)	2Q-4Q	1Q					
System Critical Design Review (CDR)	1Q						
Test Tape Development/Test	1Q-4Q						
Flight Test	4Q	1Q-4Q	1Q-3Q				
H-4E SCS Development/Test	1Q-4Q	1Q-4Q	1Q-3Q				
Aircraft Modification	4Q	1Q, 2Q-3Q					
Lab/King Air Flt Test / Developmental Testing (DT-IIA)	3Q-4Q	1Q-2Q					
DT-IIB		1Q-4Q	1Q				
DT-IIC TECHEVAL		4Q	1Q-3Q				
Functional Configuration Audit (FCA)		3Q					
Physical Configuration Audit (PCA)			1Q				
IOC				4Q			
Box Deliveries			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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**Exhibit R-2, RD TEN Budget Item Justification**  
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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																										DATE: <b>February 2006</b>														
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-7</b>								0204136N F/A-18 Squadrons												1662 F/A-18 Improvements																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
<b>ACLS Acquisition Milestones</b>																	IOC ★																							
Development Phase									Design/Integration																															
<b>Test &amp; Evaluation Milestones</b>																					OTRR △					OPEVAL														
<b>Production Activities</b>																																								
Aircraft Lot 30 Deliveries																	LOT 30 (42)																							
Aircraft Lot 31 Deliveries																									Lot 31 (42)															
Aircraft Lot 32 Deliveries																													Lot 32 (42)											
Aircraft Lot 33 Deliveries																																	Lot 33 (42)							

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>	PROGRAM ELEMENT 0204136N F/A-18 Squadrons			PROJECT NUMBER AND NAME 1662 F/A-18 Improvements			
Schedule Profile, <b>ACLS</b>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Design/Integration		1Q-4Q	1Q				
Operational Test Readiness Review (OTRR)			1Q				
Operational Evaluation (OPEVAL)			2Q-3Q				
IOC				1Q			
Lot-30 Deliveries			4Q	1Q-4Q			
Lot-31 Deliveries				4Q	1Q-4Q		
Lot-32 Deliveries					4Q	1Q-4Q	
Lot-33 Deliveries						4Q	1Q-4Q

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Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 20 of 34)

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R-4a, Schedule Profile																							DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E/BA-7</b>												PROGRAM ELEMENT 0204136N F/A-18 Squadrons								PROJECT NUMBER AND NAME 1662 F/A-18 Improvements								
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>MIDS LVT F/A-18 Milestones</b>																												
MIDS F/A-18 Production Deliveries																												
<b>F/A-18C/D MIDS Integration</b>																												
C/D DT&E																												
C/D OT&E																												
<b>F/A-18 E/F MIDS Integration</b>																												
E/F DT&E																												
E/F OT&E																												
<b>F/A-18 MC SW Development</b>																												
19C Software Configuration Set																												
21C SCS (SIAP Block 0) [C/D]																												
H4E SCS (SIAP Block 0) [E/F]																												
<b>SIAP SOW Tasks</b>																												

R-1 SHOPPING LIST - Item No.170

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Exhibit R-4a, Schedule Detail  
 Exhibit R-2, RDT&E Budget Item Justification  
 (Exhibit R-2, page 21 of 34)



# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail				DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-7 MIDS</b>	0204136N F/A-18 Squadrons			1662 F/A-18 Improvements			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MIDS F/A-18 Production Deliveries	1Q-4Q	1Q-4Q	1Q-4Q				
F/A-18C/D MIDS Integration							
C/D DT&E	1Q-2Q						
C/D OT&E	2Q-4Q						
F/A-18E/F MIDS Integration							
E/F DT&E	1Q-2Q						
E/F OT&E	2Q-4Q						
F/A-18 MC SW Development							
19C SCS	2Q-4Q						
21X SCS (SIAP Block 0) [C/D]							
Requirements	1Q-4Q	1Q-4Q					
Design	4Q	1Q-3Q					
Development		3Q-4Q	1Q				
IT&E			1Q-4Q	1Q-2Q			
H4E SCS (SIAP Block 0) [E/F]							
Requirements	1Q-2Q						
Design	1Q-4Q	1Q					
Development	4Q	1Q-4Q					
IT&E		1Q-4Q	1Q-4Q				
SIAP SOW Tasks	1Q-4Q	1Q-4Q	1Q-4Q				

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# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
2065 RADAR Upgrade		<b>84.068</b>	<b>56.435</b>	<b>6.390</b>	<b>2.924</b>			

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

The F/A-18 Radar Upgrade, Active Electronically Scanned Array (AESA) development program began in FY 1999. It is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series radar. The AESA corrects operational test deficiencies noted in the AN/APG-73. It provides for multi-target tracking, SAR imagery, SAR 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, significantly increasing A/A and A/G detection and tracking ranges. The AESA provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy radar. The AESA is also more affordable than previous radars. Significant savings in operation and support costs can be realized through a five fold increase in reliability over the AN/APG-73 as well as incorporating open architecture and Higher Order Language software. Additionally, savings can be realized by avoiding parts obsolescence redesign costs that will be experienced on the AN/APG-65 and AN/APG-73.

The \$10M reduction in FY 2006 may result in the inability to complete the Active Electronically Scanned Array (AESA) Anti-Tamper program as scheduled in 2007. This will result in AESA Radars being forward deployed without Full Anti-Tamper Protection, in conflict with OSD policy and the approved AESA AT Plan.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	46.658	29.742	6.390
RDT&E Articles Quantity			

Continue EMD effort and radar cross-section assessments. Osprey Holstein was reduced in FY06. Osprey Holstein began in FY05 and will complete in FY09.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	35.876	20.193	
RDT&E Articles Quantity			

Continue software development, DT, and systems integration efforts.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.534	6.500	
RDT&E Articles Quantity			

AESA OT&E.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	89.434	67.447	6.368
Current BES/President's Budget	84.068	56.435	6.390
Total Adjustments	-5.366	-11.012	0.022
Summary of Adjustments			
Congressional Reductions		-10.000	
Congressional Rescissions			
Congressional Undistributed Reductions	-1.466	-0.705	
Congressional Increases			
Economic Assumptions		-0.307	0.032
Miscellaneous Adjustments	-3.900		-0.010
Subtotal	-5.366	-11.012	0.022

**Schedule:**

A Low Rate Initial Production (LRIP) 4 was added during the Milestone C review in January 2004. Integrated Testing & Evaluation versus Technical Evaluation/Operational Evaluation to increase efficiency and enable CONOPs development earlier. The overall Test and Evaluation schedule will complete in 3rd Quarter 06 as previously scheduled. Added H4E Build 4 with software risk associated. IT&E (Integrated Test & Evaluation) - previously titled "Technical Evaluation (TECHEVAL)" - extends into 3rd Quarter 06  
 IOC - 1st Quarter 07  
 First Deployment - expected 1st Quarter 08

**Technical:**

Software development issues and less than planned flight test performance have added contractual cost and schedule pressure. In order to deliver AESA on schedule to meet Fleet deliveries and meet Key Performance Parameters (KPP), some non-KPP functionality has been deferred into next software load H4.

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# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-7		<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0204136N F/A-18 SQUADRONS			<b>PROJECT NUMBER AND NAME</b> 2065 F/A-18 RADAR Upgrade				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
(1) Line Item 4 F/A-18E/F HORNET (MYP) APN-1	111.831	189.168	178.014	177.558	183.219	195.181	134.200	0.000	1368.566
(2) Line Item 28 F-18 SERIES MOD APN-5 (OSIP 002-07)			5.448	74.614	79.451	116.121	123.267	258.527	657.428
<b>E. ACQUISITION STRATEGY:</b>									
<p>The AESA program employs a two-phase approach with sole source contracts to Boeing, the airframe prime manufacturer. Phase I is a moderate risk reduction phase conducted in FY 1999 and FY 2000. During this phase, Boeing conducted competitive source selection at the radar system subcontract level. A BOA order for RFP development and subcontractor selection was made to conduct this effort. It includes an "845" agreement for prototype development, which includes commercial development/amortization provisions. Conducting the competition early in the program allowed for focused risk reduction and contractor investment. Phase II consisted of a typical System Demonstration program and development contract. The program transitioned to Phase II with a successful Milestone II Decision in FY 2001. When the program entered production in FY03, the "845" agreement allowed the contractor to amortize unreimbursed development costs into the production unit cost. This strategy fully utilizes acquisition reform initiatives such as: early partnering with industry; alpha contracting; leveraging industry investment; optimizing use of Commercial Off-the Shelf software and Non-Developmental Item; Cost as an Independent Variable; and Electronic Data Deliverables.</p>									

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# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-7</b>			0204136N F/A-18 SQUADRONS				2065 F/A-18 RADAR Upgrade					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev (EMD)	SS/CPFF	MDA - St Louis, MO	361.746	46.658	06/05	29.742	11/05	6.390	11/06	2.924	447.460	447.460
GFE	SS/CPFF	MDA - St Louis, MO	3.517								3.517	3.517
Primary Hardware Dev (Pre-EMD)	SS/CPFF	MDA - St Louis, MO	4.900								4.900	4.900
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			370.163	46.658		29.742		6.390		2.924	455.877	
<p>Remarks: The \$10M reduction in FY 2006 may result in the inability to complete the Active Electronically Scanned Array (AESA) Anti-Tamper program as scheduled in 2007. This will result in AESA Radars being forward deployed without Full Anti-Tamper Protection, in conflict with OSD policy and the approved AESA AT Plan.</p>												
Software Development	WX	NAWCWD China Lake, CA	24.444			7.510	10/05				31.954	
Integrated Logistics Support	WX	NAWCAD Pax, MD	0.971			0.169	10/05				1.140	
Integrated Logistics Support	WX	NADEP North Island, CA	0.371								0.371	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			25.786			7.679		0.000		0.000	33.465	
<p>Remarks: The development contract has experienced technical issues, resulting in cost growth. To partially mitigate this cost growth, non-KPP functionality has been deferred. The additional contract cost is being absorbed within the current program funding. Moving from a separate Development Testing/Operational Testing test plan to an Integrated Test and Evaluation plan has reduced Test and Evaluation costs sufficiently to absorb the contract cost growth.</p>												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-7</b>			0204136N F/A-18 SQUADRONS				2065 F/A-18 RADAR Upgrade					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD Pax River, MD	8.417	6.193	10/04	0.679	10/05				15.289	
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, VA	6.740	1.534	10/04	6.500	10/05				14.774	
Developmental Test & Evaluation	WX	NAWCWD China Lake, CA	16.913	29.278	10/04	10.300	10/05				56.491	
Operational Test & Evaluation	MP	EGLIN AFB, FL				1.000	10/05				1.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			32.070	37.005		18.479		0.000		0.000	87.554	
Remarks: Integrated Test and Evaluation has reduced Test and Evaluation costs to enable the program to absorb contract cost growth.												
Program Management Support	Various	NAVAIR Pax River, MD	1.652	0.345	10/04	0.473	10/05				2.470	
Travel	TO	NAVAIR Pax River, MD	0.423	0.060	10/04	0.062	10/05				0.545	
											0.000	
											0.000	
											0.000	
Subtotal Management			2.075	0.405		0.535		0.000		0.000	3.015	
Remarks:												
Total Cost			430.094	84.068		56.435		6.390		2.924	579.911	
Remarks:												

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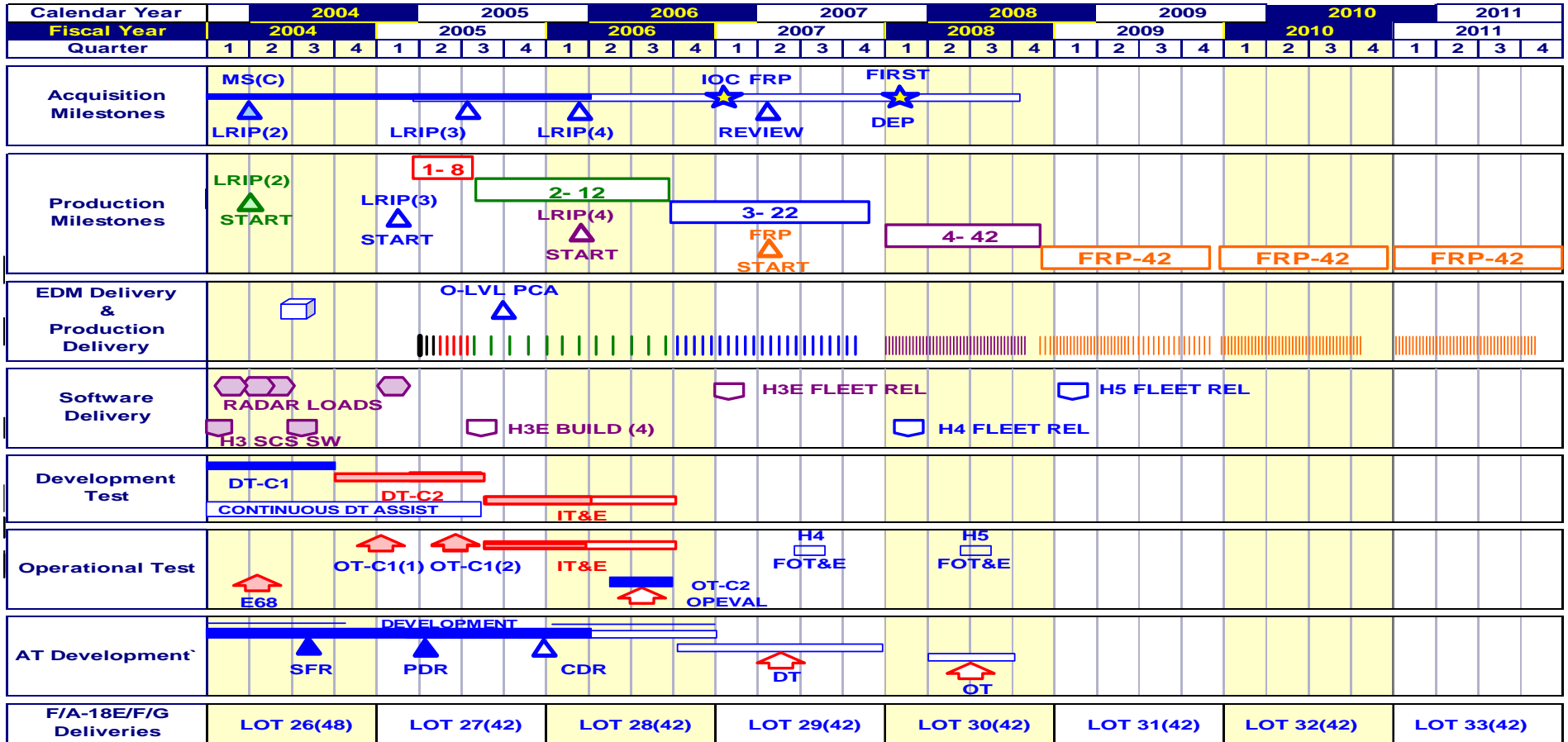
# UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 28 of 34)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile												DATE: <b>February 2006</b>											
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>						PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS						PROJECT NUMBER AND NAME 2065 F/A-18 RADAR Upgrade											



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS			PROJECT NUMBER AND NAME 9999 Congressional Adds			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>1.583</b>	<b>8.700</b>					
RDT&E Articles Qty								

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

The Military Rapid Response-Command and Information System (MRR CIS) is a command, control, and communications mobile ground node that will provide enhanced connectivity between Naval TACAIR (F/A-18) weapon platforms and USMC's Expeditionary Warfare ground C2 nodes such as the On-the-Move Network Digital Over Horizon Radio System (CONDOR) and JFCOM's Rapid Attack Information Dissemination Execution Relay (RAIDER). This funding will be used to perform a initial proof-of-concept demonstration , system engineering and analysis on new technologies with the long range goal of establishing test and evaluation facilities in Hawaii. This work will leverage off of joint service facilities to test the SeaPower 21/ForceNet concepts above.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 9999 Congressional Adds
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**B. Accomplishments/Planned Program**

9614		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.583	1.700	
RDT&E Articles Quantity				

Perform initial proof of concept demonstration and deliver completed analysis. Provide government oversight and engineering support.

1662		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			7.000	
RDT&E Articles Quantity				

FIA-18EIF Net Centric operations upgrades

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

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 9999 Congressional Adds																																																								
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 05</th> <th style="text-align: right;">FY 06</th> <th style="text-align: right;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">1.625</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">1.583</td> <td style="text-align: right;">8.700</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.042</td> <td style="text-align: right; border-top: 1px solid black;">8.700</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Rescissions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Undistributed Reductions</td> </tr> <tr> <td></td> <td style="text-align: right;">-0.042</td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Increases</td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">8.700</td> <td></td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Economic Assumptions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Miscellaneous Adjustments</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-0.042</td> <td style="text-align: right; border-top: 1px solid black;">8.700</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule: Not Applicable.</p> <p style="margin-top: 20px;">Technical: Not Applicable.</p>			Funding:	FY 05	FY 06	FY 07	Previous President's Budget:	1.625	0.000	0.000	Current BES/President's Budget	1.583	8.700	0.000	Total Adjustments	-0.042	8.700	0.000	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions					-0.042			Congressional Increases						8.700		Economic Assumptions				Miscellaneous Adjustments				Subtotal	-0.042	8.700	0.000
Funding:	FY 05	FY 06	FY 07																																																							
Previous President's Budget:	1.625	0.000	0.000																																																							
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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME 9999 Congressional Adds
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
NOT APPLICABLE									

**E. ACQUISITION STRATEGY:**

**9614:** The proof of concept demonstration systems engineering and analysis will be performed by IDIQ contract with Anteon, Inc, which will be subcontracting the 95% of the tasking to Hawaiya Technologies, LLC in Hawaii.

**F. MAJOR PERFORMERS:**

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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS		
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	18.255	17.022	1.540	1.577	1.592	1.618	1.658	
0463 E-2C IMPROVEMENTS	5.908	2.222	1.540	1.577	1.592	1.618	1.658	
9999 CONGRESSIONAL ADDS	*12.347	**14.800						

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

E-2 Improvements provide for product improvements and incorporation of innovative 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 of current installed subsystems. For example, the program developed a Mission Computer Upgrade (MCU), applying on-going developments in data processing and target detection, which will relieve current bottlenecks in signal and data processing. It has also provided for experimentation with wideband internet protocol (IP) concepts, to include technologies such as High Frequency 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, airborne Advanced Digital Networking System, and open architected hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities to satisfy evolving operational requirements, e.g., Battle Space Networking, Cooperative Engagement Capability (CEC), Satellite Communications (SATCOMS), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

FY2005-2011: Funding provides for evaluation and demonstration of technology for new emergent systems and subsystems. This initiative allows for data collection and the evaluation of new technologies in the context of emerging missions and requirements including Theater Air and Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, Airborne Battlefield Command and Control (ABC2) and Single Integrated Air Picture (SIAP) as well as parts and system obsolescence. Emphasis will be upon the following areas: participation in exercises to assess capabilities against emerging threats; identify deficiencies, identification of candidate solutions; and ground/airborne demonstrations of the identified technologies.

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N / BA 7		0204152N, E-2 SQUADRONS					0463, E-2C IMPROVEMENTS		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
0463 E-2C IMPROVEMENTS	5.908	2.222	1.540	1.577	1.592	1.618	1.658		
RDT&E Articles Qty									

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

E-2 Improvements provides for product improvements and incorporation of innovative 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 of current installed subsystems. For example, the program developed a Mission Computer Upgrade (MCU), applying on-going developments in data processing and target detection, which will relieve current bottlenecks in signal and data processing. It has also provided for experimentation with wideband internet protocol (IP) concepts, to include technologies such as High Frequency 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, airborne Advanced Digital Networking System, and open architected hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities to satisfy evolving operational requirements, e.g., Battle Space Networking, Cooperative Engagement Capability (CEC), Satellite Communications (SATCOMS), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

FY2005-2011: Funding provides for evaluation and demonstration of technology for new emergent systems and subsystems. This initiative allows for data collection and the evaluation of new technologies in the context of emerging missions and requirements including Theater Air and Missile Defense, Ballistic Missile Defense, littoral warfare, combat identification including specific emitter identification, multi-source integration, Airborne Battlefield Command and Control (ABC2) and Single Integrated Air Picture (SIAP) as well as parts and system obsolescence. Emphasis will be upon the following areas: participation in exercises to assess capabilities against emerging threats; identify deficiencies, identification of candidate solutions; and ground/airborne demonstrations of the identified technologies.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.229			
RDT&E Articles Qty				

Air Operations Decision Support (AODS)  
 Developed software applications to automate the Air Tasking Order (ATO) and Airspace Control Order (ACO) to allow effective Command and Control of the Battlespace in cooperation with Office of Naval Research Knowledge Superiority Assurance Future Naval Capabilities. Conducted full data base development in FY 2005 to allow automated track Identification, and fusion of ATO/ACO information and conduct hardware/software development of automated update technologies for ATO, ACO, Special Instructions, Rules of Engagement, and all database information.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.561	1.119	.761	
RDT&E Articles Qty				

Fund Airborne Battlefield Command and Control (ABC2)  
 Conducted demonstration of High Frequency Secret Internet Protocol Router Network (HF SIPRNet) capability and VRC-99 Joint Tactical Radio System Wideband Networking Waveform Prototype waveforms, TALISMAN SABER and DARPA TTNT experiment. Developed E-2 RAIDER for Digital Communications Suite capability to FA-18 strike aircraft. Funding will be used to conduct demonstrations on E-2 airborne Network Centric Collaborative Targeting (NCCT) capability, IP networking concepts (including Advanced Digital Networking Systems, Tactical Information Services, IP enabled communications systems (such as HF SIPRNET, VRC-99 and TTNT), machine-to-machine interface, open architected computing environment, network applications), and airborne demonstration of advanced mission computer and communications technologies. Participate in the fleet experiments such as TRIDENT WARRIOR and Joint Task Force Exercise.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.184	.200	.200	
RDT&E Articles Qty				

Single Integrated Air Picture (SIAP) Block 0  
 Successfully completed Preliminary Design Review/Critical Design Review and coding of SIAP Block 0 software for implementation and fielding in Systems Configuration Set (SCS)-05. Outyear funding will support testing and fielding of SIAP Block 0 software.



APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS
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	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.934	.903	.579	
RDT&E Articles Qty				

Multi-Source Integration (MSI) Phase II

Developed software applications to facilitate incorporation of new technologies such as MSI in existing E-2 Operational Flight Program (OFP). Produced hardware-in-the-loop data sets, performance measures, and data analysis tools in support of MSI Ph II. Fund software architecture analysis and design for incorporation of diverse applications in the E-2 Weapon System, including MSI, Combat ID, and Distributed Weapons Coordination. Fund all-source data fusion in the E-2 including radar, Identification Friend or Foe (IFF), Electronic Surveillance (ES), Link 16, Link 11, and Cooperative Engagement Capability (CEC). Fund requirements analysis for development of integrated communication system architecture to support advanced sensor networking. Fund Fleet Battle Group interoperability testing and evaluation for the E-2.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	6.000	2.256	1.540
Current President's Budget:	5.908	2.222	1.540
Total Adjustments	-0.092	-0.034	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.047	-0.024	
Congressional Increases	0.001		
Economic Assumptions		-0.010	0.008
Miscellaneous Adjustments	-0.046		-0.008
Subtotal	-0.092	-0.034	0.000

Schedule:

Schedule changes are due to resolution of Software Trouble Reports (STRs) in Software Systems Configuration Set 05 (SCS05).

Technical:

Not Applicable.

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-1/E-2C (LI# 14 & 15)	246.755	245.857	203.572						696.184
APN-5/E-2C (LI# 37)	15.548	13.484	9.087	9.051	8.278	8.467	8.681	54.650	127.246
APN-6/E-2C (LI# 55)	6.530	0.446	0.515						7.491

APN-1/APN-6 funding after FY07 is related to P.E. 0604234N, P.U. 3051, E-2 Advanced Hawkeye.

E. ACQUISITION STRATEGY:

Not Applicable.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
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 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hdw Development	VARIOUS	VARIOUS	8.532	.040	VARIOUS						8.572	
Primary Hdw Development - ABC2	VARIOUS	VARIOUS	.200	.734	VARIOUS	.682	VARIOUS	.361	VARIOUS		1.977	
Primary Hdw Development - MSI	VARIOUS	VARIOUS	1.467	.030	11/04						1.497	
Primary Hdw Development - SIAP	VARIOUS	VARIOUS		.090	04/05						.090	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>10.199</b>	<b>.894</b>		<b>.682</b>		<b>.361</b>			<b>12.136</b>	
Remarks:												
<b>SUPPORT</b>												
Development Support	WX	NAWCWD, CHINA LAKE CA		.284	10/04						.284	
Government Engineering	VARIOUS	NAWCAD, PATUXENT RIVER MD	75.228	.661	10/04	.350	11/05	.200	11/06	Continuing	Continuing	
Government Engineering Support - SIAF	VARIOUS	TBD				.200	01/06	.200	01/07	Continuing	Continuing	
Government Engineering Support - VAR	WX	NAWCAD, PATUXENT RIVER MD	.300	.242	10/04						.542	
<b>SUBTOTAL SUPPORT</b>			<b>75.528</b>	<b>1.187</b>		<b>.550</b>		<b>.400</b>		Continuing	Continuing	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval - ABC2 (Non-FFRDC)	VARIOUS	TBD				.319	11/05				.319	
Dev Test & Eval - AODS (Non-FFRDC)	WX	NAWCAD, PATUXENT RIVER MD		.626	10/04						.626	
Dev Test & Eval - MSI (Non-FFRDC)	VARIOUS	TBD						.180	02/07	Continuing	Continuing	
Dev Test & Eval - VARIOUS	WX	COM OFF COMLANTFLT, NORFOLK VA		.043	11/04						.043	
Dev Test & Eval - VARIOUS	WX	NAWCAD, PATUXENT RIVER MD		2.278	11/04	.341	11/05	.049	11/06	Continuing	Continuing	
<b>SUBTOTAL TEST &amp; EVALUATION</b>				<b>2.947</b>		<b>.660</b>		<b>.229</b>		Continuing	Continuing	
Remarks:												
<b>MANAGEMENT</b>												
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	1.921	.562	11/04	.293	11/05	.500	11/06	Continuing	Continuing	
Program Management Support (Non-FFRDC)	SS-CPFF	ADVANCED INFORMATION ENGINEERING S		.300	11/04						.300	.300
Travel	VARIOUS	NAVAIR, PAXTUXENT RIVER MD	.184	.018	11/04	.037	11/05	.050	11/06	Continuing	Continuing	
<b>SUBTOTAL MANAGEMENT</b>			<b>2.105</b>	<b>.880</b>		<b>.330</b>		<b>.550</b>		Continuing	Continuing	
Remarks:												
<b>Total Cost</b>			<b>87.832</b>	<b>5.908</b>		<b>2.222</b>		<b>1.540</b>		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>										PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS										PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS								
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
MSI PH I																												
AODS																												
ABC2																												
MSI PH II																												
SIAP Bk 0																												
<b>Production Milestones</b>																												

HF SIPRNET Fleet  
Prototype

Talisman Saber

Trident Warrior 05

JEFX 06

JEFX 06 Part 2

Development

FQT

Deploy

Deploy Interim S/W to AHE

Deploy

Deploy

Deploy

JTFX 06

Interim Deploy He2K

Transition to AHE

FQT

Deploy

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>	PROGRAM ELEMENT 0204152N, E-2 SQUADRONS				PROJECT NUMBER AND NAME 0463, E-2C IMPROVEMENTS			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
MSI PH I Deploy		2Q						
AODS FQT	1Q - 4Q							
AODS Deploy		2Q						
AODS Interim S/W to AHE		4Q						
ABC2 Development	1Q - 4Q	1Q - 4Q	1Q - 4Q					
ABC2 HF SIPRNET Fleet Prototype	1Q							
ABC2 Talisman Saber	3Q							
ABC2 Trident Warrior		1Q						
ABC2 Joint Expeditionary Force Exercise (JEFX) 06		4Q						
ABC2 JEFX 06 Part 2			2Q					
MSI PH II FQT	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
MSI PH II Joint Task Force Exercise (JTFX)		3Q						
MSI Ph II Intern Deploy HE2K			1Q					
MSI PH II Transition to AHE				2Q				
SIAP Bik 0	1Q-4Q							
SIAP Bik 0 Deploy HE2K		2Q						

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N / BA 7		0204152N, E-2 SQUADRONS					9999, CONGRESSIONAL ADDS		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
9999 CONGRESSIONAL ADDS	*12.347	**14.800							
RDT&E Articles Qty	Not Applicable								

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

CONGRESSIONAL ADDS.

\*The FY 2005 budget reflects the following Congressional adds: \$2.1M for E-2C Program Support Activity (PSA)/E-2C Hawkeye Propeller Safety and Reliability which has been revised by \$.022 for Congressional Undistributed Adjustments, \$.019 for Small Business Innovation Research (SBIR), and \$.002 for Department of Energy for a final amount of \$2.057M; \$1.7M for Non-Cooperative Combat Identification Capability which has been revised by \$.016 for Congressional Undistributed Adjustments, \$.038 for SBIR, and .001 for Department of Energy for a final amount of \$1.645M; \$5.1M for PMRF Net-Centric Test Bed/Advanced Hawkeye (AHE) Testing which has been revised by \$.046 for Congressional Undistributed Adjustments, \$.116 for SBIR, and \$.004 Department of Energy for a final amount of \$4.934M; \$2.8M for Airborne Data Terminal Set which has been revised by \$.027 for Congressional Undistributed Adjustments, \$.049 for SBIR, and \$.002 for Department of Energy for a final amount of \$2.722M; and \$1.0M for Magneto Rheological Shock Engine Mount which has been revised by \$.010 for Congressional Undistributed Adjustments, and \$.001 for Department of Energy for a final amount of \$.989M.

\*\*The FY 2006 budget reflects the following Congressional adds: \$2.1M for E-2C Program Support Activity (PSA); \$1.3M for Non-Cooperative Combat Identification Capability; \$3.4M for PMRF Net-Centric Test Bed/Advanced Hawkeye (AHE) Testing; \$1.0M for Magneto Rheological Shock Engine Mount; \$2.6M for Airborne Advance Network; \$1.0M for Global Information Grid Middleware Portal; \$3.4M for Pacific Missile Range Facility Makaha Ridge FORCENet Lab.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.057	2.100		
RDT&E Articles Qty				

9418-E2C Program Support Activity-SBIR Phase III

Congressional Add for E-2C Program Support Activity.  
Supported development and testing of Model Driven Software architecture and Publish/Subscribe Middleware for E-2 Hawkeye mission computer.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.645	1.300		
RDT&E Articles Qty				

9419-Non-Cooperative Combat Identification Capability

Congressional Add for E-2C Program Support Activity.  
Supported concept development, system engineering, and system prototyping for an advanced non-cooperative identification system capability.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.934	3.400		
RDT&E Articles Qty				

9420- PMRF Net-Centric Test Bed/Adv Hawkeye Testing

Congressional Add for PMRF Net-Centric Test Bed/Advanced Hawkeye Testing.  
Supported science and technology and advanced technology demonstration initiatives for potential transition to the E-2C Hawkeye program.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS
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	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.722			
RDT&E Articles Qty				

9615-Airborne Data Terminal Set (DTS)

Congressional Add for Airborne Data Terminal Set (DTS).  
Enhanced the Advanced Hawkeye data communications capability.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.989	1.000		
RDT&E Articles Qty				

9616-Magneto Rheological Shock Engine Mount

Congressional Add for Magneto Rheological (MR) Shock Engine Mount.  
Fund research, develop and test an airworthy MR shock mount for the E-2C aircraft.



APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS
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	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		2.600		
RDT&E Articles Qty				

9744-Airborne Advanced Network

Congressional Add for Airborne Advanced Network.  
Develop air-to-air kill chain networking techniques and applications to improve interoperability and level of service.

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

9745-Global Information Grid

Congressional Add for Global Information Grid Middleware Portal.  
Development of a services oriented Architecture to provide network centric enterprise services.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		3.400		
RDT&E Articles Qty				

9746-Pacific Missile Range Facility Pearl Harbor

Congressional Add for Pacific Missile Range Facility Makaha Ridge FORCENet Lab.  
Fund Cooperative Engagement Capability (CEC) like capability for Makaha Ridge to connect to Pearl Harbor CEC network.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204152N, E-2 SQUADRONS</b>	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	12.576	0.000	0.000
Current President's Budget:	12.347	14.800	0.000
Total Adjustments	-0.229	14.800	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.232		
Congressional Increases	0.003	14.800	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.229	14.800	0.000

Schedule:  
Not Applicable.

Technical:  
Not Applicable.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY:  
Not Applicable.

UNCLASSIFIED

<b>CLASSIFICATION:</b>							
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>			R-1 ITEM NOMENCLATURE <b>PE: 0204163N TITLE: FLEET COMMUNICATIONS</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	21.761	32.149	27.189	21.794	15.810	14.472	14.755
0725 Communications Automation	2.249	15.787	15.358	11.028	5.433	4.090	4.125
1083 Shore to Ship Communications	16.235	16.362	11.831	10.766	10.377	10.382	10.630
9999 Congressional Plus Up	3.277	0.000	0.000	0.000	0.000	0.000	0.000
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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 (formerly Naval Modular Automated Communications System/Single Messaging Solution II (NAVMACS/SMSII), Joint Network Management System (JNMS), Automated Digital Network System (ADNS), Naval Global Directory Services, and Tactical Switching Ashore [formerly Shore Infrastructure Modernization (SIM)].</p> <p>ADNS is the method by which Tactical Navy Units (Surface, Subsurface, and Air Deployed Assets) transfer Internet Protocol (IP) Data to the Global Information Grid (GIG). ADNS serves as a "Gateway" to enable Joint and Coalition interoperability for these Tactical assets and ensures GIG connectivity.</p> <p>Tactical Messaging (formerly NAVMACS/SMSII) developed joint/combined individual and organizational message handling for United States Naval ships and submarines, United States Marine Corp (USMC) vans, and selected Military Sealift Command (MSC) and United States Coast Guard (USCG) platforms. Tactical Messaging (NAVMACS II/SMS) develops fleet interfaces to Defense Messaging System (DMS) and legacy ashore messaging systems.</p> <p>Naval Global Directory Service (NGDS): The NGDS will develop a directory services architecture providing enhancements and efficiencies for security, application accessibility, and Naval Identity Management (IdM) that span Naval enterprise-wide operations across the Navy Marine Corps Intranet (NMCI), OCONUS Navy Enterprise Network (ONE-NET), and Naval Afloat Networks/IT-21 network domains. The projected NGDS capabilities include: Authentication to enterprise applications; Support for an enterprise SSO solution; Backbone for federating (sharing) identity data amongst the Naval Domains, afloat environments, and external sources; Storage for Public Key Infrastructure (PKI) material and other credentials; Basic "Locator" services.</p> <p>The NGDS builds upon the initial research, development and deployment of the Navy Marine Corps White Pages, in addition to other requirements such as the Navy Marine Corps Intranet's (NMCI) directory service, Navy Marine Corps Portal (NMCP) directory service and Single Sign On (SSO) initiatives, and the IT-21 Windows 2000 shipboard integrated directory service and supporting Unified Account Management (UAM) product. The projected NGDS capabilities include: Authentication to enterprise applications; Support for an enterprise SSO solution; Domain Naming Service (DNS) for a Naval Enterprise network De-Militarized Zone (DMZ); Backbone for federating (sharing) identity data amongst the Naval Domains, afloat environments, and external sources; Storage for Public Key Infrastructure (PKI) material and other credentials; Basic "Locator" services; Additional advanced directory or identity based functions.</p> <p>NGDS delivers an integrated directory service infrastructure across the Naval enterprise both ashore and afloat by building trusted relationships between people, applications, services, and other resources throughout the network. Once established, NGDS must manage and maintain these relationships regardless of the user's or services location.</p>							

**CLASSIFICATION:**

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-7</b>	R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT
<p>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 Internet Protocol (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. ADNS Increment III will converge all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. In addition, the Increment III architecture will be based on an IPv6 and a "Black Core" 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 Increment III will serve as the Navy Tactical Interface (Gateway) for IP Networking with Transformational Satellite (TSAT), Joint Tactical Radio System (JTRS), High Assurance Internet Protocol Encryptor (HAIPE), Advanced Extremely High Frequency (AEHF), and other Future DoD Transformational C4I Programs.</p> <p>The Tactical Switching Ashore (TSw) Infrastructure Modernization (SIM) 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. Tactical Switching Ashore 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 redundant communications paths, provide secure and available communications, provide dynamic bandwidth management, and reduce costly dependencies on legacy systems. This plan will be designed to increase efficiencies, and reduce manpower and the overall footprint of the Navy's shore sites. 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 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 to fight the War on Terrorism.</p> <p>The Shore to Ship Communications System develops communications systems elements which provide positive command and control of deployed Ship, Submersible, Ballistic, Nuclear (Submarines (SSBNs), Ship, Submersible, Guided Nuclear (Submarines (SSGNs) and attack Ship, Submersible Nuclear (Submarines (SSNs). Provides the communication elements for continuous assessment of the command and control link between Secretary of Defense and missile platforms. Provides the joint system design for Emergency Action Message (EAM) distribution to all nuclear platforms. Provides the tools for strategic command and control planning to deployed SSBNs including shore infrastructure.</p> <p>Low Band Universal Communications System (LBUCS) will provide operational capability, through the Very Low Frequency architecture, to insure system life extension and flexibility of Submarine Broadcast traffic to the submarine in stealth posture. The flexibility includes bandwidth efficiency, ensuring more operational products are delivered to a submarine without risking mast exposure.</p> <p>The shore Submarine Operating Authority (SUBOPAETH) was downsized from six to four nodes. In order to ensure Continuity of Operations (COOP) and ongoing robustness in a reduced architecture, the SUBOPAETH architecture provides for increased commonality among SUBOPAETHs. This ensures robust operation, improved integration between Submarine Operational Control and support communications, and Continuity of Operations in the event of a SUBOPAETH casualty.</p> <p>The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Military SATCOM multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. This project has extremely high visibility within the Department Of Defense (DoD) and United States Congress. The project was moved to Program Executive Office Command, Control, Communication, Computers (PEO C4I) &amp; Space, Program Manager Warfare (PMW) 176 from the United States Air Force starting in FY04 to better meet the requirements, deadlines, and funding priorities established for the project.</p> <p>Congressional plus-up to support development of a Floating Area Network (FAN) plan and architecture enabling a direct Line of Sight (LOS), wireless, TCP/IP network among intra-battle group ships.</p> <p>Congressional plus-up to support development of a portable Cole emergency radio system (MRC-105 Emergency Radio).</p>	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME
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**(U) B. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	22.874	32.694	26.674
FY07 President's Budget Estimate:	21.761	32.149	27.189
Total Adjustments	-1.113	-0.545	0.515

Summary of Adjustments \* Include Issue No. & Cong. Language Sec. if applicable

FORCENet Submarine Broadcast Support			-1.500
FORCENet Realign Tactical Switching Funding			5.000
FORCENet Realign Automated Digital Network			1.600
Contract Support Reduction			-2.301
Shipboard Communications Adjustment			-1.500
NWCF Civpers Efficiencies			-0.102
UHF SATCOM Integrated Waveform OSD			-1.000
Small Business Innovation Research	-0.289		
Nuclear Physical Security (OSD-09)	0.003		
Inflation			0.142
CIVPERS PAY RAISE RATE CHANGE			0.007
Sec. 8026(f): Federally Funded Research		-0.054	
Sec. 8125: Revised Economic Assumptions		-0.149	
Congressional Action 1% Reduction		-0.342	
Department of Energy Transfer	-0.018		
Misc Navy Adjustments	-0.809		0.169
Subtotal	-1.113	-0.545	0.515

(U) Schedule:

CSRR redesignated from Acquisition Category (ACAT) III to ACAT II per Assistant Secretary of the Navy Research, Development and Acquisition (ASN (RD&A) memorandum dated 19 April 2005. CSRR program Milestone C 3rd QTR FY05. TEMP approved April 2005 the proceedings for CSRR milestone C. LBUCS will initiate at Milestone B.

(U) Technical:

Not Applicable.

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<b>CLASSIFICATION:</b> <b>UNCLASSIFIED</b>							
EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PE: 0204163N	TITLE: FLEET TACTICAL DEVELOPMENT			PROJECT NUMBER AND NAME 0725 Communications Automation		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	2.249	15.787	15.358	11.028	5.433	4.090	4.125
RDT&E Articles Qty							
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. Tactical Messaging, formerly The Naval Modular Automated Communications System II (NAVMACS II/Single Messaging Solution (SMS) is the network centric Internet Protocol (IP) solution for the processing, storage, distribution and forwarding of General Service and Defense Messaging System (DMS) organizational messages to the user's desktop throughout the Integrated Shipboard Networks System (ISNS). The Joint Network Management System (JNMS) is a CINC, Commander, Joint Forces (CJF) joint communications planning system with the Department of the Army as the Executive Agent. It is intended to be an automated software system including capabilities for planning and engineering, monitoring, control and reconfigurations, spectrum management and security. 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 Internet Protocol (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. ADNS Increment III will converge all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. In addition, the Increment III architecture will be based on an IPv6 and a "Black Core" 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 Increment III will serve as the Navy Tactical Interface (Gateway) for IP Networking with TSAT, JTRS, HAIPE, AEHF, and other Future DoD Transformational C4I Programs. Global Directory Service (NGDS): Naval Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations. The NGDS will develop a directory services architecture providing enhancements and efficiencies for security, application accessibility, and naval Identity Management (IdM) that span Naval enterprise-wide operations across the Navy Marine Corps Intranet (NMCI), OCONUS Navy Enterprise Network (ONE-NET), and Naval Afloat Networks/IT-21 network domains. The NGDS builds upon the initial research, development and deployment of the Navy Marine Corps White Pages, in addition to other requirements such as the Navy Marine Corps Intranet's (NMCI) directory service, Navy Marine Corps Enterprise Services (NMES) directory service and Single Sign On (SSO) initiatives, and the IT-21 Windows 2000 shipboard integrated directory service. NGDS delivers an integrated directory service infrastructure across the Naval enterprise both ashore and afloat by building trusted relationships between people, applications, services, and other resources throughout the network. Once established, NGDS will manage and maintain these relationships regardless of the user's or services location. Tactical Switching Ashore will support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, network capability.</p>							

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET TACTICAL DEVEL	PROJECT NUMBER AND NAME 0725 Communications Automation

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

	FY 05	FY 06	FY 07
Automated Digital Network System (ADNS)	0.675	6.329	5.060
RDT&E Articles Quantity			

**FY05:** Planned and conducted interoperability and operational testing for ADNS Increment I and Increment II. Developed advanced traffic management and control and Quality of Service (QoS) capabilities. Demonstrated dynamic routing scheme. Continued support of FORCENet demonstrations (Trident Warrior series). Funds provided for the development of the Assured IP Program.

**FY06:** Complete Increment II and IIa Operational Testing. Award contract for system development and demonstration for Increment III. Increment III will provide converged voice, video, and data; increased bandwidth capacity upgrades to allow transfer at 25 and 50 Mbps; conversion to a Black Core Security Backbone using Internet Protocol version 6 capability, and the ability to converge all Surface, Subsurface, and Airborne Units into a Meshed contiguous IP environment. During the System Development and Demonstration phase the contractor will conduct system requirements review and deliver an ADNS Increment III system and subsystem specification.

**FY07:** Continue the system development and demonstration phase of ADNS Increment III. Conduct system Preliminary Design Review. Develop and update system and subsystem design documentation. Procurement of Engineering Demonstration Models (EDM's) to facilitate Industry involvement and open competition.

	FY 05	FY 06	FY 07
Tactical Messaging (NAVMACS)	1.146	1.131	0.000
RDT&E Articles Quantity			

**FY05:** Continued development and test efforts for emerging technology and product upgrades such as COTS SW/HW refresh for all enclaves and USN platforms. Conducted DMS 3.1 Operational Assessment. Continued development of DMS/ISNS co-host for bandwidth advantaged platforms. Supported end to end testing of IP broadcast.

**FY06:** Continue development and test efforts for emerging technology and product upgrades. Initiate development of way-ahead messaging for unit level platforms to include DMS Proxy Solution to allow shipboard messaging consumers to communicate with shore based Automated Message Handling Systems (AMHS). Conduct operational testing for the DMS/ISNS co-host messaging solution.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET TACTICAL DEVEL	PROJECT NUMBER AND NAME 0725 Communications Automation

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

	FY 05	FY 06	FY 07
Naval Global Directory Services	0.428	0.407	0.334
RDT&E Articles Quantity			

**FY05:** Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, and IT-21 environments. Provide developmental engineering support for shore-based identity data sharing/synchronization. Support Navy directed testing efforts.

**FY06:** Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, and IT-21 environments. Provide developmental engineering support for establishment of the Naval Network Identity (NNI) Registry Service to be used to register/issue unique identifiers to all Naval users. Support Navy directory testing efforts.

**FY07:** Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, and IT-21 environments. Provide developmental engineering support for ship-to-shore identity data sharing/synchronization, and continue integration of shore authoritative identity sources

	FY 05	FY 06	FY 07
Tactical Switching (Ashore)		7.920	9.964

**FY06:** Initiate Phase 2A Network Management and Control System (NMS) (Management Capability). Develop an Request for Procurement (RFP) for global integration to, develop Commander Critical Information Requirements (CCIRs), Information Exchange Requirements (IERs) and Reporting constructs supporting the NMS deployment. Additionally select a system integrator to develop a shore communications architecture that will Automate, Remote or Consolidate communications technical control facilities to the extent possible supporting migration of all services to an all IP infrastructure. Identification and integration of interfaces supporting DoD Teleport and the Global Information Grid-Bandwidth Expansion (GIG-BE). The requirement for this architecture is to provide a seamless connection between the shore tactical support infrastructure and the deployed user. In addition, the program will build upon the current COTS NMS capability (situational awareness / monitoring) to develop management and control capabilities. The procurement of the phase 2A Management capability will occur in FY07.

**FY07:** Initiate Phase 2B NMS (Automation Capability). Complete the development of the tactical support architecture effort that began in FY06. Develop and design a plan to eliminate bandwidth limitations within the architecture by; designing redundant communications paths either physical or virtual, provide real time integrated security, enable dynamic bandwidth management, and reduce costly dependencies on legacy systems. In addition, the program will expand the monitoring, management, and control capability developed in FY06/FY07 to fully automate the NMS capability. This new capability requires less manual intervention and will serve as the backbone technology to reduce the Navy communication facilities infrastructure from 4 Fleet Network Operation Centers (NOCs) to 2 Regional Network Operations and Security Centers (RNOSC). Efforts outlined in Phase 2A and 2B provide the foundation for reducing the manpower and facilities which will enable substantial FYDP savings.



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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET TACTICAL DEVEL	PROJECT NUMBER AND NAME 0725 Communications Automation
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**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Complete</u>	<u>To Cost</u>	<u>Total</u>
3050 – Comm Auto - Tactical Messaging	8.869	11.602	4.863	11.704	12.615	12.641	3.982	Continuing	Continuing	
3050 – Comm Auto – ADNS	41.798	23.910	19.354	48.949	39.864	30.746	41.120	Continuing	Continuing	
3050 – Comm Auto – Tactical Switching (Ash)	17.589	23.622	32.230	34.908	34.566	27.815	24.250	Continuing	Continuing	

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

**ADNS:** Evolutionary acquisition approach with overlapping development and implementation phases for defined Increment I, II, and III incremental baselines. Increment I and II will use existing competitively awarded contracts; however, Increment III will be based on a new Contracting Strategy to include the use of innovative contract types that implement changes consistent with acquisition streamlining initiatives. Aggressively leverage 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 (formally NAVMACS):** The Tactical Messaging acquisition approach has evolved according to key technology advances, resulting incremental developmental phases, and the principals of acquisition reform. While initial production units were acquired through competitively awarded vehicles, future contracting will also embrace acquisition streamlining initiatives in addition to maintaining the benefits of competitive, best value contracting.

**-NGDS:** Evolutionary acquisition approach with overlapping development and implementation phases to mitigate technical and financial risks. Integrate rapidly evolving technologies as deemed feasible and acceptable based on security and operational risks. Leverage COTS products and existing Navy/GSA contracts for small-scale implementation if NGDS hardware and software.

**-Tactical Switching Ashore** Evolutionary acquisition approach with overlapping development and implementation phases. Use existing contract vehicles during Phase One implementation of procurement upgrades to existing shore legacy equipment at the major communication centers (NCTAMS PAC, NCTAMS LANT, NCTAMS EURCENT, NCTS Bahrain, and NCTS San Diego) and to include 40+ shore communication facilities (COMSTATIONS, NOCs, Mini-NOCs, and STEP sites). Phase One upgrades serve as an enabler to Phase Two activities. Based upon the future shore communication architecture as defined by the Navy, Phase Two transitions the Navy's 3 NCTAMS and two major 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/DoD Net-Centric environment. Phase 2 will be organized into three 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.

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

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Exhibit R-3 Cost Analysis (page 1)									DATE:			
									<b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE&amp;E, N / BA-7</b>			PE: 0204163N TITLE: FLEET TACTICAL DEVEL			0725 Communications Automation						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC	2.825	0.200	TBD						3.025	
Primary Hardware Development	TBD	TBD				1.000	TBD	1.000	TBD	Continuing	Continuing	
Systems Engineering	WX	SSC	9.176	0.240	Dec-04	1.560	TBD	0.618	TBD	Continuing	Continuing	
Systems Engineering	VAR	VAR	0.468			3.068	TBD	4.253	TBD	Continuing	Continuing	
Systems Engineering	TBD	TBD		0.000		1.502	TBD	0.879	TBD	Continuing	Continuing	
Prime Mission Product	PO	SSC	3.548	0.438	Dec-04	0.386	TBD	0.617	TBD	Continuing	Continuing	
Subtotal Product Development			16.017	0.878		7.516		7.367		0.000	31.778	
Remarks:												
Development Support	WX	SSC				0.160	TBD	0.290	TBD		0.450	
Software Development	Var	Various	4.215	0.394	Dec-04	0.917	TBD	1.026	TBD	Continuing	Continuing	
Integrated Logistics Support	TBD	TBD				1.000	TBD	0.900	TBD		1.900	
Documentation	TBD	TBD		0.280							0.280	
Technical Data	TBD	TBD				0.500	TBD	0.500	TBD		1.000	
Studies and Analysis	WX	SSC				0.960	TBD	1.600	TBD		2.560	
Subtotal Support			4.215	0.674		3.537	TBD	4.316	TBD	Continuing	Continuing	
Remarks:												

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<b>CLASSIFICATION:</b>													
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Exhibit R-3 Cost Analysis (page 2)									DATE:			February 2006	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE: 0204163N TITLE: FLEET TACTICAL DEVEL				0725 Communications Automation						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	WX	SSC		0.274	TBD	1.300	Jan-06	0.314	Dec-05	Continuing	Continuing		
Operational Test & Evaluation	VAR	VAR	3.882	0.117	Dec-04	0.300	TBD	0.017		Continuing	Continuing		
Operational Test & Evaluation	MIPR	OPTEVFOR	0.315	0.056	TBD							0.371	
Operational Test & Evaluation	VAR	VAR	0.350									0.350	
Subtotal T&E			4.547	0.447		1.600		0.331		Continuing	Continuing		
Remarks:													
Contractor Engineering Support	VAR	VAR	0.246	0.075	Dec-04	0.160	Jun-06	0.775	Jun-07	Continuing	Continuing		
Government Engineering Support	WX	SSC		0.044	Dec-04	0.336	Dec-05	0.041	Dec-06				
Program Management Support	VAR	SSC	1.704	0.131	Dec-04	0.138	VAR	0.739	VAR	Continuing	Continuing		
Program Management Support	VAR	VAR	1.263			2.500	Sep-05	1.789	Sep-05	Continuing	Continuing		
Subtotal Management			3.213	0.250		3.134		3.344		Continuing	Continuing		
Remarks:													
Total Cost			27.992	2.249		15.787		15.358		Continuing	Continuing		

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EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>																
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-7</b>										PE: 0204163N TITLE: FLEET TACTICAL DEVEL										0725 Communications Automation/ADNS																
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
<b>Prototype Phase</b>	Proto Type Phase Incr II				Proto Type Phase IIa				Proto Type Phase Incr III																											
<b>System Development</b>																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production</b>																																				
<b>Deliveries</b>																																				

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

1. Initial OPEVAL Q2, 01. Subsequent discussions between OPNAV, COTF, and Program Office agreed the submarine variant of ADNS required additional Operational testing.

CLASSIFICATION:

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-7</b>	PE: 0204163N	TITLE: FLEET TACTICAL DEVEL			0725 Communications Automation/ADNS				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
<b>INCREMENT I *</b>									
<b>SUBMARINE *</b>									
Prototype Phase *									
System Design Review (SDR) *									
Preliminary Design Review (PDR) *									
System Development *									
Critical Design Review (CDR) *									
Initial Operational Capability (IOC) *									
Developmental Testing (DT) *									
Operational Testing (OT) *									
<b>INCREMENT II</b>									
<i>Initial Traffic Management, Shore (TMS)</i>									
Prototype Phase	1-4Q								
System Design Review (SDR)	2Q								
Preliminary Design Review (PDR)	3Q								
System Development	2-4Q								
Critical Design Review (CDR)	4Q								
Initial Operational Capability (IOC)		4Q							
Developmental Testing (DT)		4Q							
Operational Testing (OT)		4Q							
Low Rate Initial Production (LRIP)		3Q							
Full Operational Capability (FOC)					2Q				
<i>Initial QOS (IQOS)</i>									
Prototype Phase	1-4Q								
System Design Review (SDR)	2Q								
Preliminary Design Review (PDR)	3Q								
System Development	2-4Q								
Critical Design Review (CDR)	4Q								
<b>INCREMENT IIa</b>									
<i>Voice Over IP (VOIP)</i>									
Technology Decision		2Q							
Prototype Phase		2Q-4Q	1Q						
Preliminary Design Review (PDR)		3Q							
System Development		3Q-4Q	1Q						
Critical Design Review (CDR)			1Q						
OTRR/LRIP Decision			2Q						
Operational Testing (OT)			4Q						
Fielding Decision				1Q					
Initial Operational Capability (IOC)				1Q					
<b>INCREMENT III</b>									
<i>Core Capability - Converged IP, Meshed, IPv6, Black Core, 25/50 Mbps</i>					FY08	FY09	FY10	FY11	
Milestone B (MS B)			3Q						
Prototype Phase				1Q-4Q	1Q				
System Design Review (SDR)				1Q					
Preliminary Design Review (PDR)				3Q					
System Development				1Q-4Q	1Q				
Milestone C (MS C)				3Q					
Critical Design Review (CDR)					1Q				
Developmental Testing (DT)					1Q				
Operational Testing (OT)					1Q				
Low Rate Initial Production (LRIP)				4Q	2Q				
Full Rate Production Decision Review (FRPDR)				3Q					
Initial Operational Capability (IOC)				3Q					

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EXHIBIT R4, Schedule Profile																	DATE: <b>February 2006</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>								PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET TACTICAL DEV								PROJECT NUMBER AND NAME 0725 Communications Automation-Tactical Switching Ashore													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>							▲ 2A PDR		▲ 2B PDR	▲ 2A CDR			▲ 2B CDR	▲ 2C PDR			▲ 2C CDR												
Phase Two Requirements Definition					■																								
Phase Two System Specifications							☆																						
Phase Two Hardware/Software Development Phase 2A Phase 2B Phase 2C									■ Phase 2A HW/Dev				■ Phase 2B HW/Dev				■ Phase 2C HW/Dev												
System-of-Systems testing													■ System-of-Systems testing (confidence testing)																
<b>Production Milestones</b>																													
Phase 2 Deliveries-OPN													▲																

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**CLASSIFICATION:**

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Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N BA-7</b>	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVEL				PROJECT NUMBER AND NAME 0725 Communications Auto-Tactical Switching Ashore		
Schedule Profile - Tactical Switching Ashore	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Preliminary Design Review (PDR) Phase IIA		3Q					
Preliminary Design Review (PDR) Phase IIB			1Q				
Preliminary Design Review (PDR) Phase IIC				1Q			
Critical Design Review (CDR) Phase IIA			2Q				
Critical Design Review (CDR) Phase IIB			4Q				
Critical Design Review (CDR) Phase IIC				4Q			
Phase II Requirements Definition		1Q-2Q					
Phase II System Specifications		2Q					
Hardware/Software Development Phase IIA		3Q-4Q	1Q-2Q				
Hardware/Software Development Phase IIB			1Q-4Q				
Hardware/Software Development Phase IIC				1Q-4Q			
System-of-Systems Testing			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Development Test/Operation Test (DT/OT) Phase IIA			2Q				
Development Test/Operation Test (DT/OT) Phase IIB			4Q				
Development Test/Operation Test (DT/OT) Phase IIC				4Q			
Deliveries - OPN			3Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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CLASSIFICATION:

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EXHIBIT R4, Schedule Profile

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME																PROJECT NUMBER AND NAME														
RDT&E, N / BA-7		PE: 0204163N TITLE: FLEET TACTICAL DEVEL																0725 Communications Automation/Tactical Messaging														
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Program Milestones</b>																																
Pilot Phase																																
Development																																
In-Progress Review (Multiple Baselines)																																
S/W Delivery																																
<b>Software</b>																																
S/W Delivery 2.3																																
S/W Delivery 2.4																																
S/W Delivery 2.5																																
S/W Delivery DMS 3.1																																
S/W Delivery ISNS/DMS																																
S/W Delivery DMS Proxy																																
S/W Delivery Way-Ahead SW																																
DISA DMS MR Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
JITC IV&V Certification																																
Deliveries																																

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



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CLASSIFICATION:

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Exhibit R-4a, Schedule Detail						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVEL				PROJECT NUMBER AND NAME 0725 Communications Automation/Tactical Messaging		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DMS Proxy IOC			2Q				
Win2K/Development	1Q-2Q						
IP Broadcast							
Way-Ahead Messaging				1Q-4Q	1Q-4Q	1Q-3Q	
ISNS/DMS CO-HOST	1Q-4Q	1Q-2Q					
IPR	1Q,3Q	1Q,3Q		1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q
EMD - Lab	4Q			1Q	3Q		
EMD - JITC		2Q		3Q		1Q	
S/W Delivery 2.3							
S/W Delivery 2.4	2Q						
S/W Delivery 2.5	3Q						
S/W Delivery DMS 3.1	1Q						
S/W Delivery ISNS/DMS		2Q					
S/W Delivery AMHS		2Q					
S/W Delivery Way-Ahead						2Q	
DISA DMS MR	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Development Test	3Q-4Q	1Q-2Q		1Q-4Q	2Q-4Q	1Q	
Operational Assessment/Test	1Q-2Q	2Q-3Q		1Q		2Q-4Q	
JITC IV&V Certification	1Q-4Q	1Q-3Q		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Deliveries	5	14	16	40	50	41	30

R-1 SHOPPING LIST - Item No. 172

<b>CLASSIFICATION:</b>							
EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February-06</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PE: 0204163N	TITLE: FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 1083 Shore to Ship Communications		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	16.235	16.362	11.831	10.766	10.377	10.382	10.630
RDT&E Articles Qty							
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>This project develops communication system elements which provide positive command and control of deployed Ship, Submersible, Ballistic, Nuclear (SSBNs) and fleet submarine broadcast connectivity to Ship, Submersible, Nuclear (SSNs), Ship, Submersible, Guided Missile (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. Effective utilization of this communications system's performance is provided via the Strategic Communications Assessment Program (SCAP). The Continued Evaluation Program (CEP) provides constant assessment of the effectiveness of the end-to-end network. The Submarine Operating Authority (SUBOPAETH) includes both Submarine Communications and Operational Control (OPCON) at shore sites. A SUBOPAETH architecture provides for back-up capability among the four Broadcast Control Authority/ Operational Control (BCA/OPCONS) to ensure Continuity of Operations (COOP) in the event of a BCA outage. The Common Submarine Radio Room (CSRR) integrates Commercial Off The Shelf (COTS) and Government Off The Shelf (GOTS) components into a single radio room configuration for all classes of submarines. The CSRR design is based on the Virginia class radio room and is adapted for each platform's hull shape and mission needs. 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 provide a communications approach in support of the Joint Operational Architecture (JOA) for time-critical Emergency Action Messages (EAMs) to be disseminated across Areas of Responsibility (AOR's) in support of Joint operations. This project implements the Joint Staff EAM Board of Directors (BoD) direction for a viable long-term EAM dissemination solution (NC3 LTS) and that near term enhancements enable the interim hybrid solution to have an infrastructure to allow life sustainment until a replacement system comes on-line. Low Band Universal Communications System (LBUCS) provides operational capability, through the Very Low Frequency architecture, to insure 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 Submarine Enhanced Emergency Alert System (SEEAS) replaces the Army-Navy/BST-1 (AN/BST-1) transmitter buoy used to communicate "in extremis" messages to the Fleet Commander from an SSBN on patrol that had been rendered incapable of performing its mission either by hostile action or by a casualty.</p>							

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February-06
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 1083 Shore to Ship Communications

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

	FY 05	FY 06	FY 07
<b>High Voltage Improvement Program</b>	0.431	0.448	0.427
RDT&E Articles Quantity			

**FY05 Accomplishments:** Completed development of remote corona monitoring/sensing system capability for FVLF sites. Completed investigation on helix house bushings and guy insulators. Began the investigation into new materials for sustained long term operation in high electromagnetic fields. **FY06:** Complete investigation into new materials for sustained long term operation in high electromagnetic fields. Begin examination of sealed Helix variometers for antenna tuning. **FY07:** Complete examination of sealed Helix variometers for antenna tuning. Begin examination of ultra quick cut off devises to prevent overload conditions.

	FY 05	FY 06	FY 07
<b>Common Submarine Radio Room (CSRR)</b>	0.900	0.936	0.943
RDT&E Articles Quantity			

**FY05 Accomplishment:** Completed land-based testing of SSBN variant of CSRR. Due to ship availability the SEAWOLF OPEVAL will be completed FY06. **FY06:** Complete integration, system certification and operational assessment of SSBN variant of CSRR. Conduct SEAWOLF OPEVAL. Initiate modernization of Phase I. **FY07:** Complete OPEVAL of SSBN variant and initial a system upgrades. Complete modernization of Phase I development.

	FY 05	FY 06	FY 07
<b>SCAP/CEP</b>	4.539	4.481	4.423
RDT&E Articles Quantity			

**FY05 Accomplishments:** Continued Strategic Communications Continuing Assessment Program (SCAP) providing Commander Naval Submarine Force (COMNAVSUBFOR) Force Management and Force Direction products. Conducted Continuing Evaluation Program (CEP) analyzing each TRIDENT patrol and special message tests to verify continuous communication connectivity and strategic connectivity threats, and performed analysis. Extend analysis to cover Very Low Frequency (VLF) shore connectivity paths and Military, Strategic and Tactical Relay (MILSTAR) monitoring. **FY06:** Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis. Extended analysis covers Very Low Frequency (VLF) shore connectivity paths and MILSTAR monitoring. Additional monitoring and analysis is required for the NOVA/Hybrid EAM delivery system to establish a baseline and verify performance parameters. **FY07:** Continuation of FY06 efforts. Prerequisite for developing requirements set for NC3 Long Term Solution.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February-06</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 1083 Shore to Ship Communications

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

	FY 05	FY 06	FY 07
<b>Concept Development/Systems Planning</b>	0.901	0.912	0.891
RDT&E Articles Quantity			

**FY05 Accomplishments:** Continued development of dynamic allocation capability of the Fixed Submarine Broadcast Support (FSBS) bandwidth. Began development of coding and compression necessary to significantly increase the equivalent data throughput. Began the development of a submarine communications architecture that provides a foundation of Joint and allied Network Enabled Operations (NEO). **FY06:** Investigate codes and modulation schemes necessary to conduct throughput and coverage analysis, performance testing and evaluation. Complete the Joint/Allied NEO architecture design. **FY07:** Conduct testing, data collection and analysis necessary to optimize bandwidth use. Utilize the data to develop employment CONOPS to maximize operational benefit. Demonstrate Joint/Allied NEO in an operational environment.

	FY 05	FY 06	FY 07
<b>Submarine Operating Authority (SUBOPAETH)</b>	2.918	0.000	0.000
RDT&E Articles Quantity			

**FY05 Accomplishments:** Developed the automated toolsets to facilitate ease in manning burden to support operational and broadcast control for submarines.

	FY 05	FY 06	FY 07
<b>Nuclear Command, Control Communications Long Term Solution (NC3 LTS)</b>	4.246	4.214	1.508
RDT&E Articles Quantity			

**FY05 Accomplishments:** Implemented life extension actions identified in the end-to-end assessment. Developed computer modeling and simulations. Initiated the acquisition program process and continued the NC3 LTS Analysis of Alternatives. Initiated the development of the prototype. **FY06:** Continue life extension actions identified in the end-to-end assessment and continue development of prototypes and demonstration of availability. **FY07:** Complete development of prototypes and demonstration. Commence development of NC3 LTS Increment 1 .

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February-06</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 1083 Shore to Ship Communications

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
<b>Low Band Universal Communication System (LBUCS)</b>	2.300	4.190	3.639
RDT&E Articles Quantity			

**FY05 Accomplishments:** Conducted requirements definition of transmit and receive systems. Ensured the transmit and receive system designs are consistent with joint interoperability standards. Commenced work on transmit and receive software.  
**FY06:** Continue development of transmit and receive software focusing on portability. Begin development of the transmit and receive equipment.  
**FY07:** Complete development of transmit and receive equipment and software. Complete Milestone B.

	FY 05	FY 06	FY 07
<b>Submarine Enhanced Emergency Alert System (SEEAS)</b>	0.000	1.181	0.000
RDT&E Articles Quantity			

**FY06:** Design an emergency alert system and supporting elements replacing the AN/BST-1 (which reaches end of service life by 2010) for SSBNs in accordance with new operational requirements.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>Feb-2006</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-7</b>	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications	

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
3107 Submarine Broadcast Support	17.680	2.132	0.666	18.750	18.981	19.380	19.813

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

**The Common Submarine Radio Room (CSRR)** will integrate Chief of Naval Operations (CNO) N71 communication programs into the submarine radio rooms. The program has been designated an ACAT II due to the radio room system level Operational Test requirement and the amount of funding required to execute the program. Each class variant (SSBN, SSGN, SSN) will require design integration and operational testing. The CSRR program is proceeding to a Milestone C decision. The procurement of equipment will be accomplished by the established program offices; the integration of the equipment into the submarine environment will be conducted by the NAVSEA Undersea Warfare Center; and the installation will be accomplished by SPAWAR System Center, Charleston.

**Low Band Universal Communication System (LBUCS)** will maximize the use of Commercial Off The Shelf (COTS) and Non-Developmental Items (NDI) hardware and software. Procurement contract award will be based on full and open competition.

**The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS)** will develop an approach to use COTS and NDI components to extend operational life of the existing system and to establish a long term solution compatible with future Global Information Grid structures. The program plans Milestone (MS)-A in 2nd QTR FY07.

**Submarine Operating Authority (SUBOPAETH)** is a phased Abbreviated Acquisition Program (AAP) using COTS and NDI.

**Submarine Enhanced Emergency Alert System (SEEAS)** is a project levying off technology developed from other programs and maximizes the use of COTS and NDI.

**(U) F. Major Performers:**

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<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 1)									DATE: <b>Feb 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT PE: 0204163N TITLE: FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 1083 Shore to Ship Communications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	6.243	2.498	11/04	1.517	11/05	1.089	11/06	Continuing	Continuing	0.000
Ancillary Hardware Development	Various	Various	0.000	0.272	11/04	0.331	11/05	0.288	11/06	Continuing	Continuing	0.000
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	21.596	0.989	12/04	0.983	12/05	0.997	12/06	Continuing	Continuing	0.000
Systems Engineering	WR	SSC San Diego, CA	34.178	3.098	11/04	2.059	11/05	1.857	11/06	Continuing	Continuing	0.000
Systems Engineering	WR	Misc. Labs, NUWC, RI	9.176	0.824	11/04	0.973	11/05	0.800	11/06	Continuing	Continuing	0.000
Systems Engineering	WR	US Army, Monmouth, NJ	4.460	0.247	12/04	0.875	11/05	0.525	11/06	Continuing	Continuing	0.000
Systems Engineering	Various	Various	16.154	0.000	N/A						16.154	0.000
Subtotal Product Development			91.807	7.928		6.738		5.556		Continuing	Continuing	0.000
Remarks:												
Development Support											0.000	0.000
Software Development	WR	SSC San Diego, CA	6.713	2.351	11/04	3.692	11/05	1.695	11/06	Continuing	Continuing	0.000
Training Development											0.000	0.000
Integrated Logistics Support											0.000	0.000
Acquisition/Program Development			0.000	0.215	11/04	0.545	11/05	0.215	11/06	Continuing	Continuing	0.000
Technical Data			2.600	0.222	11/04	0.247	11/05	0.261	11/06	Continuing	Continuing	0.000
GFE											0.000	0.000
Subtotal Support			9.313	2.788		4.484		2.171		Continuing	Continuing	0.000
Remarks:												

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<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 2)									DATE: <b>Feb 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT PE: 0204163N TITLE: FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 1083 Shore to Ship Communications						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	0.000
Operational Test & Evaluation											0.000	0.000
Strategic OP Systems Perf Evaluation	CPFF	APL/JHU, Baltimore, MD	8.600	3.435	12/04	3.487	12/05	2.346	12/06	Continuing	Continuing	0.000
Systems Testing	Various	Various	4.191	1.117	11/04	0.758	11/05	0.993	12/06	Continuing	Continuing	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			12.791	4.552		4.245		3.339		Continuing	Continuing	0.000
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ	0.492	0.452	11/04	0.250	12/05	0.125	12/06	Continuing	Continuing	0.000
Government Engineering Support	WR	Various	0.135	0.325	11/04	0.385	12/05	0.375	12/06	Continuing	Continuing	0.000
Program Management Support	Various	Various	4.192	0.190	11/04	0.210	12/05	0.215	12/06	Continuing	Continuing	0.000
Travel						0.050		0.050		Continuing	Continuing	0.000
Subtotal Management			4.819	0.967		0.895		0.765		Continuing	Continuing	0.000
Remarks:												
Total Cost			118.730	16.235		16.362		11.831		Continuing	Continuing	0.000
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February-06							
Submarine Operation Authority - SUBOPAATH																																
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										PE: 0204163N TITLE: FLEET COMMUNICATIONS										1083 Shore to Ship Communications - SUBOPAATH												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AAP Designation	▲					★ <sup>IOC</sup>										★ <sup>FOC</sup>																
Software Development	█																															
System Development	█																															
Equipment Delivery				█	█	█	█	█	█	█	█	█																				
Software Phase I Delivery			█						█																							
Software Phase II Delivery											█																					
<b>Test &amp; Evaluation Milestones</b>																																
Development Test			█																													
Operational Test						█																										
<b>Production Milestones</b>																																
SMRS			Procure (4)			Install (4)																										
BCA SMG			Procure (1)			Procure (2)				Procure (2)																						
BKS SMG							Install (3)			Install (2)																						
			Procure (2)			Procure (5)																										
							Install (7)																									
Deliveries				▼ <sub>4</sub>							▼ <sub>3</sub>	▼ <sub>7</sub>				▼ <sub>1</sub>				▼ <sub>1</sub>												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: Feb 2006												
Nuclear Command, Control, Communications Systems - Long Term Solution																																				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
RDT&E, N / BA-7								PE: 0204163N TITLE: FLEET COMMUNICATIONS								1083 Shore to Ship Communications - NC3 LTS																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
Functional Area Analysis (FAA)					■	■	■	■																												
Functional Needs Analysis (FNA)					■	■	■	■																												
Functional Solution Analysis (FSA)									■	■	■	■																								
Post Independence Analysis(PIA)													■	■	■	■																				
Initial Capabilities Document (ICD)													■	■	■	■																				
Concept Refinement Phase (AoA)																	■	■	■	■																
Technology Development Phase Capability Development Document (CDD)																																				
System Development Phase Capability Production Document (CPD)																																				
Production Phase																																				
Deployment Phase - Installation																																				
IOC - NC3 LTS																																				

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Terminology taken from DoDI 5000.2, dtd 12 May 2003.



CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February-06												
Submarine Enhanced Emergency Alert System - SEEAS																																				
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME												
RDT&E, N / BA-7												PE: 0204163N TITLE: FLEET COMMUNICATIONS												1083 Shore to Ship Communications - SEEAS												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>					PROJECT DESIGNATION																															
Contract Award					▲																															
Prototype Phase																																				
System Development (e.g., Radar System dev.)																																				
Software-Test Set Ensemble																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
LRIP I																																				
LRIP II																																				
FRP (AN/BST-1 Buoy Unit)																																				
Equipment Deliveries																																				

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February-06												
Low Band Universal Communication System																																				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
RDT&E, N / BA-7								PE: 0204163N TITLE: FLEET COMMUNICATIONS								1083 Shore to Ship Communications - LBUCS																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>									△				△	MS-B			△	MS-C			△	FRP			△	★										
Requirements Definition																																				
Transmit / Receive SW																																				
Transmit Subsystem Development																																				
Receive Subsystem Development																																				
Software Delivery																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
Transmit Subsystem																																				
Receive Subsystem																																				
Equipment Deliveries																																				

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>Feb 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-2</b>		PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 9999/Congressional Increases			
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	0.000	3.277	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty	Not Applicable							

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

Congressional plus-up to support NAVSEA Carderock and Mobilisa, Inc. to develop a Floating Area Network (FAN) enabling a direct Line of Sight (LOS), wireless, TCP/IP network among intra-battle group ships.

Congressional plus-up to support development of a portable Cole emergency radio system (MRC-105 Emergency Radio).

Congressional plus-up funds will develop a design upgrade to the Programmable Integrated Communications Terminals (PICT) originally fielded in 1997. The PICT is currently on 30 Naval Platforms and acts as an integration terminal for combining internal and external shipboard communications systems. The proposed design upgrade is needed to improve PICT operational versatility and capability, potentially reduce man-hour requirements and further empower the warfighter's ability to select communications that fit the situation.

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>Feb 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-2</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 9999/Congressional Increases

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Floating Area Network (9620)	0.964		
RDT&E Articles Quantity			

Accomplishments: N/A

Planned: Develop a Floating Area Network (FAN) enabling a direct Line of Sight (LOS), wireless, TCP/IP network among intra-battle group ships.

	FY 05	FY 06	FY 07
MRC Emergency Radio (MRC) (9619)	0.964		
RDT&E Articles Quantity			

Accomplishments: N/A

Planned: Develop a Floating Area Network (FAN) enabling a direct Line of Sight (LOS), wireless, TCP/IP network among intra-battle group ships.

	FY 05	FY 06	FY 07
Programmable Integrated Comm Terminals (PICTs)	1.349		
RDT&E Articles Quantity (9618)			

Accomplishments: N/A

Planned: Funds will specifically be used to: 1) Ensure the proposed design upgrade (Model 7500 PICT) meets improved operational capabilities, stability and supportability requirements and performs as designed. 2) Perform qualification testing to ensure the reliability of the proposed design upgrade in the ML-S-901D shock environment for CVN ship classes. 3) Perform TEMPEST testing to validate the security compliance of the integrated RED/BLACK processing circuits in the PICT to ensure Information Assurance Certification and overall DOD information Technology Security Certification and Accreditation Process (DITSCAP) approval.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>Feb 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-2</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0204163N TITLE: FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 9999/Congressional Increases
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>To Complete</u>	<u>Total Cost</u>
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**E. ACQUISITION STRATEGY: \***

Utilize Congressional Add in FY's 2005 to develop Navy system specification and develop prototype to Navy operational and technical requirements.

**F. MAJOR PERFORMERS: \*\***

NSWC Carderock - Project and technical management for USN  
Mobilisa Inc. - system prime contractor

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

\*\* Required for DON and OSD submit only.

R-1 SHOPPING LIST - Item No. 172

EXHIBIT R-2, RDT&E Budget Item Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0204229N, TOMAHAWK & TMPC	
BA 7							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	31.227	27.029	18.635	13.975	14.218	13.485	11.888
A0545 TOMAHAWK	31.227	20.029	18.635	13.975	14.218	13.485	11.888
9999 CONGRESSIONAL ADD		7.000					

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

The Tomahawk Weapons System (TWS) provides the 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 development 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 significantly 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 includes a high anti-jam GPS receiver, navigation improvements and associated antenna systems. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operation Requirements Document (ORD).

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 the nuclear (TMPC only) and conventional TLAM, including 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 training development, installation planning, and simulation/model development. 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 the Tactical Tomahawk Weapons Control System (TTWCS) requirements to meet the Joint Technical Architecture (JTA) version 6 requirements to meet FORCENet compliance and be Internet Protocol Version 6 (IPV6) ready is essential for continued interoperability within the Joint Service Architecture. These efforts provide battle-group tactical flexibility and responsiveness while maximizing TWS wartime capability. TTWCS entered Engineering and Manufacturing Development (EMD) in FY99, with Phase A IOC (BLK III) in DEC 03, and Phase B IOC (TACTOM) in June 2004.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		PROGRAM ELEMENT NUMBER AND NAME 0204229N, TOMAHAWK & TMPC			PROJECT NUMBER AND NAME A0545, TOMAHAWK			
	BA 7							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
A0545 TOMAHAWK	31.227	20.029	18.635	13.975	14.218	13.485	11.888	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Tomahawk Weapons System (TWS) provides the 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 development 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 significantly 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 includes a high anti-jam GPS receiver, navigation improvements and associated antenna systems. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operation Requirements Document (ORD).

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 the Tactical Tomahawk Weapons Control System (TTWCS) requirements to meet the Joint Technical Architecture (JTA) version 6 requirements to meet FORCENet compliance and be IPV6 ready is essential for continued interoperability within the Joint Service Architecture. These efforts provide battle-group tactical flexibility and responsiveness while maximizing TWS wartime capability. TTWCS entered Engineering and Manufacturing Development (EMD) in FY99, with Phase A IOC (BLK III) in DEC 03, and Phase B IOC (TACTOM) in June 2004.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204229N, TOMAHAWK &amp; TMPC</b>	PROJECT NUMBER AND NAME A0545, TOMAHAWK
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	5.888	4.687	3.179
RDT&E Articles Qty			

Continue development of Tactical Tomahawk Weapons System Integrated Training Architecture, continue development of version 5 software, initiate version 6 development activities to develop JTA version 6 requirements. Complete TTWCS version 5 development, enter TECHEVAL/OPEVAL for TTWCS version 5, continue with TTWCS version 6 development efforts, begin the TTWCS version 7 development efforts that complete the implementation of JTA version 6 requirements. Complete the development of TTWCS version 6, enter the TECHEVAL/OPEVAL for TTWCS version 6, continue with TTWCS version 7 development efforts.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	4.699	4.772	4.747
RDT&E Articles Qty			

Continue development and incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk. Support Tactical Tomahawk Weapons System OPEVAL. 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.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	20.640	10.570	10.709
RDT&E Articles Qty			

Completed OPEVAL and IOC for Tactical Tomahawk. Continue development of the Tactical Tomahawk Torpedo-Tube Launch (TT-TTL) capability. Complete TTL software and hardware qualification testing, DT/OT flight tests and IOC. Continue hardware and software trade studies for Phase 2 ORD requirements to include Selective Availability Anti-Spoofing Module (SAASM) capability into the GPS, Precision Terrain Aided Navigation capability.

Completed demonstration prototype of Precision Terrain Aided Navigation (PTAN) capability to demonstrate real-time operation. Initiate PTAN advance technology risk reduction efforts to develop next generation PTAN prototypes and to integrate PTAN capability into the missile simulation labs.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204229N, TOMAHAWK &amp; TMPC</b>	PROJECT NUMBER AND NAME A0545, TOMAHAWK
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## C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	31.473	20.342	17.480
Current BES / President's Budget:	<u>31.227</u>	<u>20.029</u>	<u>18.635</u>
Total Adjustments	-0.246	-0.313	1.155

## Summary of Adjustments

Congressional Reductions		-0.213	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.645		
Congressional Increases			
Programmatic Adjustments			1.100
Economic Assumptions		-0.092	
Miscellaneous Adjustments	<u>0.399</u>	-0.008	<u>0.055</u>
Subtotal	-0.246	-0.313	1.155

## Schedule:

Block IV successfully completed IOC in May 2004 and received Milestone III and full rate production decision approval in August 2004. A multiyear full rate production contract was awarded in August 2004 for FY 2004-2008 production. Torpedo Tube Launch capability qualification and Milestone C will complete in 1st Qtr FY 2007 followed by DT/OT and IOC in FY 2008. SAASM is expected to IOC in 3rd Qtr FY 2009 based on current PMA-280 waiver to JCS SAASM mandate.

## Technical:

EXHIBIT R-2a, RDT&E Project Justification								DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N /		0204229N, TOMAHAWK & TMPC					A0545, TOMAHAWK			
BA 7										
D. OTHER PROGRAM FUNDING SUMMARY:		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
WPN BLI 210100 Tomahawk		277.239	372.396	354.565	405.818	418.062	435.625	442.421	CONT	11,821.453
OPN BLI 525000 Surface Tomahawk Support Equipment		70.161	0.000	0.000	0.000	0.000	0.000	0.000		1,699.600
OPN BLI 525500 Submarine Tomahawk Support Equipment		5.432	0.000	0.000	0.000	0.000	0.000	0.000		143.200
OPN BLI 525300 Tomahawk Support Equipment		0.000	74.081	61.185	48.789	45.441	45.862	45.896	CONT	901.100
OPN Spares BLI 902010 Initial Spares		1.296	1.649	0.789	0.901	0.000	0.000	0.000	CONT	4.635
OPN Spares BLI 902090 Vendor Direct Spares		0.883	0.712	0.615	0.411	0.273	0.064	0.000	CONT	2.958
E. ACQUISITION STRATEGY:										
<p>(U) D. ACQUISITION STRATEGY: 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&amp;A No AIR-22448) signed by the Under Secretary of the Navy on 29 May 1998. The acquisition strategy was to transition the Tomahawk Baseline Improvement Program (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 multiyear full rate production contract was awarded in August 2004 for FY 2004-2008 production.</p> <p>Torpedo Tube Launch (TTL) capability will IOC in FY 2008. TTL missiles will be procured within the current missile production budget as required to meet Fleet loadout requirements. Other spiral development capabilities will be introduced after successful qualification and testing.</p>										



UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /		0204229N, TOMAHAWK & TMPC				0545, TOMAHAWK WEAPONS SYSTEM (TWS)						
BA 7												
Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
PRODUCT DEVELOPMENT												
PHD - Weapons Control System	C-CPAF	LOCKHEED MARTIN CORP, Valley Forge, PA	90.512	1.400	12/31/2004	.803	12/30/2005	.150	12/29/2006	1.427	94.292	94.349
Award Fee WCS			4.996								4.996	4.996
PHD-Mission Planning Systems TC2S	SS-CPFF	COMGLOBAL SYSTEMS, INC, San Jose, CA	32.633	1.862	12/31/2004	1.819	12/30/2005	1.950	12/29/2006	8.165	46.429	46.429
PHD-Mission Planning Systems TC2S	VARIOUS	VARIOUS	7.347	.327	VARIOUS						7.674	7.674
Primary Hardware Devel - AUR (C/CPFF)	C-CPFF	RAYTHEON COMPANY, Tucson, AZ	217.622	.160	11/4/2004	4.027	11/1/2005	1.000	11/1/2006	8.542	231.351	231.351
Primary Hardware Devel - PTAN (C/CPFF)	C-CPFF	RAYTHEON COMPANY, Tucson, AZ		1.690	6/8/2005						1.690	1.690
Primary Hardware Devel - SAASM (C/CPFF)	C-CPFF	RAYTHEON COMPANY, Tucson, AZ						1.143	3/31/2007	1.625	2.768	2.768
Primary Hardware Devel - TTL (C/CPAF)	C-CPAF	RAYTHEON COMPANY, Tucson, AZ	10.469	3.905	3/31/2005						14.374	14.374
Primary Hardware Devel - TTL Award Fee	C-CPAF	RAYTHEON COMPANY, Tucson, AZ	.819								.819	.819
Primary Hardware Devel - TTPC (C/CPFF)	C-CPFF	RAYTHEON COMPANY, Tucson, AZ	3.189								3.189	3.189
Ship Integration - Launcher Integration	TBD	NAVSEASYS COM, WNY DC	24.316	1.006	12/1/2004	1.301	12/1/2005	3.285	12/1/2006	3.772	33.680	37.687
Award Fee Launcher Integration			.752								.752	.789
Systems Eng - Weapons Control System	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD	2.916	.819	VARIOUS	.875	VARIOUS	.150	VARIOUS	.345	5.105	5.105
Systems Engineering - AUR (C/FP)	C-FP	RAYTHEON COMPANY, Tucson, AZ	14.203			.034	11/1/2005				14.237	14.819
Systems Engineering - AUR (C/FP)	C-FP	BOEING, St Louis, MO	3.000								3.000	3.000
Systems Engineering - AUR (SS/CPFF)	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD	25.234	1.745	1/3/2005	.725	1/1/2006	1.000	1/1/2007	1.976	30.680	33.061
Systems Engineering - PTAN (SS/CPFF)	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD		.525	1/3/2005						.525	.525
Systems Engineering - SAASM (C/CPFF)	TBD	JOHNS HOPKINS UNIVERSITY, Laurel, MD						.330	3/31/2007	1.275	1.605	1.605
Systems Engineering - TTL (C/FP)	C-FP	RAYTHEON COMPANY, Tucson, AZ		.384	1/3/2005	.118	1/1/2006				.502	.502
Systems Engineering - TTL (SS/CPFF)	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD		.587	1/3/2005	.250	1/1/2006				.837	.837
1974 through TBIP Costs in 1996			2,176.447								2,176.447	
SUBTOTAL PRODUCT DEVELOPMENT			2,614.455	14.410		9.952		9.008		27.127	2,674.952	
SUPPORT												
Develop Support - Weapons Control System	WR	NUWC DET, Newport, RI	18.623	2.009	12/2004	.525	11/30/2005	.116	11/30/2006	.718	21.991	
Development Support - AUR (SS/CPFF)	SS-CPFF	SAIC, San Diego, CA	8.913	.787	12/31/2004	.736	12/31/2005	.450	12/31/2006	3.273	14.159	14.159
Development Support - AUR (TBD)	TBD	VARIOUS								.030	.030	.030
Development Support - AUR (WR)	VARIOUS	VARIOUS	63.256	.882	VARIOUS	.391	VARIOUS	.812	VARIOUS	11.496	76.837	
Development Support - PTAN (VARIOUS)	VARIOUS	VARIOUS		.010	VARIOUS						.010	.010
Development Support - PTAN (C/CPFF)	C-CPFF	HONEYWELL INTL INC, Minneapolis, MN	3.924	3.425	1/31/2005						7.349	7.349
Development Support - PTAN (WR)	WR	NAWCWD, China Lake, CA		.255	3/17/2005						.255	
Development Support - TTL (SS/CPFF)	SS-CPFF	SAIC, San Diego, CA		.281	11/1/2005	.211	11/1/2005				.492	.492
Development Support - TTL (WR)	WR	NUWC DET, Newport, RI	8.352	2.169	3/30/2005	1.661	11/30/2005				12.182	
Development Support - TTL (WR)	VARIOUS	VARIOUS		.727	VARIOUS	.200	VARIOUS				.927	
Government Engineering Support - SAAS	WR	STRATEGIC SYSTEMS PRGRMS, Wash, DC						2.475	VARIOUS	.050	2.525	
Government Engineering Support - SAAS	VARIOUS	VARIOUS						.214	VARIOUS	.830	1.044	
Soft Dev - Mission Plan Systems (TC2S)*	VARIOUS	VARIOUS								8.701	8.701	8.701
Soft Dev-Mission Plan Sys TC2S	SS/CPFF	RAYTHEON, Arlington, VA	5.100								5.100	5.100
Soft Dev-Mission Plan Sys TC2S	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD	15.443	1.200	12/31/2004	1.203	12/30/2005	1.150	12/29/2006	1.200	20.196	20.196
Soft Dev-Mission Plan Sys TC2S	SS-CPFF	LOCKHEED, Valley Forge, PA	5.794	1.310	12/31/2004	1.500	12/30/2005	1.397	12/29/2006	1.500	11.501	11.608
Soft Dev-Mission Plan Sys TC2S	SS-CPFF	HQ SEC OF AF-FMB, Washington, DC				.250	12/30/2005	.250	12/29/2006	.250	.750	1.000
Soft Dev-Mission Plan Sys TC2S	SS-CPFF	SAIC, San Diego, CA	14.307								14.307	14.307
Software Dev - Weapons Control System	WR	NSWC DAHLGRN D C XDM1 Dahlgren, VA	29.202	1.660	6/23/2005	2.484	11/30/2005	2.763	11/30/2006	3.620	39.729	
Software Dev - Weapons Control System	C-CPFF	LOCKHEED, Valley Forge, PA	99.246								99.246	99.246
Software Development - PTAN (SS/CPFF)	SS-CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD		1.702	1/1/2005						1.702	1.702
SUBTOTAL SUPPORT			272.160	16.417		9.161		9.627		31.668	339.033	

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		BA 7	PROGRAM ELEMENT 0204229N, TOMAHAWK & TMPC			PROJECT NUMBER AND NAME 0545, TOMAHAWK WEAPONS SYSTEM (TWS)						
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval (SS/CPFF)		JOHNS HOPKINS UNIVERSITY, Laurel, MD	1.602	.050	VARIOUS	.095	VARIOUS			.118	1.865	1.865
Dev Test & Eval (TBD)	TBD	VARIOUS	37.023								37.023	37.023
Dev Test & Eval (WR)	WR	NUWC DET, Newport, RI		.075	1/25/2005	.108	11/30/2005			.090	.273	.
Dev Test & Eval (SS/CPFF)	SS/CPFF	JOHNS HOPKINS UNIVERSITY, Laurel, MD								.250	.250	.250
Dev Test & Eval (SS/CPFF)	SS/CPFF	RAYTHEON COMPANY, Tucson, AZ	42.217								42.217	42.217
Dev Test & Eval (WR)	VARIOUS	VARIOUS		.275	VARIOUS	.713	VARIOUS			1.313	2.301	2.301
SUBTOTAL TEST & EVALUATION			80.842	.400		.916				1.771	83.929	
<b>MANAGEMENT</b>												
SUBTOTAL MANAGEMENT												
<b>Total Cost</b>												
			2,967.457	31.227		20.029				18.635	60.566	3,097.914

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME										
<b>RDT&amp;E, N / BA-7</b>									0204229N, TOMAHAWK & TMPC									A0545, TOMAHAWK										
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>									★ TTL MS-C				★ TTL IOC															
Missile Integration									SAASM INTEGRATION								★ SAASM IOC											
TTWCS V5									★ OTRR																			
P31	[Redacted]																											
<b>Test &amp; Evaluation Milestones</b>																												
Development Test									SAASM D/OT&E																			
Operational Test									TTL D/OT&E																			
									V5 OT&E																			
<b>Production Milestones</b>																												
Deliveries																												
LRIP I FY02	[Redacted]																											
LRIP II FY03	[Redacted]																											
LRIP III FY03									210																			
FRP FY04									MYP I 322																			
									FRP 2 298				FRP 3 408				FRP 4 350				FRP 5 421				FRP 6 366			
Deliveries																												

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

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>	PROGRAM ELEMENT 0204229N, TOMAHAWK & TMPC				PROJECT NUMBER AND NAME A0545, TOMAHAWK			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
TT LRIP-One Delivery	1Q							
TT LRIP-Two Delivery	1Q-4Q							
TT LRIP-Three Delivery	4Q	1Q-3Q						
TT TTL MS-C			1Q					
TT Preplanned Product Improvement (P3I)	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
TT SAASM Integration		1Q-4Q	1Q-4Q					
Full rate Production		2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
TTWCS - V5 Operational Test Readiness Review		3Q						
TTWCS - V5 Operational Test & Evaluation		3Q-4Q						
SAASM D/OT&E			3Q-4Q					
SAASM IOC					3Q			
TTL IOC				2Q				

**UNCLASSIFIED**

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204229N, TOMAHAWK & TMPC					PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
<b>9999, CONGRESSIONAL ADDS</b>		7.000						
RDT&E Articles Qty								
Congressional Adds: Precision Terrain-Aided Navigation (PTAN)								
B. ACCOMPLISHMENTS / PLANNED PROGRAM:								
0545	FY 2005	FY 2006	FY 2007					
Accomplishments / Effort / Sub-total Cost		7.000						
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.								
C. PROGRAM CHANGE SUMMARY								
Funding:	FY 2005	FY 2006	FY 2007					
Previous President's Budget:		0.000						
Current BES / President's Budget:		<u>7.000</u>						
Total Adjustments		7.000						
Summary of Adjustments								
Congressional Reductions								
Congressional Rescissions								
Congressional Undistributed Reductions								
Congressional Increases								
Economic Assumptions								
Miscellaneous Adjustments								
Subtotal		7.000						

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY BA-7</b>						R-1 ITEM NOMENCLATURE 0204311N-Integrated Surveillance Systems				
COST (\$ in Millions)	Prior Years Cost	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost To Complete	Total Program
Total PE Cost	331.209	27.023	30.647	30.740	28.289	24.184	25.841	26.047	Continuing	Continuing
0766-IUSS Detection and Classification System	331.209	23.763	23.097	30.740	28.289	24.184	25.841	26.047	Continuing	Continuing
9622 Fiber Optic Fixed Surveillance System	0.000	3.260	0.000	0.000	0.000	0.000	0.000	0.000		
9999 Undistributed RDT&EN Congressional Adds	0.000	0.000	7.550	0.000	0.000	0.000	0.000	0.000		
Quantity of RDT&E Articles										

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

This Program Element (P.E.) comprises two projects - 0766 and 9622. 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. The program has undergone a major transition from emphasis on maintaining a large dispersed surveillance force keyed to detection and tracking of submarines to a much smaller force that is effective against modern diesel and nuclear submarines in regional/littoral or broad ocean areas of interest. This transition preserves the ability to continue open ocean surveillance. A portion of project 0766 (FSS) is classified, with details available at a higher classification level. Project 9622 (Fiber Optic FSS) is a Congressional Plus-Up that supports FDS All Optical development efforts for Fixed Surveillance Systems.

**(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/TL array, a variant of the Submarine TB-29A Long line array. This will reduce the number of array variants employed by SURTASS from 4 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

**FY06 Congressional Adds**

Project 9999- Funds three congressional adds: Fiber Optic Confirmed Acoustic Velocity System, IUSS Common Processor automation, workload reduction and Ultra-thin disposable fiberoptic undersea surveillance arrays.

R-1 SHOPPING LIST - Item No. 174

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>				
COST (\$ in Millions)		Prior Years Cost		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost*		<b>331.209</b>	<b>0.000</b>	<b>23.763</b>	<b>23.097</b>	<b>30.740</b>	<b>28.289</b>	<b>24.184</b>	<b>25.841</b>	<b>26.047</b>
RDT&E Articles Qty										

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

A. (U) 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; while 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 Active Improvement Program being initiated by PEO LMW PMS 485.

(U) Functional improvements are delivered to the Fleet in software "Builds", while hardware improvements are delivered through the "Tech Insertion" 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, SURTASS, and ADS. The near-term goal is development of ICP, which will result in 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: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>
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**(U) B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
<b>N74 ASW Study</b>	0.700	0.690	0.700
RDT&E Articles Quantity			

**FY05:** ASW Study (\$700K) – 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.

**FY06:** ASW Study (\$690K) – 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.

**FY07:** ASW Study (\$700K) – 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 05	FY 06	FY 07
<b>Execution Realignment for Task Force ASW</b>	7.000	0.000	0.000
RDT&E Articles Quantity			

**FY 05** - Continue development and procurement of specific anti-submarine warfare (ASW) innovative technologies, procurement of reusable test assets for specific ASW technology concepts, and continued investment in developing and testing the highest potential industry originated technology concepts for ASW .

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**



CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>
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**(U) B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
<b>TB-29A/Twin-Line</b>	1.500	0.000	0.000
RDT&E Articles Quantity			

**FY05:** (\$1,500K) Complete processing improvements to support TB-29A operations and expand array interoperability.

	FY 05	FY 06	FY 07
<b>SURTASS Active Improvement Program</b>	10.785	18.500	18.920
RDT&E Articles Quantity			

**FY05:** (\$10,785) Continue development of CLFA capability. Begin transmit subsystem development and Small Waterplane Area Twin Hull-Passive (SWATH-P) SOC modifications. Begin active IUSS Common Processor development.  
**FY06:** (\$18,500) Continue development of CLFA capability. Complete SWATH-P SOC modification designs and convert first SWATH-P platform to support CLFA system. Continue active IUSS Common Processor development. Begin Sea Test Planning and DT/OT preparations for Active Improvement Program (LFA/TL-29A/IUSS Common Processor). Begin development of Off-Board Sensor capabilities.  
**FY07:** (\$18,920) Continue development of CLFA capability. Continue active IUSS Common Processor development to support bi-static processing and fixed sensor activation. Conduct DT/OT for Active Improvement Program (LFA/TL-29A/IUSS Common Processor). Continue development of Off-Board Sensor capabilities.

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	16.772	23.453	23.192
FY07 President's Budget	23.763	23.097	30.740
Total Adjustments	<u>6.991</u>	<u>-0.356</u>	<u>7.548</u>
Summary of Adjustments			
Other General Provisions	-0.009	-0.110	1.05
Programmatic Changes	7.000		5.000
Rescissions		-0.246	
Warfare Center Rates			-0.027
Inflation			<u>1.525</u>
Subtotal	<u>6.991</u>	<u>-0.356</u>	<u>7.548</u>

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 174

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Complete</u>	<u>Total Cost</u>
OPN 2237	7.118	3.797	4.688	1.191	23.577	24.033	1.471	Continuing	Continuing

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

	FY 2005	FY 2006	FY 2007
<b>Program</b> Milestones			
<b>Engineering</b> Milestones		Integrated Common Processor TL-29A Variant 4/06	Integrated Common Processor LFA/CLFA/Bi-Static Variant
<b>T&amp;E</b> Milestones	TL-29A SEA TESTS		LFA/TL-29A/ICP FOT&E CLFA SEA TESTS
<b>Contract</b> Milestones	Integrated Common Processor SURTASS 7/05		

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**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 6 of 16)

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)											DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N / BA-7</b>			0204311N-Integrated Surveillance Systems			<b>0766: IUSS Detection and Classification System</b>								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IUSS Common Architecture	CPFF	GDAIS/LM/ARL	41.687			0.000		0.000		0.000		0.000	41.687	41.687
Environmental Research	WR	ONR / VARIOUS	8.500			0.000		0.000		0.000		0.000	8.500	
Active Improvements/CLFA/LFA	CPFF	BAE /GDAIS/ VARIOUS	88.297			8.561	11/04	13.800	11/05	13.720	11/06	Continuing	Continuing	
C4I Integration	CPFF	VARIOUS	31.768			0.000		0.000		0.000		0.000	31.768	
N74 ASW Study	WX/PD	NUWC / APL	3.864			0.700	11/04	0.690	11/05	0.700	11/06	Continuing	Continuing	
Various	WX	VARIOUS	47.169			0.000		0.000		0.000		0.000	47.169	
Passive Signal Processing/ Sonar	CPFF	APL/GDAIS	2.202			0.000		0.000		0.000		0.000	2.202	2.202
Array Improvements	CPFF/WR	APL/SSC/VAR	2.530			0.524	11/04	0.000		0.000		0.000	3.054	
Task Force ASW		VARIOUS	0.000			7.000	03/05	0.000		0.000		0.000	7.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
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													0.000	
													0.000	
Subtotal Product Development			226.017	0.000		16.785		14.490		14.420		Continuing	Continuing	
Remarks:														

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**UNCLASSIFIED**

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>
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Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IUSS Common Architecture	WX	Various	1.300			0.000	11/04	0.000		0.000		0.000	1.300	
Active Improvements/CLFA/LFA	CPFF	NGC/Various	4.905			0.600	11/04	0.800	11/05	0.800	11/06	Continuing	Continuing	
C4ISR Integration	CPFF	NGC/Various	1.819			0.000	11/04	0.000		0.000		0.000	1.819	
Passive Signal Processing/ Sonar	Var/WX	Various	0.600			0.000	11/04	0.000		0.000		0.000	0.600	
Array Improvements	Var/WX	Various	0.620			0.200	11/04	0.000		0.000		0.000	0.820	
Various	Var/WX	Various	1.216			0.000	11/04	0.000		0.000		Continuing	Continuing	
													0.000	
													0.000	
													0.000	
													0.000	
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													0.000	
Subtotal Support			10.460	0.000		0.800		0.800		0.800		Continuing	Continuing	

Remarks:

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CLASSIFICATION:

**UNCLASSIFIED**

DATE: **February 2006**

Exhibit R-3 Cost Analysis (page 2)

APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-7			0204311N-Integrated Surveillance Systems			0766: IUSS Detection and Classification System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost		FY 04	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IUSS Common Architecture	Var/ WX	VARIOUS	1.837			0.000		0.000		0.000		0.000	1.837	
Active Improvements/CLFA/LFA	Var/ WX	VARIOUS	8.019			1.200	11/04	3.500	11/05	4.000	11/06	Continuing	Continuing	
Passive Signal Processing	Var/ WX	VARIOUS	1.300			0.000		0.000		0.000		0.000	1.300	
Array Improvements	Var/ WX	VARIOUS	0.590			0.600	11/04	0.000		0.000		0.000	1.190	
													0.000	
													0.000	
													0.000	
Subtotal T&E			11.746	0.000		1.800		3.500		4.000		Continuing	Continuing	
Remarks:														
Active Improvements/CLFA/LFA	Var/ WX	VARIOUS	2.017			0.400	11/04	0.400	11/05	0.400	11/06	Continuing	Continuing	
Passive Signal Processing	Var/ WX	VARIOUS	0.250			0.000		0.000		0.000		0.000	0.250	
Array Improvements	Var/ WX	VARIOUS	0.400			0.200	11/04	0.000		0.000		0.000	0.600	
													0.000	
													0.000	
Subtotal Management			2.667	0.000		0.600		0.400		0.400		Continuing	Continuing	
Remarks:														
Total Cost			250.890	0.000		19.985		19.190		19.620		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**

Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 9 of 16)

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>												PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems								PROJECT NUMBER AND NAME <b>0766: IUSS Detection and Classification System</b>												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b> Inactive ACAT II Status Eff 15 Jul 2002																																
<b>Test &amp; Evaluation Milestones</b>																																
T-23 Development Testing																																
TB-29A/Twinline																																
LFA / TL-29A / ICP FOT&E																																
CLFA CERTIFICATION TESTS																																
<b>Production Milestones</b>																																
Integrated Common Processor																																
CLFA																																
Tech Insertion 2010																																

R-1 SHOPPING LIST - Item No. 174

FOT & E: Follow-on Test and Evaluation

**UNCLASSIFIED**





CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME <b>9622: Fiber Optic Fixed Surveillance System</b>			
COST (\$ in Millions)		Prior Years Cost	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>0.000</b>	<b>3.260</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty									

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

A. (U) IUSS provides the Navy with its primary means of submarine detection both nuclear and diesel. The program has undergone a major transition from emphasis on maintaining a large dispersed surveillance force keyed to detection and tracking of submarines to a much smaller force that is effective against modern diesel and nuclear submarines in regional/littoral or broad ocean areas of interest. This transition preserves the ability to continue open ocean surveillance. These systems include FDS, FDS-C, SDS, SURTASS, and ADS. This effort supports continued development of an All-Optical fixed surveillance system. Prior year funding for this effort was executed from Project 0766.

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 12 of 16)

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>9622: Fiber Optic Fixed Surveillance System</b>

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

	FY 05	FY 06	FY 07
<b>Fiber Optic FSS Technology Development</b>	3.260	0.000	0.000
RDT&E Articles Quantity			

**FY05** (\$3,260) Modify previous All Optical component designs to allow for seamless integration with existing legacy components, produce a prototype array for validation, and test and evaluate the prototype in an operational environment.

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RDT&E, N / BA-7**

0204311N-Integrated Surveillance Systems

**9622: Fiber Optic Fixed Surveillance System**

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

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget Submit	3.262	0.000	0.000
FY07 President's Budget Submit	3.260	0.000	0.000
Total Adjustments	<u>-0.002</u>	<u>0.000</u>	<u>0.000</u>
Summary of Adjustments			
Other General Provision	<u>-0.002</u>		
Subtotal	<u>-0.002</u>	<u>0.000</u>	<u>0.000</u>

(U) Schedule:  
Not applicable

(U) Technical:  
Not applicable

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**

**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 14 of 16)

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME <b>9622: Fiber Optic Fixed Surveillance System</b>
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
NONE									

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

Program Milestones  
Engineering  
Milestones  
T&E  
Milestones  
Contract  
Milestones

**(U) F. MAJOR PERFORMERS: \*\***

R-1 SHOPPING LIST - Item No. 174

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME 9999/ Congressional Plus-Ups : VARIOUS

**CONGRESSIONAL PLUS-UPS:**

	FY 06			
9791N F				
Fiber Optic Conformal Acoustic Velocity System	3.600			

Funding to research and support fiber optic acoustic velocity systems.

	FY 06			
9792N				
IUSS Common Processor Automation, workload reduction	2.250			

Funding to research sonar automation for technical insertion into Integrated Common Processor to improve probability of detection performance.

	FY06			
9793N Ultra-thin Disposable Fiberoptic Undersea Surveillance	1.700			
Arrays				

Funding for research of feasibility of disposable arrays.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		PE 0204413N/Amphibious Tactical Support Units						
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		3.580	4.696	1.812	1.840	2.293	2.294	2.325
1980 AMPHIB OTHER C2		0.158	2.706	0.000	0.000	0.000	0.000	0.000
2231 Technology Transfer		0.000	1.990	1.812	1.840	2.293	2.294	2.325
2909 AMPHIBIOUS LIGHTERAGE DEVELOP		3.422	0.000	0.000	0.000	0.000	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This Program Element supports multiple amphibious warfare development and technology insertion efforts.

**B. PROJECT UNIT EFFORTS are as follows:**

**AMPHIB OTHER C2 (1980)** - SACC-A automates the Supporting Arms Coordination Center (SACC) aboard LHA 1, LHD 1 and LHD 5 ship classes, providing an integrated, automated capability to conduct Amphibious Task Force (ATF) Marine Expeditionary Brigade (MEB) level fire support planning, coordination, deconfliction, and execution of fires utilizing all supporting arms including naval surface fires, air assets, artillery, mines and mortars.

**AADS (1980)** - This project also contains FY06 funding for the Amphibious Assault Direction System (AADS, AN/KSQ-1), which provides AADS the ability to investigate future Navy C4ISR technical direction, explore technological advances, and analyze interoperability issues in order to develop the requisite technical upgrades.

**TECHNOLOGY TRANSFER (2231)** - This provides for research efforts on LCAC Future Naval Capabilities (FNC): Current S&T initiatives include the ONR Expeditionary Logistics (EXLOG), LCAC Cargo Gripping Lashings System (STTR), Self Contained Rudder Actuator System (STTR), Advanced structural design for LCAC ramps (SBIR), Personal Transport Module (SBIR), Enhanced Skirt Finger Material (FCT), the Lube Oil Cooler (FCT) and the Composit Shroud (FCT).

**AMPHIBIOUS LIGHTERAGE DEVELOPMENT (2909)** - This project supports development and procurement of technology to develop Navy causeway lighterage. The Improved Navy Lighterage System (INLS) replaces the existing Navy Lighterage (NL) system and supports the US Navy Lighterage recapitalization plan. Current NL will reach the end of its service life and will impact crew safety and operational readiness. INLS will be able to operate in higher sea states and have a longer service life with reduced maintenance costs. INLS will be deployed during Logistic Over The Shore (LOTS) operations, Assault Follow On Echelon (AFOE) operations and Maritime Prepositioning Force (MPF) operations. INLS consists of Warping Tugs, Causeway Ferries, RO/RO Discharge Facilities and Floating Causeway. The design and development for INLS was completed in FY04. Contract for Low Rate Initial Production (LRIP) was awarded in Aug 03. OPEVAL DT/OT took place 4th quarter FY05. In addition, INLS Phase III design process continues with the High Speed Ferry Assault Connector (CFFX) in support of the Seabasing concept.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>			PROJECT NUMBER AND NAME <b>1980 AMPHIB OTHER C2</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>0.158</b>	<b>2.706</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty							

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

**AMPHIB OTHER C2 includes:**

**SACC-A:** The FY05-FY06 Supporting Arms Coordination Center - Automation (SACC-A) program automates the SACC aboard LHA & LHD class ships. Currently the process is manual and voice accomplished, unresponsive to the needs of Marine Forces ashore. Specifically, SACC-A is developing a Ship to Objective Maneuver (STOM) Fire's Command & Control cell for the Amphibious Large Deck ships. SACC-A provides an integrated, auto capability to conduct Marine Expeditionary Brigade level fire support planning, coordination, and execution of all supporting arms fires, including Naval Surface Fires, Tactical Air and Artillery & Mortars ashore. SACC-A integrates other Command & Control systems aboard the ship and ashore to provide maximum situational awareness and a common operating picture.

**AADS:** The FY06 Amphibious Assault Direction System (AADS, AN/KSQ-1) program researches Network Centric Warfare requirements for Amphibious Assault Command and Control, identifies the projected technological advances and requirements of Fleet systems, and identifies the Next Generation AADS operational requirements and capabilities. Technology integration with Expeditionary Strike Group ships is also included.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>	PROJECT NUMBER AND NAME <b>1980 AMPHIP OTHER C2</b>

**B. ACCOMPLISHMENTS/PLANNED PROGRAM**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.158	2.706	0.000
RDT&E Articles Quantity			

**SACC-A:** System Engineering development for spiral acquisition, including requirements definition and lab-based testing; Acquisition and prototype interface development of AFATDS with other systems and installation and test aboard LHA/LHD; DoD documentation program reviews (e.g. ORD revalidation, APB, TEMP, SEMP, ILSP); Programmatic support (e.g. management, plans, schedule, briefs, travel, studies, etc.); shipboard interface and interoperability testing of spiral development, training, and logistics system development, and system integration and shipboard interface/interoperability testing.

**AADS:** System Engineering and software development begin in FY06.

**C. Program Change Summary:**

(U) Funding	FY 2005	FY 2006	FY 2007
(U) FY 2006 President's Budget	0.158	2.748	2.314
(U) FY 2007 President's Budget	<u>0.158</u>	<u>2.706</u>	<u>0.000</u>
(U) Total Adjustments	0.000	-0.042	-2.314
- (U) Summary of Adjustments:			
Eliminate SACC-A Space Reconfiguration	0.000	0.000	-2.314
Revised Rates & Inflation Indices	0.000	0.000	0.000
Appn Reductions SEC. 8125	0.000	-0.013	0.000
Congressional Action 1% Reduction	0.000	-0.029	0.000
Cancelled Accounts Liability	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>
Subtotal	0.000	-0.042	-2.314
(U) Schedule: Not Applicable			
(U) Technical: Not Applicable			



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>	PROJECT NUMBER AND NAME <b>1980 AMPHIB OTHER C2</b>
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
<b><u>SACC-A</u></b>									
OPN Line 098100 Items Under \$5M	0.860	0.645	0.726	0.783	0.817	0.795	0.816	0	5.442
<b><u>AADS</u></b>									
OPN Line 5239 SSDS	0	11.554	10.585	6.746	5.829	1.739	0.016	0	36.469

**SACC-A:** The procurement items for SACC-A include Advanced Field Artillery Tactical Data System (AFATDS), Effect Management Tool (EMT), jam boxes, Automated Distribution Network Systems (ADNS), racks, workstations, Large Screen Color Displays (LSCDs), PICT phones, new Theater Tables, communications devices which will be permanent changeouts to the amphibious ships. These need to be in place in order to permit the connection of the automated SACC capabilities. The operations and maintenance efforts are for program, engineering, and technical support, logistics support and technical assists.

**AADS:** The procurement items for AADS are related to two subsystems: EPLRS and the ship dependent AN/KSQ-1 hardware configurations. Examples of specific items include RT-1720(c) Enhanced PLRS User Unit (EPUU) digital radios, EPLRS Net Control Station (NCS) workstations and other EPLRS equipment.

**E. ACQUISITION STRATEGY:**

The SACC-A effort will develop and field a Naval Fire Control System (NFCS) that satisfies the requirements of naval and supported forces. The NFCS is to be an ACAT III program under Navy management. The AADS strategy is to develop a software interface to ensure integrated communications and joint operations for joint forces.

**F. MAJOR PERFORMERS:**

Field Activities & Locations - Work Performed:

- NSWC DD, Dahlgren, VA - Hardware Development, Systems Engineering, Training, ILS, T&E
- NSWC CSS, Panama City, FL - Hardware Development, System Engineering
- SPAWAR-SD - Hardware Development, System Engineering
- ARMY - Hardware Development

Contractors & Locations - Work Performed:

- TBD - Software Development

Universities & Locations - Work Performed:

R-1 SHOPPING LIST - Item No. 175/4

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-7</b>			0204413N/Amphibious Tactical Support Unit		1980 / AMPHIB OTHER C2							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development	WX	SPAWAR	0.755			0.025	03/06					
Aircraft Integration												
Ship Integration	WX	NSWC DD	3.000	0.011		0.205	02/06					
Ship Suitability												
Systems Engineering	WX	NSWC CSS, APL	0.600			0.265	12/05					
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			4.355	0.011		0.495		0.000		0.000	4.861	
Remarks:												
Development Support												
Software Development	WX	CSS		0.147	12/04	2.211	12/05		12/06		2.358	
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.147		2.211		0.000		0.000	2.358	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: <b>February 2006</b>						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-7</b>			0204413N/Amphibious Tactical Support Un		1980 AMPHIB OTHER C2							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			4.355	0.158		2.706		0.000		0.000	7.219	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																						DATE: <b>February 2006</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>					PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>												PROJECT NUMBER AND NAME <b>1980/AMPHIB OTHER C2</b>											
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Software Development</b>					△	—————			△																			
<b>Systems Engineering</b>					△	—————			△																			

R-1 SHOPPING LIST - Item No. 175/7

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>				PROJECT NUMBER AND NAME <b>1980/AMPHIB OTHER C2</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software Development		1Q - 4Q	1Q, 2Q				
Systems Engineering		1Q - 4Q	1Q - 4Q				

R-1 SHOPPING LIST - Item No.                      175/8

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>			PROJECT NUMBER AND NAME <b>2231 TECHNOLOGY TRANSITION</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>0.000</b>	<b>1.990</b>	<b>1.812</b>	<b>1.840</b>	<b>2.293</b>	<b>2.294</b>	<b>2.325</b>
RDT&E Articles Qty							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** TECHNOLOGY TRANSITION (2231) -

FY06-FY11 TECHNOLOGY TRANSITION: Provides for research efforts on LCAC Future Naval Capabilities (FNC): Current S&T initiatives include the ONR Expeditionary Logistics (EXLOG), LCAC Cargo Gripping Lashings System (STTR), Self Contained Rudder Actuator System (STTR), Advanced structural design for LCAC ramps (SBIR), Personal Transport Module (SBIR), Enhanced Skirt Finger Material (FCT), the Lube Oil Cooler (FCT), and the Composite Shroud (FCT).

R-1 SHOPPING LIST - Item No.

175/9

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204413N/Amphibious Tactical Support Units</b>	PROJECT NUMBER AND NAME <b>2231 / TECHNOLOGY TRANSITION</b>

**B. ACCOMPLISHMENTS/PLANNED PROGRAM**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.990	1.812
RDT&E Articles Quantity			

TECHNOLOGY TRANSFER - Current S&T initiatives include the ONR Expeditionary Logistics (EXLOG), LCAC Cargo Gripping Lashings System (STTR), Self Contained Rudder Actuator System (STTR), Advanced structural design for LCAC ramps (SBIR), Personal Transport Module (SBIR), Enhanced Skirt Finger Material (FCT), the Lube Oil Cooler (FCT) and the Composite Shroud (FCT).

**C. Program Change Summary:**

(U) Funding	FY 2005	FY 2006	FY 2007
(U) FY 2006 President's Budget	0.000	2.020	1.876
(U) FY 2007 President's Budget	<u>0.000</u>	<u>1.990</u>	<u>1.812</u>
(U) Total Adjustments	0.000	-0.030	-0.064
Summary of Adjustments			
Revised rates & inflation indices	0.000	0.000	-0.064
Sec 8125 Revised Economic Assmp	0.000	-0.009	0.000
Congressional Action 1% Reduction	<u>0.000</u>	<u>-0.021</u>	<u>0.000</u>
Subtotal	0.000	-0.030	-0.064
(U) Schedule: Not Applicable			
(U) Technical: Not Applicable			

R-1 SHOPPING LIST - Item No.

175/10

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-7			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0204413N/Amphibious Tactical Support Units			<b>PROJECT NUMBER AND NAME</b> 2231 / TECHNOLOGY TRANSFER			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN Line 098100 LCAC HM&E < 5,000K		5.308	5.914	6.484	6.514	6.768	6.993		37.981
<b>E. ACQUISITION STRATEGY:</b>									
TECHNOLOGY TRANSFER - RDT&E efforts commence in FY06. Multiple contracts and Field Activities will be involved through FY11 to complete the various projects.									
<b>F. MAJOR PERFORMERS:</b>									
Field Activities & Locations - Work Performed:									
NSWC, Bethesda, MD - System engineering, test and evaluation.									
NSWC (CSS) Panama City, FL - System engineering									
NSWC Philadelphia, PA - Systems engineering									
Contractors & Locations - Work Performed:									
TBD									
Universities & Locations - Work Performed									
Not applicable									

R-1 SHOPPING LIST - Item No. 175/11



**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-7</b>			0204413N/Amphibious Tactical Support Units		2231 / TECHNOLOGY TRANSFER							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Component Development	WX/CPAF	Various				0.150	02/05	0.150	01/07	0.600	0.900	
Ship Design												
Ship Suitability												
Systems Engineering	FFP/CPF	Various	2.841			0.550	02/05	0.779	01/07	3.600	7.770	
Training Development												
Licenses												
Tooling												
GFE	WX		0.110								0.110	
Award Fees												
Subtotal Product Development			2.951	0.000		0.700		0.929		4.200	8.780	
Remarks:												
Development Support	WX	Various	2.467			0.685	10/05	0.290	10/06	2.112	5.554	
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses	WX	ONR	0.254								0.254	
GFE												
Award Fees												
Subtotal Support			2.721	0.000		0.685		0.290		2.112	5.808	
Remarks:												

R-1 SHOPPING LIST - Item No. 175/12

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-7</b>			0204413N/Amphibious Tactical Support Un		2231 / TECHNOLOGY TRANSFER							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Various	0.290			0.100	10/05	0.098	10/06	0.400	0.888	
Operational Test & Evaluation	WX	Various	0.029			0.050	10/05	0.050	10/06	0.200	0.329	
Live Fire Test & Evaluation												
Test Assets						0.100	10/05	0.100	10/06	0.400	0.600	
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.319	0.000		0.250		0.248		1.000	1.817	
Remarks:												
Contractor Engineering Support	FFP	VARIOUS	1.195			0.200	10/05	0.194	10/06	0.820	2.409	
Government Engineering Support	WX	VARIOUS	0.812								0.812	
Program Management Support	CPFF	VARIOUS	0.457			0.100	10/05	0.096	10/06	0.400	1.053	
Travel	PD	NAVSEA TRAVEL	0.067			0.055	10/05	0.055	10/06	0.220	0.397	
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			2.531	0.000		0.355		0.345		1.440	4.671	
Remarks:												
Total Cost			8.522	0.000		1.990		1.812		8.752	21.076	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-7</b>					<b>0204413N/Amphibious Tactical Support Units</b>										<b>2231 / TECHNOLOGY TRANSFER</b>													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones	MS B																											
Contract Award	△																											
LCAC S&T Initiatives					△																							△

R-1 SHOPPING LIST - Item No. 175/14

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT <b>0204413N/Amphibious Tactical Support Units</b>			PROJECT NUMBER AND NAME <b>2231 / TECHNOLOGY TRANSFER</b>		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B							
Contract Award	1Q						
LCAC S&T Initiatives		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 175/15

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA7</b>	PROGRAM ELEMENT NAME AND NUMBER <b>0204413N/Amphibious Tactical Support Units</b>	PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909
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COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
Project Cost	3.422	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.422
RDT&E Articles Qty	30	N/A	N/A	N/A	N/A	N/A	N/A		

**A. Mission Description and Budget Item Justification:**

This project supports development and procurement of technology to develop Navy causeway lighterage. The Improved Navy Lighterage System (INLS) replaces the existing Navy Lighterage (NL) system and supports the US Navy Lighterage recapitalization plan. Current NL will reach the end of its service life and will impact crew safety and operation readiness. INLS will be capable of operations in higher sea states, have a greater service life, and have reduced maintenance costs. INLS will be deployed during Logistic Over The Shore (LOTS) operations, Assault Follow On Echelon (AFOE) operations and Maritime Prepositioning Force (MPF) operations. INLS consists of Warping Tugs, Causeway Ferries, RO/RO Discharge Facilities and Floating Causeway. The design and development for INLS was completed in FY04. Contract for Low Rate Initial Production (LRIP) was awarded in Aug 03. OPEVAL DT/OT took place 4th quarter in FY05. In addition, INLS Phase III design process continues with the High Speed Ferry Assault Connector (CFFX) in support of the Seabasing concept.

**B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

FY2005: \$2.442M for INLS OPEVAL and \$1.0M for CFFX

	FY2005	FY2006	FY2007
INLS OPEVAL	2.422	0.000	0.000
CFFX	1.000	0.000	0.000
RDT&E Articles Qty	30	N/A	N/A

Operation and evaluation testing began in FY2005.

CFFX Technology development in FY2005, contract awarded April 05.

R-1 SHOPPING LIST - Item No. 175-16

# UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification  
(page 16 of 21)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA7</b>		PROGRAM ELEMENT NAME AND NUMBER <b>0204413N/Amphibious Tactical Support</b>			PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909					
 <b>C. Program Change Summary:</b>										
		FY2005	FY2006	FY2007						
	(U) FY 2006 President's Budget	3.510	0.000	0.000						
	(U) FY 2007 President's Budget	3.422	0.000	0.000						
	<u>Total Adjustments</u>	<u>-0.088</u>	<u>0.000</u>	<u>0.000</u>						
Summary of Adjustments										
	Other general provisions	-0.088	0.000	0.000						
		<u>-0.088</u>	<u>0.000</u>	<u>0.000</u>						
 <b>D. Other Program Funding Summary (INLS Development)</b>										
		FY2005	FY2006	FY2007	FY2008	FY2009	FY20010	FY2011	To Complete	Total Cost
	CESE Line 6033 Amphib Equip (OPN)	11.5	149.700	86.300	104.800	13.900	0	0	0	366.2
	(U) Related RDT&E: NA									
<b>E. Acquisition Strategy (JMLS/INLS):</b>		LRIP contract was awarded in Aug 03 with OPN funds. Operation and evaluation testing will begin in FY2005. CFFX technology development began in FY05. Contract awarded April 05.								
 <b>F. Major Performer:</b>										
Activities & Location		Work Performed								
OPTEVFOR, Norfolk, VA		OPEVAL of LRIP Quantities								
Art Anderson Associates		CFFX Technology Development								
US Marine Corp Camp Pendleton CA		Developmetal Testing of INLS Equipment								
NFESC Port Huneme CA		Developmetal Testing of INLS Equipment								
Titan Corp CA		OPEVAL of LRIP Quantities								

R-1 SHOPPING LIST - Item No. 175-17

## UNCLASSIFIED

Exhibit R-2a, RD TEN Project Justification  
(page 17 of 21)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)						DATE: <b>February 2006</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA7</b>			PROGRAM ELEMENT <b>0204413N/Amphibious Tactical Support Units</b>			PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development										0.000	0.000	
Ancillary Hardware Development										0.000	0.000	
Systems Engineering	RCP	AAA - CA		1.000	04/05					0.000	1.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.000		0.000		0.000		0.000	1.000	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support										0.000	0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 175-18

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Exhibit R-3 Cost Analysis (page 2)				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N</b>		PROGRAM ELEMENT <b>0204413N/Amphibious Tactical Support Units</b>		PROJECT NAME AND NUMBER Amphibious Lighterage Development/2909								
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NFESC		0.350	04/05					0.000	0.350	
Developmental Test & Evaluation	MIPR	USMC		0.100	06/05						0.100	
Operational Test & Evaluation	WR	OPTEVFOR	0.050	1.802	12/05	\$0.000		0.000		0.000	1.852	
Operational Test & Evaluation	RCP	Titan		0.170	03/05						0.170	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.050	2.422		0.000		0.000		0.000	2.472	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.050	3.422		0.000		0.000		0.000	3.472	
Remarks:												

R-1 SHOPPING LIST - Item No. 175-19



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-7</b>					<b>0204413N/Amphibious Tactical Support Units</b>										Amphibious Lighterage Development/2909													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>INLS Acquisition Milestones</b>						IOC ★	FRP ▲																					
<b>Test &amp; Evaluation Milestones</b>																												
<b>Operational Test</b>						OPEVAL ▬																						
<b>Production Milestones</b>																												
<b>LRIP AUG 2003</b>																												
<b>FRP FY 09</b>																												
<b>Deliveries</b>																												
	LRIP Deliveries																											

R-4 Schedule Profile - Item No. 175-20

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-7</b>		<b>PROGRAM ELEMENT</b> <b>0204413N/Amphibious Tactical Support</b>			<b>PROJECT NUMBER AND NAME</b> Amphibious Lighterage Development/2909			
<b>Schedule Profile (MHP)</b>		<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
Start Low-Rate Initial Production I (LRIP) 4Q FY03								
Low-Rate Initial Production Delivery		3Q						
Operational Test & Evaluation (OPEVAL)		4Q						
Full Rate Production (FRP) Decision			1Q					
Full Rate Production Start			2Q					
Full Operation Capability							2Q	
CFFX - SBIR Phase III Continues		2Q						
CFFX Technology Final Report		4Q						

R-4a Schedule Detail - Item No 175-21

EXHIBIT R-2, RDT&E Budget Item Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						R-1 ITEM NOMENCLATURE 0204571N, CONSOLIDATED TRAINING SYSTEMS DEV		
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	20.322	43.615	17.857	21.874	20.425	22.767	26.036	
0604 TRNG RANGE & INST DEV (TRID)	1.965	2.614	2.970	3.795	3.877	4.283	4.089	
1427 SURFACE TACTICAL TEAM TRAINER (STTT)	8.135	5.685	5.466	5.803	5.954	6.049	6.160	
2124 AIR WARFARE TRAINING DEVEP	1.412	1.420	1.687	1.726	1.763	1.801	1.840	
3087 TOTAL SHIP TRAINING SYSTEM (TSTS)	1.342	15.852			5.790	5.195	4.726	
3093 TACTICAL COMBAT TRAINING SYSTEM (TCTS)	7.468	16.044	7.734	10.550	3.041	5.439	9.221	
9999 Congressional Adds		2.000						

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

The Surface Tactical Team Trainer (STTT) will develop the Battle Force Tactical Training (BFTT) System to provide realistic Combat System level team training including a means to link surface ships together for coordinated Unit and Battle Group level training using Distributed Interactive Simulation (DIS). The migration of selected modules of the BFTT software to Windows NT from UNIX OS is underway. The Congressional adds initiate the development of the Distributed Shipboard Classroom which provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. The Navigation Seamanship and Shiphandling Training (NSST) System effort develops integrated COTS based navigation and shiphandling trainers to support navigation team training in Fleet Concentration Areas, as well as developing and integrating shipboard virtual reality shiphandling trainers for use onboard surface ships. Total Ship Training System (TSTS) is a Pre-Planned Program Improvement (P3I) to the BFTT system that connects combat system, navigation/ship control, engineering/propulsion, and damage control training, simultaneously exercising all primary elements of the crew in realistic combat-like conditions. TSTS will leverage off the technical architecture of the current BFTT configuration to provide expanded support for a total ship training capability.

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

The AWTD program provides development of many aviation training systems, including mission rehearsal simulation technologies and the Aviation Training Technology Integration Facility (ATTIF).

The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the TACTS and LATR system. 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 is planned 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 datalink.


EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N /		0204571N, CONSOLIDATED TRAINING SYSTEMS					0604, TRNG RANGE & INST DEV (TRID)		
	BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
0604 TRNG RANGE & INST DEV (TRID)	1.965	2.614	2.970	3.795	3.877	4.283	4.089		
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project develops specialized instrumentation 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 System (IWTS), Remote Strafe Scoring System (RSSS), and weapon and countermeasure simulations for use with various range training systems.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 0604, TRNG RANGE & INST DEV (TRID)
--	-------------	---	---

B. ACCOMPLISHMENTS / PLANNED PROGRAM: Large Area Tracking Range (LATR)

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.002	1.490	1.574	
RDT&E Articles Qty				

Developed Block 4.0 software upgrade, analyzed range integration requirements, and developed hardware upgrades. Redesigned, integrated and tested modules to eliminate obsolete components on the LATR power conditioner. Completed operational test and evaluation and integration of Block 4.0 software upgrade. Complete design, integration and test of LATR Block software 5.0/5.1 baseline upgrade. Complete design, integration, and test of participant instrumentation packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conduct and complete vulnerability testing of the Ground System Rehost. Conduct and complete security testing and assessment for LATR system certification and accreditation for Ground System Rehost. Initiate and complete development, test and integration of software and hardware modifications to system test sets. Develop interface software using Test and Training Enabling Architecture (TENA) to increase Tactical Training Range systems interoperability with other services training instrumentation.

Combat Training Systems Development

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.963	1.124	1.396	
RDT&E Articles Qty				

Developed additional training capabilities for the Control and Computational Subsystem (CCS), Personal Computer Based Joint Display Subsystem (JDS), and developed a formalized interface between the CCS and Large Area Tracking Range (LATR). Complete Semi-annual CCS Block upgrades. Complete Test Set Upgrade and system rehost. Complete formalization of CCS/LATR integration. Develop stand alone Electronic Warfare Processor (EW PROC). Enhance capability for Advanced Systems Operator Console (ASOC), Tactical Aircrew Combat Training System Communication Protocol Analyzer (TCPA) and enhanced Radar Display Subsystem (RADS).

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 0604, TRNG RANGE & INST DEV (TRID)
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.031	2.654	2.984
Current President's Budget:	1.965	2.614	2.970
Total Adjustments	-0.066	-0.040	-0.014

Summary of Adjustments

Congressional Undistributed Reductions	-0.002	-0.028	
Economic Assumptions		-0.012	0.015
Program Adjustments	-0.064		-0.029
Subtotal	-0.066	-0.040	-0.014

Schedule:

LATR recertification moved from 3Q FY05 to 2Q FY06.

Technical: Not Applicable.

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /

BA 7

0204571N, CONSOLIDATED TRAINING SYSTEMS

0604, TRNG RANGE & INST DEV (TRID)

D. OTHER PROGRAM FUNDING SUMMARY:

E. 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 contractors whose products and services are obtained by means of competitive awards, Indefinite Deliveries/Indefinite Quantity (IDIQ), and cost-type contracts. Individual delivery orders are awarded for specific development efforts.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0204571N, CONSOLIDATED TRAINING SYSTEMS				0604, TRNG RANGE & INST DEV (TRID)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Sys Eng/Software/Hardware Development	VARIOUS	VARIOUS	82.995	.718	VARIOUS	1.086	VARIOUS	1.320	VARIOUS	6.965	93.084	
Systems Eng	WX	NAWCAD, PATUXENT RIVER MD		.550	1/10/2005	1.010	12/1/2005	1.061	12/1/2006		2.621	
Systems Eng	VARIOUS	VARIOUS		.160	VARIOUS	.200	VARIOUS	.200	VARIOUS	6.900	7.460	
SUBTOTAL PRODUCT DEVELOPMENT			82.995	1.428		2.296		2.581		13.865	103.165	
Remarks:												
SUPPORT												
Develop Support Equip	TBD	VARIOUS	10.377							.100	10.477	
Software Development	VARIOUS	VARIOUS		.375	VARIOUS	.100	VARIOUS	.100	VARIOUS	.549	1.124	
SUBTOTAL SUPPORT			10.377	.375		.100		.100		.649	11.601	
Remarks:												
TEST & EVALUATION												
Dev Test & Eval	TBD	NAWCWD, CHINA LAKE CA	5.145	.010	11/5/2005						5.155	
Oper Test & Eval	TBD	NAWCWD, CHINA LAKE CA		.005	11/5/2005						.005	
SUBTOTAL TEST & EVALUATION			5.145	.015							5.160	
Remarks:												
MANAGEMENT												
PM SUPPORT-TSD ORLANDO	VARIOUS	VARIOUS	2.877	.137	VARIOUS	.218	VARIOUS	.289	VARIOUS	1.556	5.077	
Program Mgmt Sup	TBD	NAWCWD, CHINA LAKE CA		.010	VARIOUS						.010	
SUBTOTAL MANAGEMENT			2.877	.147		.218		.289		1.556	5.087	
Remarks:												
Total Cost			101.394	1.965		2.614		2.970		16.070	125.013	
Remarks:												



CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE:

February 2006

APPROPRIATION/BUDGET / PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA-7

0204571N Consolidated Training Systems Development

0604 (TRID) Large Area Tracking Range

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
LATR GPS REC UPGRADE																												
LATR ADIU UPGRADE																												
LATR LDP REHOST																												
LATR Recertification																												
LATR RW Resize																												
Block 5.0 LATR Upgrade																												
Block 5.1 LATR Upgrade																												
Block 6.0 Upgrade																												
Block 6.1 Upgtade																												
Block 6.2 Upgrade																												
LATR/TCTS Tech Transfer																												

<b>CLASSIFICATION:</b>							
Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>				PROJECT NUMBER AND NAME 0604 (TRID) Large Area Tracking Range			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
LATR GPS REC UPGRADE	4Q	1Q-2Q					
LATR ADIU UPGRADE	4Q	1Q-2Q					
LATR LDP Rehost		1Q-4Q	1Q-2Q				
LATR Recertification		2Q-4Q					
LATR RW Resize		3Q-4Q	1Q-4Q				
Block 5.0 LATR Upgrade IOC	1Q						
Block 5.1 LATR Upgrade IOC	3Q-4Q	1Q-2Q					
Block 6.0 LATR Upgrade IOC		3Q-4Q	1Q-2Q				
Block 6.1 LATR Upgrade IOC			3Q-4Q	1Q-2Q			
Block 6.2 LATR Upgrade IOC				3Q-4Q	1Q-2Q		
LATR/TCTS Tech Transfer					3Q-4Q	1Q-4Q	1Q-2Q

EXHIBIT R4, Schedule Profile												DATE: February 2006																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROJECT NUMBER AND NAME 0604 (TRID) Combat Training Systems Development																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
JDS IOC	[Bar from Q1 2005 to Q4 2005]																											
Semi-Annual Blk Upgrades	[Bar from Q2 2005 to Q4 2009]																											
Semi-Annual Blk Upgrades	[Bar from Q1 2005 to Q4 2009]																											
LATR/TACTS Interface	[Bar from Q1 2005 to Q4 2009]																											
Test Set Rehost Dev	[Bar from Q1 2005 to Q2 2005]																											
PDR	[Bar from Q1 2005 to Q2 2005]																											
CDR	[Bar from Q1 2005 to Q2 2005]																											
T&E	[Bar from Q1 2005 to Q2 2005]																											
IOC	[Bar from Q1 2005 to Q2 2005]																											
Semi-Annual Blk Upgrades	[Bar from Q2 2005 to Q4 2009]																											
EW Processor	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q1 2005 to Q4 2009]																											
CDR	[Bar from Q3 2005 to Q4 2006]																											
T&E	[Bar from Q3 2005 to Q4 2006]																											
IOC	[Bar from Q3 2005 to Q4 2006]																											
Semi-Annual Blk Upgrades	[Bar from Q4 2006 to Q4 2009]																											
ASOC Upgrade	[Bar from Q1 2005 to Q4 2009]																											
TACTS Com Pro Anal	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q1 2005 to Q4 2009]																											
CDR	[Bar from Q3 2005 to Q4 2006]																											
T&E	[Bar from Q3 2005 to Q4 2006]																											
IOC	[Bar from Q3 2005 to Q4 2006]																											
Semi-Annual Blk Upgrades	[Bar from Q4 2006 to Q4 2009]																											
Radar Display Subsystem	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q1 2005 to Q4 2009]																											
CDR	[Bar from Q3 2005 to Q4 2006]																											
T&E	[Bar from Q3 2005 to Q4 2006]																											
IOC	[Bar from Q3 2005 to Q4 2006]																											
Semi-Annual Blk Upgrades	[Bar from Q4 2006 to Q4 2009]																											
TTR Common Display	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q4 2007 to Q4 2008]																											
CDR	[Bar from Q2 2008 to Q4 2008]																											
T&E	[Bar from Q3 2008 to Q4 2008]																											
IOC	[Bar from Q4 2008 to Q4 2009]																											
Link 16 TACTS Intregation	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q3 2005 to Q4 2006]																											
CDR	[Bar from Q3 2005 to Q4 2006]																											
T&E	[Bar from Q3 2005 to Q4 2006]																											
IOC	[Bar from Q3 2005 to Q4 2006]																											
F/A-18 E/F TACTS GPS	[Bar from Q1 2005 to Q4 2009]																											
PDR	[Bar from Q3 2005 to Q4 2006]																											
CDR	[Bar from Q3 2005 to Q4 2006]																											
T&E	[Bar from Q3 2005 to Q4 2006]																											
IOC	[Bar from Q3 2005 to Q4 2006]																											

CLASSIFICATION:								
Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>					PROJECT NUMBER AND NAME 0604 (TRID) Combat Training Systems Development			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
JDS IOC	1Q							
Semi-annual Block Upgrades	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
LATR/TACTS Interface	1Q-3Q							
Test Set Rehost	1Q							
PDR								
CDR								
T&E	1Q							
IOC	1Q							
Semi-Annual Block Upgrades	3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
EW Processor								
PDR	1Q-3Q							
CDR	4Q	1Q-2Q						
T&E		2Q-4Q						
IOC		4Q						
Semi-Annual Block Upgrades			1Q-4Q	1Q-4Q	1Q-4Q			
ASOC Upgrade	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
TACTS Com Pro Anal								
PDR	1Q-3Q							
CDR	4Q	1Q-2Q						
T&E		2Q-4Q						
IOC		4Q						
Semi-Annual Block Upgrades			1Q-4Q	1Q-4Q	1Q-4Q			
Radar Display Subsystem								
PDR	1Q-3Q							
CDR	4Q	1Q-2Q						
T&E		2Q-4Q						
IOC		4Q						
Semi-Annual Block Upgrades			1Q-4Q	1Q-4Q	1Q-4Q			
TTR Common Display								
PDR				1Q-3Q				
CDR				3Q-4Q	1Q			
T&E					1Q-3Q			
IOC					3Q-4Q	1Q		
Link 16 TACTS Integration								
PDR		1Q-3Q						
CDR		4Q	1Q-2Q					
T&E			3Q-4Q	1Q-2Q				
IOC				3Q-4Q				
Link 16 TACTS Integration								
PDR		1Q-3Q						
CDR		4Q	1Q-2Q					
T&E			3Q-4Q	1Q-2Q				
IOC				3Q-4Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/3087)			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		9.477	21.537	5.466	5.803	11.744	11.244	10.886
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p><b>*Includes project units 1427/3087</b></p> <p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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 Organization. BFTT provides a baseline capability/system that meets the Operational Requirements Document (ORD). Stimulators/Simulators (STIM/SIM) provides standardized Radio Frequency (RF), Intermediate Frequency (IF), and/or Digital injection into surface ship radars and fire control systems for training of shipboard operators/teams as part of the BFTT System. The Distributed Shipboard Classroom provides a capability for shipboard instructors to utilize current online multimedia training technology to improve the quality, quantity and effectiveness of mission critical, military, safety and administrative training mandated by OPNAV, TYCOM and Fleet directives. It initiates development of the active electronic countermeasures training capability to BEWT and to the BFTT software. NSST System effort develops integrated COTS based navigation and shiphandling trainers to support navigation team training in Fleet Concentration Areas, as well as developing and integrating shipboard virtual reality shiphandling trainers for use onboard surface ships. The Total Ship Training System (TSTS) addition to BFTT connects combat system, navigation/ship control, engineering/propulsion, and damage control training, simultaneously exercising all primary elements of the crew in realistic combat-like conditions.</p>								

R-1 SHOPPING LIST - Item No.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>														
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/3087)														
<b>B. Accomplishments/Planned Program</b>																
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="width:15%;">FY 05</th> <th style="width:15%;">FY 06</th> <th style="width:15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">5.653</td> <td style="text-align: center;">5.685</td> <td style="text-align: center;">5.466</td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>						FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	5.653	5.685	5.466	RDT&E Articles Quantity	N/A	N/A	N/A
	FY 05	FY 06	FY 07													
Accomplishments/Effort/Subtotal Cost	5.653	5.685	5.466													
RDT&E Articles Quantity	N/A	N/A	N/A													
<div style="border: 1px solid black; padding: 10px; min-height: 150px;"> <p>Develop conjunctive Training Systems improvements and interface upgrades in response to evolving Combat System capabilities. Respond to Fleet prioritized Training Systems capabilities in multiple mission areas including AAW, SUW, ASW, BMD, EW areas.</p> </div>																
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="width:15%;">FY 05</th> <th style="width:15%;">FY 06</th> <th style="width:15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">1.501</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>						FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	1.501	0.000	0.000	RDT&E Articles Quantity	N/A	N/A	N/A
	FY 05	FY 06	FY 07													
Accomplishments/Effort/Subtotal Cost	1.501	0.000	0.000													
RDT&E Articles Quantity	N/A	N/A	N/A													
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"> <p>Funding is provided for the software development for the Multi-Mission Team Trainer (MMTT) Phase 2. The MMTT Phase I replaced the Device S14A13 Tactical Advanced Simulated Warfare Integrated Trainer (TASWIT), which modernized the outdated software and minimizes the life cycle support costs. Phase 2 replaces the Device 20F15 Tactical Advanced Combat Direction and Electronic Warfare (TACDEW) System, which drastically reduces the life cycle support of the Fleet's combat system level and battle group level team training capability. Effort was complete in FY05.</p> </div>																

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/3087)		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.981	0.000	0.000
RDT&E Articles Quantity		N/A	N/A	N/A
Funding is being provided specifically for TOMAHAWK operator and team training development and integration into BFTT. Effort was complete in FY05.				
		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.342	15.852	0.000
RDT&E Articles Quantity		NA	NA	NA
The Total Ship Training System (TSTS) connects combat system, navigation/ship control, engineering/propulsion, and damage control training, simultaneously exercising all primary elements of the crew in realistic combat-like conditions. TSTS is inclusive of the Navigation Seamanship & Shiphandling Trainer (NSST); Engineering Operations & Casualty Control Trainer (EOCCT); Combat System Casualty Control Trainer (CSCCT); Damage Control Training & Management System (DCTMS); Training Exercise & Management System (TMS); Naval Gunfire Support Trainer (NGST) (formerly VAST); and the Augmented Reality Fire Fighting Trainer (ARFF). TSTS efforts include system/software engineering, software design, software development, system integration and test. FY05 Congressional Plus up of \$1M provided to analyze requirements, design, develop and deliver a functional prototype with related documentation for elements of TSTS. Prototypes of the various TSTS hardware and software subsystems will be designed and documented in a design specification including, Personnel Management subsystem, Communication Audio Capture subsystem, and the Video Capture subsystem.				

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development		
<b>B. PROGRAM CHANGE SUMMARY:</b>			
Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	9.569	21.864	9.914
Current FY07 PRESBUD Budget:	9.477	21.537	5.466
Total Adjustments	-0.092	-0.327	-4.448
Summary of Adjustments			
Small Business Innovation	-0.077		
Program Adjustments	-0.005		-4.532
Economic Assumptions		-0.099	0.084
Execution Adjustments	-0.010		
Congressional Undistributed Reductions		-0.228	
Subtotal	-0.092	-0.327	-4.448





CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 1427 Surface Tactical Team Trainer (STTT) (1427/3087)
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**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 276200 (Surface BFTT/TSTS portion only)	34.252	34.56	13.404	27.045	34.389	37.44	28.486	0	209.576

**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.


CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Training Systems Development				1427 Surface Tactical Team Trainer (STTT) (1427/3087)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development		NAVSEA 02	11.498			0.600		1.163		1.119	TBD		14.380	14.380
Ancillary Hardware Development	*	NAVSEA 02	0.999					1.163		0.000			2.162	2.162
Component Development	*												0.000	0.000
Ship Integration								0.291		0.279	TBD			0.570
Ship Suitability														0.000
Systems Engineering	*	PHD / NUWC Newport / CDSA / NSWC Crane / NAVSSES / NAVSEA 02	23.531			1.127	01/05	2.463	01/06	0.830	TBD	Continuing	Continuing	N/A
Training Development														0.000
Licenses	*	CDSA	3.663			0.142	01/05							3.805
Tooling														0.000
GFE			2.497									0.000	2.497	2.497
Award Fees			0.357									0.000	0.357	0.357
Subtotal Product Development			42.544			1.869		5.080		2.228		Continuing	Continuing	
Remarks:														
*WX/RX/RCP														
Development Support														0.000
Software Development	*	NAWC Orlando / NAVSSES / CDSA / NAVSEA 02	49.634			5.804	01/05	10.283	01/06	2.588	TBD	Continuing	Continuing	N/A
Training Development														0.000
Integrated Logistics Support														0.000
Configuration Management														0.000
Technical Data	*	NAWC Orlando	11.072			0.946	01/05							12.018
GFE														0.000
Award Fees														0.000
Subtotal Support			60.706			6.750		10.283		2.588		Continuing	Continuing	
Remarks:														
*WX/RX/RCP														

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Training Systems Development				1427 Surface Tactical Team Trainer (STTT) (1427/3087)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	*	NAWC Orlando / CDSA / NAVSSES / NAVSEA 02	5.469			0.426	01/05	4.174	01/06	0.071	TBD	Continuing	Continuing	N/A
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			5.469			0.426		4.174		0.071		Continuing	Continuing	N/A
Remarks:														
*WX/RX/RCP/IPR														
Contractor Engineering Support													0.000	
Government Engineering Support	*	CDSA / NAVSSES	4.315			0.432	01/05	2.000	01/06	0.579	TBD	Continuing	Continuing	N/A
Program Management Support													0.000	
Travel													0.000	
Labor (Research Personnel)													0.000	
SBIR Assessment													0.000	
Subtotal Management			4.315			0.432		2.000		0.579		Continuing	Continuing	N/A
Remarks:														
*WX/RX/RCP														
Total Cost			113.034	0.000		9.477		21.537		5.466		Continuing	Continuing	
Remarks:														

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0204571N, CONSOLIDATED TRAINING SYSTEMS</b>					PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
2124 AIR WARFARE TRAINING DEVEP	1.412	1.420	1.687	1.726	1.763	1.801	1.840		
RDT&E Articles Qty									

**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 (\$479M), the MH-60R/S master plan, the Multi-Mission Maritime Aircraft (MMA) program, and will support the development and design of future naval aviation training/mission rehearsal systems. Tasks include: 1) Advanced training systems specification development to provide for modular, High Level Architecture (HLA) compliant, high fidelity Distributed Mission Training (DMT) and mission rehearsal capabilities, ashore and afloat. Mission rehearsal is defined as the practice of planned tasks and functions critical to mission success using a true-to-life, interactive representation of the expected operating environment. Technologies to be developed and integrated include: 1) DMT weapons server, weather server, common mission training stations, high resolution helmet mounted, and/or flat panel displays, photographic quality image generation, portable source initiative (PSI) database reuse, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, physics-based IR stimulations; and 2) the Aviation Training Technology Integration Facility (ATTIF), which is a man-in-the-loop test bed for the integration of software, hardware, and networked systems. New technologies will include intelligent computer generated forces (CGFs) as virtual and constructive entities for threat or friendly interaction. Additionally, "man-in-the-loop" intelligent agents will be integrated to the ATTIF, including an HLA node for participation and benchmarking fleet exercises in the synthetic battle space. This ATTIF capability provides a window to fleet aviators for critical comment, evaluation, and fine tuning of new and innovative technologies before final transition to the Fleet. Debrief/AAR and intelligent training support tools are focused on human performance enhancements for Fleet readiness and distributed mission training exercises.

Metrics - These technology transitions will both lower total ownership costs (TOC) of the training systems (life-cycle visual system database re-use, reduced instructor manning profiles, software-based fidelity enhancements), and increase fleet readiness by enhancing overall system fidelity to the projected operating environments. NASMP/MCSMP readiness improvements are conservatively forecast at 14-28% following associated technology upgrades to stand alone, or networked simulators.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.353	.327	.417	
RDT&E Articles Qty				

Develop and integrate ATTIF modular architecture components for Navy DMT, deployable E-2C crew station, intelligent synthetic forces, and tactical scenario control. Demonstrate low-cost DMT configurations, while maintaining or increasing fidelity. Demonstrate low cost training and mission rehearsal configurations and evaluate variable fidelity cockpits. Demonstrate instructor support technology including advanced scenario generation, multi-SAF control, automated measures of performance (MOP), and debrief/AAR products for NASMP. Analyze GOTS/COTS alternatives for network centric warfare connectivity in the simulated battlespace, while reducing training system life cycle costs.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.494	.369	.329	
RDT&E Articles Qty				

Integrate IR (NVG & Forward Looking Infra-Red (FLIR) sensor simulation) with Sensor Host government software. Perform risk reduction, integration and productization of Sensor host for Navy DMT and legacy devices. Demonstrate GOTS capability for cost-effective database materialization, and develop PSI/RSD specifications for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Develop texture storage, PSI material reference processes/standards, and automated applications for R/T publishing, R/T shadows, R/T combat effects, and very high resolution visuals.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.268	.355	.486	
RDT&E Articles Qty				

Develop/specify and evaluate intelligent training support tools (ITST) for application to NASMP, MH-60R, MMA, and large scale coalition-level battle exercises. Specify, test and integrate human performance-centered design into NASMP common components, the ATTIF/DMT testbed, and deployable systems. Develop automated performance measurement and after-action review (AAR) specifications and products that increase instructor efficiency and training efficacy in a reduced instructor manning environment.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT
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	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.297	.369	.455
RDT&E Articles Qty			

Provide for upgraded and modular Mission Training Station (MTS) designs to lower NASMP/platform simulator life-cycle costs, improve instructor effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate ATTIF modular architecture components for F/A-18 cockpit avionics, MH-60R avionics, intelligent instructor operator agents, small footprint E-2C, TACAIR/MMA common GUI initiatives, and intelligent synthetic forces. Upgrade common IOS/MTS human interface to be Joint Mission Planning System (JMPS) compatible, next generation threat system (NGTS) compatible, MCSMP TEN compatible, and JSAF compatible, thereby maximizing ROI for mission training station-related technology investments for multi-platform exercises.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.458	1.442	1.742
Current BES / President's Budget:	1.412	1.420	1.687
Total Adjustments	-0.046	-0.022	-0.055

Summary of Adjustments

Congressional Undistributed Reductions	-0.017	-0.015	
Economic Assumptions		-0.007	0.009
Program Adjustments	-0.029		-0.064
Subtotal	-0.046	-0.022	-0.055

Schedule:

Technical: Not Applicable.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN Line 22. BA-7 BLI 0705 Common Ground Equipment (USMC Federation Simulators)	0.000	19.415	31.616	23.829	39.629	32.993	31.723		179.205
APN Line 16. BA-7 BLI 0705 Common Ground Equipment (Fleet Aircrew Simulator Training (FAST))	53.743	86.026	50.359	51.375	51.922	54.972	51.669		400.066

Related RDT&E

(U) P.E. 0604245N, Project # H2279, Sub-Project Title: USMC H-1 Upgrades

E. ACQUISITION STRATEGY:

Air Warfare Training Development (AWTD) is a joint 6.4 R&D technology transition team, tied closely to the Navy and Marine Corps Aviation Simulation Master Plans. A true, multidisciplinary, joint Integrated Product Team (IPT) approach is utilized through a combination of reimbursable and direct cite/MIPR contract processes to accomplish the IPT's principal objectives. These technology transitions continue to successfully target improvements in fleet readiness, and reductions in total system life cycle costs. AWTD R&D investment directly supports achievement of cost-wise readiness metrics for the Naval Aviation Training enterprise team.



**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7		PROGRAM ELEMENT 0204571N, CONSOLIDATED TRAINING SYSTEMS				PROJECT NUMBER AND NAME 2124, AIR WARFARE TRAINING DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
System Engineering	SS-CPFF	L3 Communications Corp. Arlington TX	3.775	.360	2/25/2005	.350	VARIOUS	.550	VARIOUS	2.200	7.235	7.235
System Engineering	SS-FFP	Information Network Systems Inc. PA		.148	1/14/2005	.698	VARIOUS	.763	VARIOUS	3.272	4.881	4.881
System Engineering	SS-FFP	Aptima Woburn MA		.164	1/14/2005						.164	.164
System Engineering	WX	NAWCTSD, ORLANDO	5.104	.343	1/1/2005						5.447	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>8.879</b>	<b>1.015</b>		<b>1.048</b>		<b>1.313</b>		<b>5.472</b>	<b>17.727</b>	

Remarks:

<b>SUPPORT</b>												
Develop Support Equipment	SS-FFP	CACI, Inc. Alexandria VA	.857	.145	12/8/2004	.150	VARIOUS	.150	VARIOUS	.711	2.013	2.013
<b>SUBTOTAL SUPPORT</b>			<b>.857</b>	<b>.145</b>		<b>.150</b>		<b>.150</b>		<b>.711</b>	<b>2.013</b>	<b>2.013</b>

Remarks:

<b>TEST &amp; EVALUATION</b>												
Developmental Test and Evaluation	WX	NAWCAD, PATUXENT RIVER MD	4.833	.240	1/1/2005	.207	VARIOUS	.209	VARIOUS	.912	6.401	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			<b>4.833</b>	<b>.240</b>		<b>.207</b>		<b>.209</b>		<b>.912</b>	<b>6.401</b>	

Remarks:

<b>MANAGEMENT</b>												
Travel	TO	NAVAIR HQ, PATUXENT RIVER MD	.164	.012	1/2/2005	.015	1/1/2006	.015	1/1/2007	.251	.457	
<b>SUBTOTAL MANAGEMENT</b>			<b>.164</b>	<b>.012</b>		<b>.015</b>		<b>.015</b>		<b>.251</b>	<b>.457</b>	

Remarks:

<b>Total Cost</b>			<b>14.733</b>	<b>1.412</b>		<b>1.420</b>		<b>1.687</b>		<b>7.346</b>	<b>26.598</b>	
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Remarks:

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CLASSIFICATION:																																			
EXHIBIT R4, Schedule Profile																				DATE:															
APPROPRIATION/BUDGET ACTIVITY																				PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME							
RDT&E, N / BA-7																				0204571N/Consolidated Training Systems Development								2124/Air Warfare Training Development							
Fiscal Year		2005				2006				2007				2008				2009				2010				2011									
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
NASMP																																			
Acquisition																																			
6.4 RDT&E Milestones																																			
ATTIF MOD Architecture																																			
ATTIF Integr. & modifications																																			
Software (specifications & GOTS)																																			
Weapons Server Software																																			
NGTS Common GUI																																			
C-DMTS (ATTIF Integr.) (3)																																			
Intelligent Trng Support Tools (Maritime)																																			
Test & Evaluation																																			
Milestones																																			
WEAPS server Oceana/Lemoore																																			
WEAPS Server Maritime (Base/H-60R)																																			
C-DMTS Spec/Demo																																			
ITST AAR toolset DEMO																																			
Sensor stimulation (3)																																			
Sensor Host Specs (2)																																			
Combat/Environ. effects																																			
Helmet-mounted cueing w/sensor fusion																																			
Super resolution IGs w/sensors																																			
Deployed SIMS (DMT/Sensor capable)																																			
MMA/NUCAV JSF DMT specs/Demo																																			
Production Milestones																																			
N/A See above transitions to NASMP																																			



EXHIBIT R-2a, RDT&E Project Justification

DATE:  
February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N /		0204571N, CONSOLIDATED TRAINING SYSTEMS					3093, TACTICAL COMBAT TRAINING SYSTEM (TCTS).	
BA 7		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
COST (\$ in Millions)								
3093 TACTICAL COMBAT TRAINING SYSTEM (TCTS).		7.468	16.044	7.734	10.550	3.041	5.439	9.221
RDT&E Articles Qty		2	3	1				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Combat Training System will provide the Navy a replacement for major portions of the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) system. 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 is planned 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 approved program rebaseline on May 23, 2005.

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 3093, TACTICAL COMBAT TRAINING SYSTEM (TCTS).
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	7.468	16.044	7.734
RDT&E Articles Qty	2	3	1

Qualify and complete the NDI Rangeless Pod system for use at small range. Develop and deliver Integrated Logistics products for fielding the NDI pod at NAS Key West. Develop F/A-18 (C/D/E/F) Internal Subsystem (IS). Initiate testing of TCTS system for deployed airwing training. Initiate development of instrumentation package for rotary wing and transport aircraft. Develop and implement track exchange interface between TCTS live monitor and TACTS Control and Computation Subsystem (CCS). Define Test and Training Enabling Architecture (TENA) compliant interface between TCTS and an Advance Display System. Develop and deliver Integrated Logistics products for the IS and for fielding the TCTS system aboard deployed carriers. Develop data link uplink control for the live monitor systems. Initiate development of Fixed Ground Subsystem (FGS) for use at large ranges. FY05 continued development of the Internal Subsystem for the F/A-18. FY06 will initiate the development of the Fixed Ground Subsystem for delivery of the larger Navy training ranges and development of the Advanced Data link waveform, and Rack-mounted Subsystem for Rotary Wing and Transport aircraft. FY07 will continue the development of the JTRS advance data link.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 3093, TACTICAL COMBAT TRAINING SYSTEM (TCTS).
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	9.375	16.288	8.312
Current President's Budget:	7.468	16.044	7.734
Total Adjustments	-1.907	-0.244	-0.578

Summary of Adjustments

Congressional Undistributed Reductions	-0.148	-0.170	
Economic Assumptions		-0.074	0.042
Program Adjustments	-1.759		-0.620
Subtotal	-1.907	-0.244	-0.578

Schedule: The following milestones have changed to better reflect program status and MDA rebaseline approval:

From:	To:
Phase 3 Fixed Range (FGS, RS, CGTS) FY05 3Q/4Q	Phase 2 MSC FY06 3Q
Phase 3 MS B FY06 1Q	Phase 3 MSB FY06 3Q
Phase 4 Advanced Datalink FY06 2Q/4Q	Phase 4 MSB FY06 1Q
Phase 1 DT FY05 1Q	Phase 5 Battle Group FY-10 - FY-12
Keywest IOC FY05 3Q	Phase 1 (NDI)DTC1-1, DTC1-2/DT Assist, OTB-3 FY05 3Q
Beaufort IOC FY08 4Q	Phase 1 NDI - Transportable (GS, AS) FRP FY074Q
Phase 2 DTB2-1, 2-2A, 2B, 2-3, 2-4, 2-5, OTC2-1 FY05 2Q - FY07 1Q	Phase 2 Internal Subsystem (IS) LRIP FY06 3Q
IOC Lemoore FY08 4Q	Phase 2 Internal Subsystem (IS) FRP FY07 4Q
IOC CVW-5 FY07 1Q	IOC Key West FY06 2Q
IOC Oceana FY09 1Q	IOC CVW-5 FY07 3Q
IOC Yuma FY07 3Q	IOC Beaufort FY08 4Q
IOC Cherry PT FY09 3Q	IOC Fallon FY09 1Q
	IOC Oceana FY09 2Q
	IOC Cherry Pt. FY09 3Q

Technical:

Not applicable

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS</b>	PROJECT NUMBER AND NAME 3093, TACTICAL COMBAT TRAINING SYSTEM (TCTS).
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
									0.000
Related OPN: Weapons Range Support Equipment, LI 4204	42.864	59.456	56.226	41.696	60.655	59.875	60.825		
Related APN: Other Production Charges, LI 0725	6.079	10.275	19.501	22.878	28.439	25.983	23.066		

E. ACQUISITION STRATEGY:

TCTS will employ an evolutionary acquisition strategy to procure a base Non-Developmental Item System and evolutionary development of the system to meet the full ORD requirements. TCTS will be a cooperative program with the USAF P5 CTS program. The USAF awarded a 10-year contract in June 2003.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0204571N, CONSOLIDATED TRAINING SYSTEMS				3093, TACTICAL COMBAT TRAINING SYSTEM (TCTS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hdw Development	SS CPFF	CUBIC DEFENSE APPS, INC, SAN DIEGO, CA	1.783	1.673	12/04	2.610	11/05				6.066	6.066
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>1.783</b>	<b>1.673</b>		<b>2.610</b>					<b>6.066</b>	
Remarks:												
<b>SUPPORT</b>												
Integrated Logistics Sup	SS CPFF	CUBIC DEFENSE APPS, INC, SAN DIEGO, CA				1.062	1/06	.511	TBD		1.573	1.573
Integrated Logistics Sup	VARIOUS	VARIOUS	.230	.158	VARIOUS					1.733	2.121	
Software Development	SS CPFF	CUBIC DEFENSE APPS, INC, SAN DIEGO, CA		1.242	12/04	3.555	1/06	4.531	TBD		9.328	9.328
Software Development	SS CPFF	CUBIC DEFENSE APPS, INC, SAN DIEGO, CA								19.746	19.746	19.746
<b>SUBTOTAL SUPPORT</b>			<b>.230</b>	<b>1.400</b>		<b>4.617</b>		<b>5.042</b>		<b>21.479</b>	<b>32.768</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval - ETS (NON-FFRDC)	VARIOUS	VARIOUS		.137	VARIOUS	.430	VARIOUS	.260	VARIOUS	.980	1.807	
Dev Test & Eval - Reimb Fld Spt	TBD	NAWCAD, PATUXENT RIVER MD	.082	1.309	10/04	1.995	1/06	.482	TBD		3.868	
Dev Test & Eval - Reimb Fld Spt	VARIOUS	VARIOUS		.430	VARIOUS	.430	VARIOUS			1.600	2.460	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			<b>.082</b>	<b>1.876</b>		<b>2.855</b>		<b>.742</b>		<b>2.580</b>	<b>8.135</b>	
Remarks:												
<b>MANAGEMENT</b>												
Contractor Eng Sup	SS CPFF	CUBIC DEFENSE APPS, INC, SAN DIEGO, CA	.040			4.225	1/06	.650	TBD		4.915	4.915
Contractor Eng Sup	VARIOUS	VARIOUS				.200	VARIOUS	.200	VARIOUS	3.050	3.450	
Government Eng Sup	WX	NAWCAD, Pax River MD	.267	2.248	VARIOUS	1.102	VARIOUS	.880	VARIOUS	2.740	7.237	
Program Mgmt Sup	WX	NAWCAD, Pax River MD	.187	.130	VARIOUS	.285	VARIOUS	.085	VARIOUS	.294	.981	
Program Mgmt Sup	WX	TSD Orlando FL		.139	11/04	.150	11/05	.135	11/06	.405	.829	
Travel	TO	NAVAIR HQ, PATUXENT RIVER, MD	.055	.002	10/04						.057	
<b>SUBTOTAL MANAGEMENT</b>			<b>.549</b>	<b>2.519</b>		<b>5.962</b>		<b>1.950</b>		<b>6.489</b>	<b>17.469</b>	
Remarks:												
<b>Total Cost</b>			<b>2.644</b>	<b>7.468</b>		<b>16.044</b>		<b>7.734</b>		<b>30.548</b>	<b>64.438</b>	
Remarks:												



CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-7</b>					0204571N Consolidated Training Systems Development										3093 Tactical Combat Training System (TCTS)													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
ORD Approval																												
Phase 1 MS C Oct 03																												
Phase 2 MS B Oct 03																												
<b>Acquisition Phase</b>																												
Phase 1 NDI - Transportable (GS, AS)																												
Phase 2 Internal Subsystem (IS)																												
Phase 3 Rack Mounted Subsystem (RS)																												
Phase 4 Advanced Datalink																												
Phase 5 Battle Group																												
Internal Subsystem Dev																												
Rack Mounted Subsystem Dev																												
Ground Subsystem Dev																												
<b>Test &amp; Evaluation Milestones</b>																												
Phase 1 (NDI) DTC1-1, DTC1-2/DT Assist, OTB3-1																												
Phase 2 DTB2-1, 2-2A, 2B, DTC2-3/OTC2-1																												
Phase 3 DTB3-1, 3-2																												
<b>Production Milestones</b>																												
Phase 1 NDI - Transportable (GS, AS)																												
Phase 2 Internal Subsystem (IS)																												
Phase 3 Rack Mounted Subsystem (RS)																												
Phase 4 Advanced Datalink																												
<b>Deployments</b>																												
IOC																												
Key West																												
CVW-5																												
Yuma																												

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>		PROGRAM ELEMENT 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 3093 Tactical Combat Training System (TCTS)			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ORD Approval								
Phase 1 NDI - Transportable (GS, AS)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Phase 2 Internal Subsystem (IS)		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Phase 3 Rack Mounted Subsystem (RS)			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Phase 4 Advanced Datalink			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Phase 5 Battle Group							1Q-4Q	1Q-4Q
Phase 1 MS C								
IOC Key West			2Q					
Phase 2 MS B								
Phase 2 MS C			3Q					
IOC CVW-5				2Q				
Phase 3 MS B			3Q					
Phase 3 MS C				3Q				
IOC Yuma				3Q				
Phase 4 MS B			1Q					
Phase 1 DT/OT				1Q-2Q				
Phase 2 DT/OT		4Q	1Q-4Q	1Q				
Phase 3 DT/OT			4Q	1Q				


EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N / BA 7		0204571N, CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT					9999, Congressional Adds		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
9999 Congressional Adds		2.000							
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

3087 Congressional Plus up of \$1M provided for Total Ship Training System to analyze requirements, design, develop and deliver a functional prototype with related documentation for elements of TSTS. Prototypes of the various TSTS hardware and software subsystems will be designed and documented in a design specification including, Personnel Management subsystem, Communication Audio Capture subsystem, and the Video Capture subsystem.

9794 The Sea Target Laser Aim Scoring System (STLASS) provides real-time, quantitative feedback on critical aspects of laser guided weapon employment not currently available from existing Navy laser scoring systems. This feedback has been proven to significantly improve flight crew weapon delivery capabilities during nearly a decade of use by the U.S. Army. The system consists of three major components: A Base Station, Target Kit and Aircraft Flight Data Unit. STLASS will be adapted to existing Navy seaborne targets to support Navy H-60 armed helicopter training and readiness events requiring laser scoring capability.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0204571N, CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT</b>	PROJECT NUMBER AND NAME 9999, Congressional Adds
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

3087 Total Ship Training System (TSTS)	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.000		
RDT&E Articles Qty				

Design and develop a functional prototype with related documentation for elements of TSTS.

9794 STCLASS	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.000		
RDT&E Articles Qty				

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

<b>CLASSIFICATION:</b>								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY</b>				R-1 ITEM NOMENCLATURE PE 0204574N Cryptologic Direct Support				
<b>BA 7</b>								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	1.414	1.401	1.425	1.443	1.431	9.634	12.047	
3091 / Advanced Cryptologic Systems Engineering	1.414	1.401	1.425	1.443	1.431	9.634	12.047	
Quantity of RDT&E Articles								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>The Advanced Cryptologic Systems Engineering 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 necessary and proper 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 requires 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 LANs, and tested relative to interoperability requirements. Additionally, the future Maritime Cryptologic Architecture (MCA) realized under Ships Signals Exploitation Equipment (SSEE) Increment E and subsequent increments will be procured under Cryptologic Carry-On Equipment as a future carry-on Advanced Cryptologic Carry-on Equipment (ACCES) system starting in FY04. This RDT&amp;E will provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of both ACCES and all other carry-on subsystems to meet emergent requirements.</p>								
<b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>								
This program is funded under BA-7, OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing operational systems.								

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA 7</b>		PE 0204574N Cryptologic Direct Support	
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>			
(U) Funding:			
	FY 2005	FY 2006	FY 2007
FY06 President's Budget Submit	1.442	1.422	1.419
FY07 President's Budget Submit	1.414	1.401	1.425
Total Adjustments	-0.028	-0.021	0.006
Summary of Adjustments			
SBIR Transfer	-0.027		
Department of Energy Transfer	-0.001		
Sec. 8125 Revised Economic Assumptions		-0.006	
Congressional Action 1% Reduction		-0.015	
Inflation Adjustment			0.006
Subtotal	-0.028	-0.021	0.006
 (U) Schedule:			
Not Applicable			
 (U) Technical:			
Not Applicable			

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006																	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/ BA 7</b>				R-1 ITEM NOMENCLATURE PE 0204574N Cryptologic Direct Support																			
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2010</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2011</u></th> </tr> </thead> <tbody> <tr> <td>OPN Line 3501, Cryptologic Equipment</td> <td style="text-align: center;">19.505</td> <td style="text-align: center;">15.984</td> <td style="text-align: center;">17.616</td> <td style="text-align: center;">17.416</td> <td style="text-align: center;">16.798</td> <td style="text-align: center;">17.160</td> <td style="text-align: center;">17.543</td> </tr> </tbody> </table> <p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to SSC-Charleston, SSC-San Diego and miscellaneous contractors, with management oversight by SPAWAR.</p> <p><b>(U) F. MAJOR PERFORMERS:</b> N/A</p> <p><b>(U) G. METRICS:</b> Earned Value Management (EVM) is used for metrics reporting and risk management.</p> <p><b>* Not required for Budget Activities 1,2,3, and 6</b></p>								<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	OPN Line 3501, Cryptologic Equipment	19.505	15.984	17.616	17.416	16.798	17.160	17.543
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>																
OPN Line 3501, Cryptologic Equipment	19.505	15.984	17.616	17.416	16.798	17.160	17.543																

R-1 SHOPPING LIST - Item No. 177

<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Cryptologic Direct Support			PROJECT NUMBER AND NAME 3091 / Advanced Cryptologic Systems Engineering			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			1.414	1.401	1.425	1.443	1.431	9.634	12.047
RDT&E Articles Qty									
<p><b>(U) (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>The Advanced Cryptologic Systems Engineering 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 necessary and proper 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 requires 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 LANs, and tested relative to interoperability requirements. Additionally, the future Maritime Cryptologic Architecture (MCA) realized under Ships Signals Exploitation Equipment (SSEE) Increment E and subsequent increments will be procured under Cryptologic Carry-On Equipment as a future carry-on Advanced Cryptologic Carry-on Equipment (ACCES) system starting in FY04. This RDT&amp;E will provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of both ACCES and all other carry-on subsystems to meet emergent requirements.</p>									

R-1 SHOPPING LIST - Item No. 177



CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Cryptologic Direct Support	PROJECT NUMBER AND NAME 3091 / Advanced Cryptologic Systems Engineering

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	1.414	1.401	1.425	
RDT&E Articles Quantity				

Cryptologic Carry-On Equipment  
 FY05 - Continued to integrate, test, and document identified Commercial and Government off-the-shelf technologies and subsystems that meet emergent and on-going Fleet requirements. Developed and integrated software and/or hardware improvements to Advanced Carry-on Cryptologic System (ACCES) baseline. Efforts will support Hostile Forces Integrated Targeting Service (HITS), CAINO/BLUESTREAM subsystem and BUSHHOG systems. Initiated studies necessary to modify topside antenna configuration.  
 FY06 - Continue to integrate, test, and document identified Commercial and Government off-the-shelf technologies and subsystems that meet emergent and on-going Fleet requirements. Develop and integrate software and/or hardware improvements to Advanced Carry-on Cryptologic System (ACCES) baseline. Efforts will support ATOMICRAFT and HITS subsystems. Complete studies necessary to modify topside antenna configuration.  
 FY07 - Continue to integrate, test, and document identified Commercial and Government off-the-shelf technologies and subsystems that meet emergent and on-going Fleet requirements. Continue with developing upgrades to existing systems and subsystems according to Fleet requirements.

R-1 SHOPPING LIST - Item No. 177

UNCLASSIFIED

<b>CLASSIFICATION:</b>													
Exhibit R-3 Cost Analysis (page 1)										DATE:		February 2006	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204574N Cryptologic Direct Support				3091 / Advanced Cryptologic Systems Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development											0.000	0.000	
Ancillary Hardware Development											0.000	0.000	
Systems Engineering	Various	Various	1.042	0.169	12/04	0.169	12/05	0.169	12/06	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			1.042	0.169		0.169		0.169		0.000	1.549	0.000	
Remarks:													
Development Support											0.000	0.000	
Software Development	Various	Various	0.982	1.002	12/04	1.002	12/05	1.002	12/06	Continuing	Continuing	Continuing	
Training Development											0.000	0.000	
Integrated Logistics Support											0.000	Continuing	
Configuration Management											0.000	Continuing	
Technical Data											0.000	0.000	
GFE											0.000	0.000	
Subtotal Support			0.982	1.002		1.002		1.002		Continuing	Continuing	Continuing	
Remarks:													

R-1 SHOPPING LIST - Item No. 177

UNCLASSIFIED

<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 2)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT PE 0204574N Cryptologic Direct Support				PROJECT NUMBER AND NAME 3091 / Advanced Cryptologic Systems Engineering					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.050	0.051	12/04	0.055	12/05	0.055	12/06	Continuing	Continuing	Continuing
Operational Test & Evaluation											0.000	0.000
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			0.050	0.051		0.055		0.055		0.000	0.211	0.000
Remarks:												
Contractor Engineering Support											0.000	0.000
Government Engineering Support											0.000	0.000
Program Management Support			0.178	0.149	Various	0.130	Various	0.155	Various	Continuing	Continuing	0.000
Travel			0.041	0.043	Various	0.045	Various	0.044	Various	Continuing	Continuing	0.000
Subtotal Management			0.219	0.192		0.175		0.199		Continuing	Continuing	0.000
Remarks:												
Total Cost			2.293	1.414		1.401	Various	1.425	Various	Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>												PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Cryptologic Direct Support								PROJECT NUMBER AND NAME 3091 / Advanced Cryptologic Systems Engineering												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Prototype Phase																																
System Development (e.g., Radar System dev.)																																
Equipment Delivery (e.g., EDM Radar Delivery)																																
<b>Test &amp; Evaluation Milestones</b>																																
Operational Assessment																																
<b>Production Milestones</b>																																
LRIP I																																
LRIP II																																
FRP																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 177

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>	PROGRAM ELEMENT PE 0204574N Cryptologic Direct Support				PROJECT NUMBER AND NAME 3091/ Advanced Cryptologic Systems Engineering			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
System Design Review (SDR)	2Q	2Q	2Q	2Q	2Q	2Q	2Q	2Q
Operational Assessment (OA)	3Q	3Q	3Q	3Q	3Q	3Q	3Q	3Q
HW/SW Delivery	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q	3Q/4Q

R-1 SHOPPING LIST - Item No. 177

APPROPRIATION/BUDGET ACTIVITY RDT&E,N /7/0204575N					R-1 ITEM NOMENCLATURE Electronic Warfare (EW) Readiness Support						
COST (\$ in Millions)	FY 04	FY 05	FY 06	FY07	FY08	FY09	FY10	FY11	TO COMPLETE	TOTAL	
Total / 0204575N	9.936	11.944	13.777	20.673	25.033	16.666	16.181	16.625	Cont.	Cont.	
Information Warfare/Z2263	7.538	5.746	10.299	15.671	19.936	11.481	11.200	11.241	Cont.	Cont.	
Retract Barley/Z2462	2.398	6.198	3.478	5.002	5.097	5.185	4.981	5.384	Cont.	Cont.	
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

A. Mission Description and Budget Item Justification

Project Z2263/Information Warfare System

The Naval Information Warfare Activity (NIWA) serves as the Program Management Office for the Offensive Information Warfare (IW) program. As such, NIWA is tasked as the Navy's principal technical agent to research, assess, and develop IW capabilities. The key focus areas include, providing Navy Warfighter Command and Control Targeting System, state-of-the-art Electronic Attack (EA) hardware and software, and computer network operation capabilities (an IW Mission Planning, Analysis and Command and Control Targeting System (IMPACTS) tool) This project continues the development and integration of EA systems onto various platforms through the out-years. In addition, NIWA oversees management of the Navy Vulnerability Assessment Counter-Measures program (NVACM), which assesses information systems in the design phase to ensure security confidence/integrity of fielded capabilities.

PR07 provides for the increase for the expansion of Computer Network Operations (CNO) and Electronic Attack capabilities. Specific efforts include: expanded target area capability development, testbed design and development to support the evaluation of emerging technologies (hardware), expansion of R&D test facility to validate capabilities (software), evaluate execution from unmanned/wireless "networks", and development of the weaponization/operationalization of CNO and EA. (Some details are held at a higher classification level).

Project Z2462/Retract Barley

Details held at a higher classification level.

Exhibit R-2a, RDT&E Project Justification									Date: January 2006	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER				
RDT&E,N /7			0204575N			Information Warfare/Z2263				
Cost (\$ in Millions)	FY 04	FY 05	FY 06	FY 07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
Project Cost	7.538	5.746	10.299	15.671	19.936	11.481	11.200	11.241	Cont.	Cont.
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
<b>A. Accomplishments/Planned Program</b>										
FY 2005 Plans										
(2.0) – Continued IMPACTS updates										
(2.4) – Continued Electronic Attack										
(1.0) – Navy Vulnerability Assessment Counter-Measures (NVACM)										
(0.3) – Continued Program Office Support										
FY 2006 Plans										
(2.0) – Continue IMPACTS updates										
(3.6) – Continue Electronic Attack										
(2.6) – Start Computer Network Operations (CNO)										
(1.0) – Navy Vulnerability Assessment Counter-Measures (NVACM)										
(0.6) – Navy IO										
(0.5) – Continue Program Office Support										
FY 2007 Plans										
(1.8) - Continue IMPACTS updates										
(3.0) - Continue Electronic Attack										
(6.8) - Continue Computer Network Operations (CNO)										
(1.4) - Navy Vulnerability Assessment Counter-Measure (NVACM)										
(0.6) - Continue Navy IO										
(0.5) – Continue Program Office Support										
<b>B. Other Program Funding Summary</b>										
	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>		
OMN Line 4A6M	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OMN Line 4B7N	2.1	2.5	2.6	4.2	4.4	4.5	4.5	4.6		
OPN 234000/6	4.2	4.0	3.4	5.0	7.2	4.2	4.3	4.4		
R&D Z1742	0.9	0.9	0.9	0.6	0.7	0.7	0.7	0.7		
<b>C. Acquisition Strategy: N/A</b>										
<b>D. Schedule Profile: N/A</b>										

Exhibit R-2a, Project Justification  
R-1 Shopping List – Line Item #178

Exhibit R-2a, RDT&E Project Justification

Date: January 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NAME AND NUMBER								
RDT&E.N /7	0204575N	Information Warfare/Z2263								
<b>E. Program Change Summary:</b>										
	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>		
Current BES/President's Budget	7.538	5.746	10.299	15.671	19.936	11.481	11.200	11.241		
Previous President's Budget	<u>7.538</u>	<u>5.822</u>		<u>10.456</u>		<u>13.642</u>	<u>17.757</u>	<u>9.195</u>	<u>9.313</u>	<u>9.445</u>
Total Adjustments	0.000	-0.076	-0.157	2.029	2.179	2.286	1.887	1.796		
<u>Summary of Adjustments:</u>										
PL 108-447 DOE Transfer	0.000	-0.004	0.000	0.000	0.000	0.000	0.000	0.000		
SBIR Reduction	0.000	-0.072	0.000	0.000	0.000	0.000	0.000	0.000		
Congressional Directed Adjustments	0.000	0.000	-0.157	0.000	0.000	0.000	0.000	0.000		
PBD 604 Inflation	0.000	0.000	0.000	0.527	0.646	0.744	0.461	0.436		
PBD 610R Reimbursable	0.000	0.000	0.000	0.002	0.003	0.001	0.001	0.001		
PBD 717 Reduction	0.000	0.000	0.000	0.000	0.000	-0.020	-0.167	-0.265		
Transfer	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>	<u>1.500</u>	<u>1.530</u>	<u>1.561</u>	<u>1.592</u>	<u>1.624</u>		
Total Adjustments	0.000	-0.076	-0.157	2.029	2.179	2.286	1.887	1.796		

Exhibit R-2a, Project Justification  
R-1 Shopping List – Line Item #178



Exhibit R-3 Cost Analysis									Date: January 2006			
RDT&E,N/7			Program Element: 0204575N						Information Warfare/Z2263			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Var.	Var.	11.538	1.815	Var.	2.728	Var.	4.101	Var.	Cont.	Cont.	
Subtotal Product Development			11.538	1.815	Var.	2.728	Var.	4.101	Var.	Cont.	Cont.	
Development Support	Var.	Var.	4.803	1.434	Var.	1.532	Var.	1.533	Var.	Cont.	Cont.	
Software Development	Var.	Var.	5.901	0.546	Var.	3.104	Var.	5.256	Var.	Cont.	Cont.	
Subtotal Support			10.704	1.980	Var.	4.636	Var.	6.789	Var.	Cont.	Cont.	
Remarks												

Exhibit R-3, Project Cost Analysis  
R-1 Shopping List – Line Item #178

Exhibit R-3 Cost Analysis										Date: January 2006		
RDT&E,N/7										INFORMATION WARFARE/Z2263		
Program Element: 0204575N												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Var.	Var.	1.700	0.700	Var.	1.036	Var.	1.429	Var.	Cont.	Cont.	
Subtotal T&E			1.700	0.700	Var.	1.036	Var.	1.429	Var.	Cont.	Cont.	
Remarks												
AIS Support	Var.	Var.	0.250	0.100	Var.	0.100	Var.	0.000	Var.	Cont.	Cont.	
Government Engineering Support	Var.	Var.	1.385	0.551	Var.	0.535	Var.	1.637	Var.	Cont.	Cont.	
Program Management Support	Var.	Var.	1.650	0.600	Var.	1.265	Var.	1.715	Var.	Cont.	Cont.	
Subtotal Management			3.285	1.251	Var.	1.900	Var.	3.352	Var.	Cont.	Cont.	
Remarks												
Total Cost			27.227	5.746	Var.	10.299	Var.	15.671	Var.	Cont.	Cont.	
Remarks												

Exhibit R-3, Project Cost Analysis  
R-1 Shopping List – Line Item #178

EXHIBIT R-2, RDT&E Budget Item Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0205601N, HARM IMPROVEMENT		
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	153.797	84.569	99.208	30.994	5.766	4.682	5.071	
1780 HARM IMPROVEMENT	1.969	3.663	1.883	2.019	1.967	2.126	2.161	
2185 AARGM	65.163	73.862	97.325	28.975	3.799	2.556	2.910	
2211 JOINT COMMON MISSILE	72.145							
3056 ADVANCED PRECISION KILL WEAPON SYSTEM	9.760	1.944						
3057 COMMON DEFENSE	3.773							
9626 SPECTRAL BEAM COMBINING FIBER LASERS	.987							
9999 CONGRESSIONAL ADDS		5.100						

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

Congressional Add of \$2.9 million in FY2005 for AARGM accelerated development of critical Integrated Broadcast Service Receiver (IBSR) interfaces, formerly known as Embedded National Tactical Receiver (ENTR) interfaces and correlation software. It also funds development of a common AGM-88 series battery that replaces the AARGM specific battery resulting in a production savings of \$2.5K per weapon.

(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 production in FY1983. 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 (FY1996 through FY1999) 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 FY2000. HARM Improvement includes efforts to conduct Foreign Military Exploitation (FME) 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-1C acquisition program in System Development & Demonstration (SD&D) to upgrade the AGM-88 HARM missile with multi-mode / multi-spectral guidance and targeting capability. It also incorporates the capability to receive national broadcast data and transmit weapon impact assessments (demonstrated in Quick Bolt ACTD). An AARGM System Development and Demonstration (SD&D) commenced in FY2003. The AARGM program plans production of 1,750 missiles (75) Low Rate Initial Production (LRIP) and 1,675 Full Rate Production modification kit(s).

(U) JOINT COMMON MISSILE (JCM): Army led joint service program to replace the aging legacy Maverick, Hellfire and TOW missiles. Joint Common Missile (JCM) provides rotary/fixed wing aircraft enhanced targeting capabilities, increased lethality, extended range, and both fire-and-forget and precision point targeting modes, against moving and short dwell re-locatable target set (80% of DoN's assigned target set) in adverse weather and obscured battlefield conditions. J8 validated and Navy and USMC approved Initial Capabilities Document (ICD) and Capabilities Development Document (CDD).

(U) ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II: Formerly known as APKWS, the APKWS II is an Army SD&D program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. Department of Navy participation began in FY 2004. 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. Army, Marine Corps, and recent Navy Anti-Surface Warfare (ASUW) Mission Need Statements highlighted the requirement for a weapon system capable of employment from the SH-60 to counter a swarm threat of small attack boats. The Navy's effort on the Smart Rocket Launcher (SRL) has been terminated.

(U) COMMON DEFENSE: The Department of the Navy has a requirement to replace legacy weapons with an advanced .50 caliber crew served weapon, called the GAU-21 Common Defense Weapon System (CDWS), for assault support helicopters. Specific applications include a machine gun to replace GAU-16 and the XM-218.50 caliber machine guns that will provide a significant increase in firepower, accuracy, lethality and reliability, and will maximize survivability through suppressive fire capabilities. Funding will support requirements validation, advance technology demonstration, and prototype development.

(U) SPECTRAL BEAM COMBINING FIBER LASERS: In accordance with NAVSEA Notice 5400, Ser 09B/240, Subj: ESTABLISHMENT OF THE NAVY DIRECTED ENERGY WEAPONS PROGRAM OFFICE (PMS 405), dated 4 Jan 02 and NAVSEA Instruction 5400.101, Ser SEA 06/058, Subj: DIRECTED ENERGY AND ELECTRIC WEAPONS PROGRAM OFFICE (PMS 405) CHARTER, dated 21 Jul 04 - COMNAVSEASYSOM (PMS 405) was assigned as the single Point of Contact for matters related to Directed Energy and Electric Weapons development and acquisition initiation for the Navy and for those matters being coordinated with other Federal agencies and military services.

(U) CONGRESSIONAL ADDS: Congressional Add of \$1.1 million in FY2006 for classified AARGM derivative program. Congressional Add of \$4.0 million in FY2006 for JCM technology maturation.

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N /		0205601N, HARM IMPROVEMENT					1780, HARM IMPROVEMENT	
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
1780 HARM IMPROVEMENT	1.969	3.663	1.883	2.019	1.967	2.126	2.161	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The High-speed Anti-Radiation Missile (HARM) is a joint service program with the Air Force (NAVY lead). The program has been in full production since 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 (FY1996 through FY1999) 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 FY2000.

HARM Improvement includes efforts to conduct Foreign Military Exploitation (FME) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 1780, HARM IMPROVEMENT
--	-------------	--	---

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.969	3.663	1.883	
RDT&E Articles Qty				

Conduct Foreign Military Exploitation (FME) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates, and integration efforts.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 1780, HARM IMPROVEMENT
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.736	3.719	3.792
Current BES / President's Budget:	1.969	3.663	1.883
Total Adjustments	0.233	-0.056	-1.909

Summary of Adjustments

Congressional Reductions		-0.039	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.005		
Congressional Increases			
Economic Assumptions		-0.017	
Programmatic Adjustments			-1.900
Miscellaneous Adjustments	0.238		-0.009
Subtotal	0.233	-0.056	-1.909

Schedule:

Not Applicable

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>					PROJECT NUMBER AND NAME 1780, HARM IMPROVEMENT			
--	-------------	--	--	--	--	--	---	--	--	--

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
WPN BLI 232700, HARM MODS	0.000	0.000	0.000	41.135	43.260	44.158	45.110	800.034	973.697

E. ACQUISITION STRATEGY:

The HARM Block IIIB/VI Upgrade program was an ACAT III Program and consisted of three separate phases (EMD, Production, and Technology Evaluation and Assessment). The acquisition strategy for the HAR Block IIIB/VI Program was complete and was based upon a signed international Memorandum of Agreement with Germany, Italy, and U.S. Navy; a tri-national Cooperative Operational Requirements Document (CORD), and a Cooperative Test and Evaluation Master Plan (CTEMP). These three documents drove the overall acquisition approach to the HARM Block VI project. Tri-national participation in the HARM Precision Navigation Upgrade (PNU) modification program was terminated in 3Q03.

Available resources will be applied to HARM Legacy configuration requirements.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0205601N, HARM IMPROVEMENT				1780, HARM IMPROVEMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
SUBTOTAL PRODUCT DEVELOPMENT												
Remarks:												
SUPPORT												
Studies & Analyses	VARIOUS	VARIOUS		.310	VARIOUS							
SUBTOTAL SUPPORT												
Remarks: Funds provided for studies/analysis of threats for the existing High Speed Anti-Radiation Missile (HARM) to scope out the capabilities required if an operational update is warranted.												
TEST & EVALUATION												
Oper Test & Eval	WX	NAWCWD, CHINA LAKE CA	3.308	1.582	10/1/2004	3.513	10/1/2005	1.718	10/1/2006	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION												
Remarks:												
MANAGEMENT												
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	.236	.076	10/1/2004	.125	11/1/2005	.140	10/1/2006	Continuing	Continuing	
Travel	TO	NAVAIR-HQ, PAXTUXENT RIVER MD	.379	.002	10/1/2004	.025	10/1/2005	.025	10/1/2006	Continuing	Continuing	
SUBTOTAL MANAGEMENT												
Remarks: Prior year data includes the HARM Precision Navigation Upgrade (PNU) modification program which was terminated in 3Q03.												
Total Cost			3.923	1.969		3.663		1.883		Continuing	Continuing	
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										1780, HARM IMPROVEMENT								
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
<b>Test &amp; Evaluation Milestones</b>	Developmental Test																											
	Operational Test																											
	Foreign Military Exploitation (FME) - continuing																											
<b>Production Milestones</b>																												
<b>Deliveries</b>																												



APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N /		0205601N, HARM IMPROVEMENT					2185, AARGM	
	BA 7							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2185 AARGM	65.163	73.862	97.325	28.975	3.799	2.556	2.910	
RDT&E Articles Qty		6	8	17				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional add of \$2.9 million in FY2005 accelerated development of critical Integrated Broadcast Service Receiver (IBSR) interfaces, formerly known as Embedded National Tactical Receiver (ENTR) interfaces and correlation software. It also funds development of a common AGM-88 series battery that replaces the AARGM specific battery resulting in a production savings of \$2.5K per weapon.

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 FY2003. 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)) and multi-spectral sensors 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, and weapon employment with impact avoidance zone/missile impact zones.

The issue of emitter "shut-down" as a defensive tactic has been a major shortcoming in the joint suppression of enemy air defenses (J-SEAD) element of the offensive counter air mission area for the United States Navy and Air Force. Program objectives are to achieve an effective and affordable lethal DEAD (Destruction of Enemy Air Defenses) capability against mobile, relocatable, or fixed air defense threats even in the presence of emitter shutdown or other Anti-Radiation Missile (ARM) countermeasures. The multi-mode, multi-spectral technology being integrated in the AARGM program resolves the problem of "shut-down".

At Milestone B (June 2003), AARGM successfully transitioned 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. The AARGM program plans to produce 31 test articles and 1,750 missiles (75 Low Rate Initial Production (LRIP) missiles a 1,675 Full Rate AGM-88Es). In May 2004, the contract was modified to accelerate ENTR, enabling the warfighter to directly receive National intelligence data, providing additional AARGM targeting data to increase overall pilot situational awareness. The current contract value is \$229.4M.

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 FY03. 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.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 2185, AARGM
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	65.163	73.862	97.325	
RDT&E Articles Qty		6	8	

Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D efforts. Contractor to update the Advanced Technology 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 seeker. 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. Conducted successful System Preliminary Design Review on 05 April 2005. Contractor on track for 2Q FY06 System Critical Design Review.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 2185, AARGM
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	63.768	74.987	97.105
Current BES / President's Budget:	65.163	73.862	97.325
Total Adjustments	1.395	-1.125	0.220

Summary of Adjustments

Congressional Reductions		-0.784	
Congressional Rescissions			
Congressional Undistributed Reductions	-1.361		
Congressional Increases			
Economic Assumptions		-0.341	
Miscellaneous Adjustments	2.756		0.220
Subtotal	1.395	-1.125	0.220

Schedule:

Preliminary Design Review (PDR) was conducted in early FY05 3Q vice late FY05 2Q as previously planned to accommodate program and personnel schedule conflicts.

Technical:

Not Applicable

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>					PROJECT NUMBER AND NAME 2185, AARGM			
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Budget Line Item No. 232700, HARM MODS Program Element 0204136N, F18 SQUADRONS*	0.000	0.000	0.000	41.135	43.260	44.158	45.110	800.034	973.697

\*Portion of FY2007-FY2011 funding budgeted for procurement and integration of AARGM on F/A-18 E/F.

E. 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.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
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 PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Aircraft Integration	WX	NAWCWD, CHINA LAKE CA	3.223	.232	10/1/2004	1.298	10/1/2005	4.740	10/1/2006	.883	10.376	
Primary Hdw Development - SD&D	C-CPIF	AMSC, WOODLAND HILLS CA	36.802	59.398	10/1/2004	52.146	10/1/2005	62.684	10/1/2006	18.370	229.400	229.400
Systems Eng	WX	NAWCWD, CHINA LAKE CA	22.043	2.044	10/1/2004	6.949	10/1/2005	16.453	10/1/2006	7.636	55.125	
Prior Years Product Development	VARIOUS	VARIOUS	189.816								189.816	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>251.884</b>	<b>61.674</b>		<b>60.393</b>		<b>83.877</b>		<b>26.889</b>	<b>484.717</b>	
Remarks:												
<b>SUPPORT</b>												
Integrated Logistics Sup	WX	NAWCWD, CHINA LAKE CA	.458	.579	10/1/2004	1.086	10/1/2005	1.200	10/1/2006	1.200	4.523	
Studies & Analyses	VARIOUS	VARIOUS	.462	.249	VARIOUS	.090	VARIOUS	.485	VARIOUS	.100	1.386	
Prior Years Support	VARIOUS	VARIOUS	.012								.012	
<b>SUBTOTAL SUPPORT</b>			<b>.932</b>	<b>.828</b>		<b>1.176</b>		<b>1.685</b>		<b>1.300</b>	<b>5.921</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval	WX	NAWCWD, CHINA LAKE CA	2.093	1.434	10/1/2004	3.600	10/1/2005	4.100	10/1/2006	1.750	12.977	
Oper Test & Eval (FME)	WX	NAWCWD, CHINA LAKE CA								5.552	5.552	
Test Assets	WX	NAWCWD, CHINA LAKE CA				1.900	2/1/2006	1.900	11/1/2006		3.800	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			<b>2.093</b>	<b>1.434</b>		<b>5.500</b>		<b>6.000</b>		<b>7.302</b>	<b>22.329</b>	
Remarks:												
<b>MANAGEMENT</b>												
Contractor Eng Supt - Other	VARIOUS	VARIOUS	4.565	1.045	VARIOUS	1.463	VARIOUS	.970	VARIOUS	.970	9.013	
Program Mgmt Sup	VARIOUS	VARIOUS	.105	.086	VARIOUS	5.250	VARIOUS	4.703	VARIOUS	1.769	11.913	
Travel	TO	NAVAIR-HQ, PATUXENT RIVER, MD	.752	.096	10/1/2004	.080	10/1/2005	.090	10/1/2006	.010	1.028	
<b>SUBTOTAL MANAGEMENT</b>			<b>5.422</b>	<b>1.227</b>		<b>6.793</b>		<b>5.763</b>		<b>2.749</b>	<b>21.954</b>	
Remarks:												
<b>Total Cost</b>			<b>260.331</b>	<b>65.163</b>		<b>73.862</b>		<b>97.325</b>		<b>38.240</b>	<b>534.921</b>	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>										PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT										PROJECT NUMBER AND NAME 2185, AARGM												
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																
<b>Development</b> Preliminary Design Review Critical Design Review Functional Configuration Audit Production Readiness Review Physical Configuration Audit	PDR	▲				CDR	△																									
<b>Testing &amp; Evaluation Milestones</b> Development Testing Development Testing Operational Assessment Operational Testing (OTC)																																
<b>Production Milestones</b> Low-Rate Initial Production LRIP 1 Low-Rate Initial Production LRIP 2 Full Rate Production																																
<b>Deliveries</b> Low-Rate Initial Production LRIP 1 Low-Rate Initial Production LRIP 2 Full Rate																																
<b>Initial Operational Capability (IOC)</b>																																





APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7</b>					PROJECT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>		PROJECT NUMBER AND NAME <b>2211, JOINT COMMON MISSILE</b>	
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
2211 JOINT COMMON MISSILE		72.145								
RDT&E Articles Qty										

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Army led joint service program to replace the aging legacy Maverick, Hellfire and TOW missiles. Joint Common Missile (JCM) provides rotary/fixed wing aircraft enhanced targeting capabilities, increased lethality, and extended range, both fire-and-forget and precision point targeting modes, against moving and short dwell re-locatable target set (80% of DoN's assigned target set) in adverse weather and obscured battlefield conditions. J8 validated and Navy and USMC approved Initial Capabilities Document (ICD) and Capabilities Development Document (CDD).

Program termination underway as a result of OSD direction. OSD directed the Joint Staff to leverage Joint Capability Integration and Development System (JCIDS) process to determine capability needs to equip Fixed Wing (FW), Rotary Wing (RW) and Unmanned Aerial Vehicles (UAVs) with precision Air-to-Ground Close Air Support (A/G CAS) weapons by POM 08.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 2211, JOINT COMMON MISSILE
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	72.145			
RDT&E Articles Qty				

At the direction of ASN(RD&A), DoN rescoped System Development and Demonstration (SDD) Phase I to include a technology maturation effort with the Army in FY 2005. The JCM Termination and Technology Maturation Plan funds the maturing of three critical technologies (multi-mode seeker, multi-purpose warhead, and combination FW/RW rocket motor). Environmental profile flight testing (noise & vibration) of the three DoN FW and RW platforms is included.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 2211, JOINT COMMON MISSILE
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	82.016		
Current BES / President's Budget:	<u>72.145</u>	<u>0.000</u>	<u>0.000</u>
Total Adjustments	-9.871	0.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-1.249		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments	<u>-8.622</u>		
Subtotal	-9.871	0.000	0.000

Schedule:  
Not Applicable

Technical:  
Not Applicable

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 2211, JOINT COMMON MISSILE
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D. OTHER PROGRAM FUNDING SUMMARY:	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
RDT&E NAVY P.E. 0205601N Congressional Add		4.000							4.000
RDT&E ARMY P.E. 0604329A	152.381	26.000							178.381

E. ACQUISITION STRATEGY:

Continue maturing three critical technologies (multi-mode seeker, multi-purpose warhead, and combination FW/RW rocket motor).

EXHIBIT R-2a, RDT&E Project Justification							DATE:
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME	
RDT&E, N /		0205601N, HARM IMPROVEMENT				3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II	
BA 7							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
3056 ADVANCED PRECISION KILL WEAPON SYSTEM II	9.760	1.944					
RDT&E Articles Qty	25						
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Formerly known as the Advanced Precision Kill Weapon System (APKWS), APKWS II is an Army System Development &amp; Demonstration (SD&amp;D) program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. 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. Army, Marine Corps, and recent Navy Anti-Surface Warfare (ASUW) Mission Need Statements highlighted the requirement for a weapon system capable of employment from the SH-60 to counter a swarm threat of small attack boats. The Navy's effort on the Smart Rocket Launcher (SRL) has been terminated.</p> <p>RDT&amp;E articles in FY2005 are twenty five (25) prototype APKWS II guidance sections for development testing.</p>							

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II	
B. ACCOMPLISHMENTS / PLANNED PROGRAM:				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	9.760	1.944		
RDT&E Articles Qty	25			
<p>APKWS II – System Development &amp; Demonstration (SD&amp;D) program to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. Field activities to support APKWS II Systems Engineering, aircraft integration, test assets, and test and evaluation, requirements analysis and developmental logistics support. FY05 funding was also used for the planning for Smart Rocket Launcher (SRL) which has been terminated.</p>				

EXHIBIT R-2a, RDT&E Project Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	February 2006	
PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>		PROJECT NUMBER AND NAME 3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II	
C. PROGRAM CHANGE SUMMARY			
Funding:	FY2005	FY2006	FY2007
Previous President's Budget:	12.336	12.126	0.000
Current BES / President's Budget:	9.760	1.944	0.000
Total Adjustments	-2.576	-10.182	0.000
Summary of Adjustments			
Congressional Reductions		-10.127	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.102		
Congressional Increases	0.003		
Economic Assumptions		-0.055	
Miscellaneous Adjustments	-2.473		
Subtotal	-2.576	-10.182	0.000
Schedule:			
APKWS II: Army ACAT II program currently in SDD, restructuring strategy is to award new contract by April 2006. Navy's plan is to participate in restructuring. Schedule changes reflect this new strategy. Smart Rocket Launcher planning initiated in FY05 has been terminated.			
Technical: Changes in APKWS II technical solutions are TBD.			



<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification								DATE:	
								<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N / BA-7</b>			0205601N HARM Improvement				3056 Advanced Precision Kill Weapon System (APKWS) II		
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
Related RDT&E: U. S. Army P.E. 0604802A PROJ D705 Advanced Precision Weapon System	15.289	10.625	44.742	66.670	49.824	19.014	19.666	TBD	TBD
Procurement: U. S. Army P.E. 0203802A PROJ D786*	0.000	0.000	0.000	9.562	10.425	83.592	82.460	TBD	TBD
* Army procurement numbers include unguided rockets.									
<b>E. ACQUISITION STRATEGY:</b>									
APKWS II - Army ACAT II program currently in SDD, restructuring strategy is to award new contract by April 2006. Navy plans to participate in restructured program.									

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0205601N, HARM IMPROVEMENT				3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Aircraft Integration	WX	VARIOUS	.196	.068	11/1/2004	.265	4/1/2006				.529	
Primary Hdw Development	C/CPFF	GENERAL DYNAMICS, BURLINGTON, VT		.221	3/1/2005						.221	.221
Primary Hdw Development	TBD	TBD		3.329	4/25/2006						3.329	
Systems Eng	WX	NAWCWD, CHINA LAKE, CA		.614	11/1/2004	.700	9/1/2006				1.314	
Systems Eng	WX	NSWC INDIAN HEAD, MD		1.299	11/1/2004	.360	9/1/2006				1.659	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>.196</b>	<b>5.531</b>		<b>1.325</b>					<b>7.052</b>	
Remarks:												
<b>SUPPORT</b>												
Integrated Logistics Sup	WX	VARIOUS		.179	11/1/2004	.050	10/6/2006				.229	
<b>SUBTOTAL SUPPORT</b>				<b>.179</b>		<b>.050</b>					<b>.229</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	.409	.262	3/1/2005	.409	8/1/2006				1.080	
Oper Test & Eval	WX	OPTEVFOR	.030								.030	
Test Assets	TBD	TBD		1.400	4/25/2006						1.400	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			<b>.439</b>	<b>1.662</b>		<b>.409</b>					<b>2.510</b>	
Remarks:												
<b>MANAGEMENT</b>												
Government Eng Sup	WX	NAWCWD, CHINA LAKE, CA	.990	2.025	11/1/2005						3.015	
Program Mgmt Sup	VARIOUS	VARIOUS	.157	.361	VARIOUS	.100	VARIOUS				.618	
Travel	TO	NAVAIR-HQ, PATUXENT RIVER, MD	.074	.002	VARIOUS	.060	VARIOUS				.136	
<b>SUBTOTAL MANAGEMENT</b>			<b>1.221</b>	<b>2.388</b>		<b>.160</b>					<b>3.769</b>	
Remarks:												
<b>Total Cost</b>			<b>1.856</b>	<b>9.760</b>		<b>1.944</b>					<b>13.560</b>	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>								PROGRAM ELEMENT NUMBER AND NAME 0205601N, HARM IMPROVEMENT								PROJECT NUMBER AND NAME 3056, ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II												
Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
APKWS II with Army																												
SRL																												
<b>Test &amp; Evaluation Milestones</b>																												
APKWS II with Army																												
<b>Production Milestones</b>																												
Deliveries																												

APKWS II with Army: SDD (FY 2006 Q3-Q4), Army IPR (FY 2006 Q3), Army MSC (FY 2008 Q1)

SRL: Planning/Acq Documentation (FY 2005 Q3-Q4)

APKWS II with Army: DT (FY 2007 Q3)



EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7</b>					PROJECT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>			PROJECT NUMBER AND NAME <b>3057, COMMON DEFENSE SYSTEM</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011					
3057 COMMON DEFENSE SYSTEM	3.773											
RDT&E Articles Qty												

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Department of the Navy has a requirement to replace legacy weapons with an advanced .50 caliber crew served weapon, called the GAU-21 Common Defensive Weapon System (CDWS), for assault support helicopters. Specific applications include a machine gun to replace GAU-16 and the XM-218.50 caliber machine guns that will provide a significant increase in firepower, accuracy, lethality and reliability, and will maximize survivability through suppressive fire capabilities. Funding will support requirements validation, advance technology demonstration, and prototype development.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 3057, COMMON DEFENSE SYSTEM
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.773			
RDT&E Articles Qty				

Funding will support requirements validation, advance technology demonstration, and hardware development, including integration and system qualification efforts on the H-1, H-46, and CH-53D helicopters.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 3057, COMMON DEFENSE SYSTEM
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	4.790	0.000	0.000
Current BES / President's Budget:	3.773	0.000	0.000
Total Adjustments	-1.017	0.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.060		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments	-0.957		
Subtotal	-1.017	0.000	0.000

Schedule:

Modification of current FN Herstal contract for UH-1 integration for \$400K expected to award March 2006. Milestone C review is scheduled for February 2006.

Technical:

Not applicable.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 3057, COMMON DEFENSE SYSTEM
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN-5, Budget Line Item No. 058100	7.664	13.581	13.656					27.900	62.801

E. ACQUISITION STRATEGY:

This is a recurring Assault Support Operational Assessment Group action item for all platforms. Funding supports the replacement of WWII era .50 caliber machine guns currently in fleet use across all USMC & USN helicopter platforms. Proposed replacement will offer enhanced reliability, safety, increased operational effectiveness, reduced life cycle costs, and commonality across all support platforms. Required funding would support outfit of all fleet helicopters to the new configuration which includes greater ammunition capacity and a soft mount system to reduce airframe fatigue.



APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N / BA 7		0205601N, HARM IMPROVEMENT					9626. SPECTRAL BEAM COMBINING FIBER LASERS		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
9626. SPECTRAL BEAM COMBINING FIBER LASERS	.987								
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

In accordance with NAVSEA Notice 5400, Ser 09B/240, Subj: ESTABLISHMENT OF THE NAVY DIRECTED ENERGY WEAPONS PROGRAM OFFICE (PMS 405), dated 4 Jan 02 and NAVSEA Instruction 5400.101, Ser SEA 06/058, Subj: DIRECTED ENERGY AND ELECTRIC WEAPONS PROGRAM OFFICE (PMS 405) CHARTER, dated 21 Jul 04 - COMNAVSEASYS COM (PMS 405) was assigned as the single Point of Contact for matters related to Directed Energy and Electric Weapons development and acquisition initiation for the Navy and for those matters being coordinated with other Federal agencies and military services.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME 9626 Spectral Beam Combining Fiber Lasers		
<b>B. Accomplishments/Planned Program</b>				
<b>Spectral Beam Comb. Fiber Lasers</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.987	0.000	0.000
RDT&E Articles Quantity		N/A	N/A	N/A
<div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>FY 05 - Funding is being used for technology development of high power lasers for Directed Energy military applications based on spectral beam combining of fiber lasers. Spectral Beam Combination (SBC), when combined with fiber lasers, allows the construction of high power lasers from an array of lower power fiber laser elements at reduced cost, size, and complexity. Funding is being utilized to accelerate the technology advancement necessary for the development of high power laser weapons. This effort will demonstrate the power scaling capability necessary for the development of a high power, electrically driven, tactical laser weapon system. Specific efforts include:</p> <ul style="list-style-type: none"> <li>• validate power scaling capability of the SBC approach to potentially achieve the 100kW power level</li> <li>• accelerate the test and evaluation program by fabricating specialty fiber and demonstrate a multi-kW SBC fiber laser system.</li> </ul> </div>				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-7</b>	0205601N HARM Improvement	9626 Spectral Beam Combining Fiber Lasers			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
<i>PMS 405 Portion Only</i>					
Funding:		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
Previous President's Budget: (FY 06 Pres Controls)		0.988	0.000	0.000	
Current FY07 President's Budget:		0.987	0.000	0.000	
Total Adjustments		-0.001	0.000	0.000	
Summary of Adjustments					
Spectral Beam Combining Fiber Lasers					
Issue 74501 Department of Energy Transfer		-0.001	0.000	0.000	
Subtotal		-0.001	0.000	0.000	
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME 9626 Spectral Beam Combining Fiber Lasers				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>	
0604755N Directed Energy User Scrutiny Equip.	2.417								2.417	
0603582N Multiple Items	23.856								23.856	
0604574N Compact Ultra Fast Laser System Development	1.973								1.973	
0601108F - JTO *										
0602890F - JTO *										
0601108F - JTO *										
0602114N - ONR *										
0603114N - ONR *										
Note: * Funding from these other sources varies from year to year based on the development efforts required/funded.										
<b>E. ACQUISITION STRATEGY:</b>										
Not Applicable (R&D effort only)										

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7</b>					PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>		PROJECT NUMBER AND NAME 9999, Congressional Adds	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011			
9999 Congressional Adds		5.100								
RDT&E Articles Qty										

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 9999, Congressional Adds
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

2185	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.100		
RDT&E Articles Qty				

Advanced Anti-Radiation Guided Missile (AARGM)  
Fund development of classified AARGM Derivative Program.

2211	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		4.000		
RDT&E Articles Qty				

Joint Common Missile (JCM) Development  
Funding continues JCM Technology Maturation of critical technologies (multi-mode seeker, multi-purpose warhead, and combination FW/RW rocket motor).

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205601N, HARM IMPROVEMENT</b>	PROJECT NUMBER AND NAME 9999, Congressional Adds
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C. PROGRAM CHANGE SUMMARY

Funding:	FY2005	FY2006	FY2007
Previous President's Budget:	0.000	0.000	0.000
Current BES / President's Budget:	0.000	5.100	0.000
Total Adjustments	0.000	5.100	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		5.100	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	0.000	5.100	0.000

Schedule:

Not Applicable

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME							PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /</b>	<b>BA 7</b>	<b>0205601N, HARM IMPROVEMENT</b>							9999, Congressional Adds	
D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost	
WPN BLI 232700, HARM MODS	0.000	0.000	0.000	41.135	43.260	44.158	45.110	800.034	973.697	
RDT&E NAVY P.E. 0205601N (2211)	72.145								72.145	
RDT&E ARMY P.E. 0604329A	152.381	26.000							178.381	
E. ACQUISITION STRATEGY: Not Applicable.										



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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>				R-1 ITEM NOMENCLATURE <b>0205604N Tactical Data Links</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	18.380	86.864	41.967	25.611	17.507	27.837	23.086	
1743 Link-16 Improvements	5.185	2.347	0.498					
2126 ATDLS Integration	13.195	82.717	41.469	25.611	17.507	27.837	23.086	
9999 Congressional Increases		1.800						
Quantity of RDT&E Articles		<b>3</b>						
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>(U) This program element (PE) develops and improves the Navy's tactical data link (TDL) systems. It includes the Link-16 Improvements and Advanced Tactical Data Link Systems (ATDLS) Integration Programs.</p> <p>(U) Link-16 Improvements extends Link-16 technological improvements to existing and new United States (US) Navy TDL systems, including Link-16 and Link-22. Link-16 Joint Range Extension (JRE) transfers Link-16 data via satellite communications and other non-radio frequency (RF) paths. High Throughput Link-16 provides improved data transmission rates by altering the modulation characteristics of Link-16. Link-22 will pass Link-16 data elements beyond the line-of-sight using a Time Division Multiple Access (TDMA) protocol and improved waveform with existing high-frequency (HF) and ultra-high-frequency (UHF) radios. This project allows more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer and eliminate line-of-sight transmission limitations thereby improving operational flexibility. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to provide higher central processing unit (CPU) speeds, update rate and memory capacity required for advanced multi-TDL processing functions. NGC2P will update CDLMS with advanced processors required to support critical data link functions including Link-16 JRE and Link-22.</p> <p>(U) ATDLS Integration Program develops new and improved capabilities for Navy Link-16 users. Development of new capabilities in ATDLS includes the Joint Interface Control Officer Support System (JSS), Common Link Integration Processing (CLIP) and Dynamic Network Management (DNM). The Joint Interface Control Officer (JICO) Support System (JSS) will be the standard joint service toolset to monitor and control Multi-TDL network architectures. The Common Link Integration Processing (CLIP) concept will introduce open system software required to reduce life cycle support costs and commercial off-the-shelf (COTS) technology refresh objectives and high throughput Link-16. The CLIP development concept addresses fundamental interoperability and affordability of tactical data link capabilities through cooperative development program under both U. S. Navy (USN) and U.S. Air Force (USAF) sponsorship. The principal goal of CLIP is to develop a multi-TDL software capability that can be utilized by multiple platforms (aircraft, ships, and ground) for all services. Dynamic Network Management (DNM) will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. DNM consists of different capabilities including network control technologies (NCT), new terminal protocols (time slot reallocation receipt compliance (TSR RC) and Stochastic Unified Multiple Access (SHUMA)) and has been significantly expanded to include a more robust TSR and adaptive multinetting. The DNM capability will be integrated into the JSS host system and also Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) and Joint Tactical Radio System (JTRS) terminals.</p> <p>(U) FY06 includes Congressional Increase for the Airborne Tactical Server (ATS). ATS is a digital audio/video recorder with removable mass memory and a CPU. The ATS will function as an adjunct processor within the F/A-18 to demonstrate Level 2 Airborne Network Integration. The ATS will use an existing contract for demonstration only as risk reduction for future Battlespace Networking efforts.</p> <p>(U) This program element also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.</p> <p>(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.</p>								

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justifica		<b>DATE: February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>		R-1 ITEM NOMENCLATURE <b>0205604N Tactical Data Links</b>	
<b>(U) B. PROGRAM CHANGE SUMMARY:</b>			
(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	18.744	86.364	54.032
FY07 President's Budget	18.380	86.864	41.967
Total Adjustments	-0.364	0.500	-12.065
<b>Summary of Adjustments</b>			
Shipboard Communications Adjustment			-12.200
Navy Working Capital Fund (NWCF) Civpers Efficiencies			-0.116
Small Business Innovation Research (SBIR)	-0.199		
Nuclear Physical Security (OSD-09)	0.004		
Inflation rate change			0.240
CIVPERS Pay Raise Rate Change			0.011
Sec. 8026(f): Federally Funded Research and Development Centers		-0.004	
Sec. 8125: Revised Economic Assumptions		-0.393	
Congressional Adds		1.800	
Congressional Action 1% Reduction		-0.903	
Department of Energy Transfer	-0.015		
Miscellaneous Navy Adjustments	-0.154		
Subtotal	-0.364	0.500	-12.065
 (U) Schedule:			
<p>Link 16 (project 1743) - Changes to the NGC2P development schedule are due to: 1) the incorporation of additional interoperability software requirements and 2) the change in test strategy to conduct operational evaluation (OPEVAL) on units delivered from the NGC2P competitive production contract that will include both JRE and Link-22 capabilities.</p> <p>ATDLS (project 2126) - JSS milestone (MS) C changed from 1st Qtr FY 07 to 4th Qtr FY 07, Full rate Production (FRP) changed from 4th Qtr FY 08 to 2nd Qtr FY 08, and engineering and test and evaluation milestones changed to align with current JSS Joint Program Schedule. Schedule changes are due to a slip in software delivery from the prime development contractor and to Navy funding reprioritization.</p> <p>CLIP MS B for Increment 1 slipped from 2nd Qtr FY 05 to 3rd Qtr FY 05 due to extended milestone review period. CLIP Increment 1 MS C slipped from 4th Qtr FY 07 to 2nd Qtr FY 08 and CLIP Increment 2 Program, Engineering and Test and Evaluation Milestones slipped due to Navy funding reprioritization. Dynamic Network Management (DNM) SHUMA initial operating capabilities (IOC) slipped from 1st Qtr FY 07 to 3rd Qtr FY 08; time slot reallocation receipt compliance (TSR) IOC slipped from 1st Qtr FY 08 to 3rd Qtr FY 08; TSR RC operational testing (OT) slipped from 3rd Qtr FY 07 to 1st Qtr FY 08 and Multinetting technical evaluation (TECHEVAL)/OPEVAL slipped from 1st Qtr FY 08 to 4th Qtr FY 08 due to Navy funding reprioritization.</p>			
 (U) Technical: Not applicable.			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>			PROJECT NUMBER AND NAME <b>1743 Link-16 Improvements</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	5.185	2.347	0.498					
RDT&E Articles Qty								

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

(U) Link-16 Improvements extends Link-16 technological improvements to existing and new United States Navy TDL systems, including Link-16 and Link-22. Link-16 Joint Range Extension (JRE) transfers Link-16 data via satellite communications and other non-radio frequency (RF) paths. High Throughput Link-16 provides improved data transmission rates by altering the modulation characteristics of Link-16. Link-22 will pass Link-16 data elements beyond the line-of-sight using a Time Division Multiple Access (TDMA) protocol and improved waveform with existing high-frequency (HF) and ultra-high-frequency (UHF) radios. This project allows more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer and eliminate line-of-sight transmission limitations thereby improving operational flexibility. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to provide higher central processing unit (CPU) speeds, update rate and memory capacity required for advanced multi-TDL processing functions. NGC2P will update CDLMS with advanced processors required to support critical data link functions including Link-16 JRE and Link-22.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>	PROJECT NUMBER AND NAME <b>1743 Link-16 Improvements</b>	
<b>(U) B. Accomplishments/Planned Program</b>			
<b>NGC2P CAPABILITY</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.185	2.347	0.498
RDT&E Articles Quantity			
<p>FY 05 Accomplishments: Continued development of NGC2P capability and development of training curricula. Conducted development testing, combat systems integration testing and link certification testing for NGC2P JRE capability. Achieved AEGIS Ballistic Missile Defense (BMD) Milestone (MS) C.</p> <p>FY 06 Plan: Conduct Operational Assessment (OA) for NGC2P JRE capability. Conduct development testing (DT), combat systems integration testing (CSIT) and link certification testing for NGC2P Link-22 capability. Achieve NGC2P MS C Low Rate Initial Production (LRIP).</p> <p>FY 07 Plan: Conduct technical evaluation (TECHEVAL) and operational evaluation (OPEVAL) of NGC2P JRE and Link-22 capabilities. Achieve full rate production (FRP) decision for NGC2P.</p>			

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>																						
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E,N/BA-7			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0205604N Tactical Data Links			<b>PROJECT NUMBER AND NAME</b> 1743 Link-16 Improvements																							
<p><b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2010</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2011</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN Line 2614 ATDLS</td> <td style="text-align: center;">2.370</td> <td style="text-align: center;">13.916</td> <td style="text-align: center;">12.458</td> <td style="text-align: center;">24.208</td> <td style="text-align: center;">26.279</td> <td style="text-align: center;">15.270</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p><b>(U) D. ACQUISITION STRATEGY:</b></p> <p>NGC2P software development is utilizing an existing Northrop Grumman Defense Mission Systems, Inc., cost plus contract.</p> <p><b>(U) E. MAJOR PERFORMERS:</b></p> <p>Northrop Grumman Defense Mission Systems, Inc., Reston, Virginia. Performs as prime hardware and software development contractor for NGC2P. Technical Direction Letter awarded 18 July 2003.</p> <p>Space &amp; Naval Warfare Systems Command Systems Center (SPAWARSYSCEN), San Diego, California. Performs as lead laboratory for NGC2P development, systems engineering, integration and test and evaluation.</p>										<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>	OPN Line 2614 ATDLS	2.370	13.916	12.458	24.208	26.279	15.270	0.000	Continuing	Continuing
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>																				
OPN Line 2614 ATDLS	2.370	13.916	12.458	24.208	26.279	15.270	0.000	Continuing	Continuing																				



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,NBA-7</b>				PROGRAM ELEMENT <b>0205604N Tactical Data Links</b>			PROJECT NUMBER AND NAME <b>1743 Link-16 Improvements</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
NGC2P Test & Evaluation	WX	SPAWARSYSCEN, San Diego, CA	4.626	0.702	11/04	0.630	11/05	0.189	11/06		6.147	6.147
NGC2P Test & Evaluation	WX	NCTSI, San Diego, CA	0.270	0.287	7/05	0.167	11/05				0.724	0.724
NGC2P Test & Evaluation	WX	OPTEVFOR, Norfolk, VA				0.050	11/05	0.146	11/06			
Subtotal T&E			4.896	0.989		0.847		0.335				
Remarks:												
Engineering Support and Travel	Various	Various	3.947	0.665	Various	0.625	Various	0.163	Various		5.400	5.400
Subtotal Management			3.947	0.665		0.625		0.163				
Remarks:												
Total Cost			57.543	5.185		2.347		0.498				
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E,N/BA-7</b>					<b>0205604N Tactical Data Links</b>										<b>1743 Link-16 Improvements</b>													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Program Milestones</b>		AEGIS BMD	MS C	LRIP		MS C	LRIP				FRP																	
NGC2P		△					△				△																	
<b>Engineering Milestones</b>																												
NGC2P																												
<b>Test &amp; Evaluation Milestones</b>		DT		DT/CSIT/ LINK CERT		OA		TECHEVAL		OPEVAL																		
NGC2P - JRE		△		△		△		△		△																		
								DT/CSIT/ LINK CERT		TECHEVAL		OPEVAL																
NGC2P - LINK-22								△		△		△																
<b>Contract Milestones</b>		AEGIS BMD				LRIP						FRP																
NGC2P		△				△						△																





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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,NBA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>			PROJECT NUMBER AND NAME <b>2126 ATDLS Integration</b>					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Project Cost	13.195	82.717	41.469	25.611	17.507	27.837	23.086		
RDT&E Articles Qty		3							
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>(U) ATDLS Integration Program develops new and improved capabilities for Navy Link-16 users. Development of new capabilities in ATDLS includes the Joint Interface Control Officer Support System (JSS), Common Link Integration Processing (CLIP) and Dynamic Network Management (DNM). The Joint Interface Control Officer (JICO) Support System (JSS) will be the standard joint service toolset to monitor and control Multi-TDL network architectures. The Common Link Integration Processing (CLIP) concept will introduce open system software required to reduce life cycle support costs and commercial off-the-shelf (COTS) technology refresh objectives and high throughput Link-16. The CLIP development concept addresses fundamental interoperability and affordability of tactical data link capabilities through cooperative development program under both U. S. Navy (USN) and U.S. Air Force (USAF) sponsorship. The principal goal of CLIP is to develop a multi-TDL software capability that can be utilized by multiple platforms (aircraft, ships, and ground) for all services. Dynamic Network Management (DNM) will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. DNM consists of different capabilities including network control technologies (NCT), new terminal protocols (time slot reallocation receipt compliance (TSR RC) and Stochastic Unified Multiple Access (SHUMA)) and has been significantly expanded to include a more robust TSR and adaptive multinetting. The DNM capability will be integrated into the JSS host system and also Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) and Joint Tactical Radio System (JTRS) terminals.</p> <p>(U) This project also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.</p>									

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>	PROJECT NUMBER AND NAME <b>2126 ATDLS Integration</b>	
<b>(U) B. Accomplishments/Planned Program</b>			
<b>Joint Interface Control Officer Spt Sys (JSS)</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	4.497	27.568	15.372
RDT&E Articles Quantity		3	
<p>This funding includes the Navy's contribution to the JSS joint development initiative with the Air Force. The Air Force funded the majority of the software development contract in FY 05.</p> <p>FY 05 Accomplishments: Completed Phase I. Awarded Phase II development contract for the continued development of the standard joint service toolset software to monitor and control multi-TDL network architectures. Conducted JSS Preliminary Design Review (PDR) of developed software. Performed laboratory integration test on engineering development model at contractor site.</p> <p>FY 06 Plan: Conduct development test (DT) and operational (OT) test on JSS software capabilities and functionalities developed and to demonstrate readiness for Joint MS C decision. Conduct Critical Design Review (CDR). Test DNM Network Control Technology (NCT) capabilities in JSS during development test. Continue software development to fully implement the multi-TDL architecture (MTA) planning capability and generation of operational task (OPTASK) Link message on-line/off-line mode, the local JICO database repository (JDR); database management and joint symbology; Joint Range Extension (JRE); interfaces to the Theater Battle Management Core System (TBMCS); Network Design Facility (NDF) for assessing JTIDS Network Library; Spectrum toolkit for submit/receive frequency request; software for calculation of Time Slot Duty Factor (TSDF) and Link-16 dynamic network management. Procure three engineering development models (EDM) for TECHEVAL.</p> <p>FY 07 Plan: Continue software development to include the implementation of remote JDR; dynamic network management and reconfiguration lists in Link-16 message standards; gateways to be interfaced to variable message format (VMF) and Intelligent Broadcast System (IBS); interface and network management for Link-22; on-line and off-line training mode via simulation and computer based training; and system security administration/profile management to ensure data security integrity. Conduct early operational assessment (EOA) on JSS software capabilities and functionalities developed and to demonstrate readiness for Joint MS C decision. Conduct development test and TECHEVAL on all software developed. Achieve Joint MS C Decision.</p>			

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>	PROJECT NUMBER AND NAME <b>2126 ATDLS Integration</b>
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**(U) B. Accomplishments/Planned Program**

<b>Common Link Integration Processing (CLIP)</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.060	40.101	20.146
RDT&E Articles Quantity			

This funding line includes the Navy's contribution to the CLIP joint development initiative with the Air Force. The Air Force funded the software development contract in FY 05.  
 FY 05 Accomplishments: Achieved CLIP Increment 1 Milestone B Decision. Commenced development of CLIP to provide a common interpretation of data link message standards and to minimize interoperability issues while reducing platform integration costs through a common software solution. Commenced development of Increment 1 software and documentation to implement the CLIP architecture, Common Host Interface (CHI), Link-16/Joint Range Extension, data translation and forwarding capabilities. Conducted CLIP Increment 1 Systems Requirement Review (SRR).  
 FY 06 Plan: Conduct CLIP Increment 1 PDR and CDR. Conduct development testing of Increment 1 software capabilities and functionality.  
 FY 07 Plan: Conduct CLIP Acceptance Testing (CAT) of Increment 1 software capabilities and functionality. Develop plans for platform integration and testing of Increment 1 software on lead air platform. Achieve CLIP Increment 2 Milestone B Decision. Commence development of Increment 2 software and documentation to implement the remaining Link-16 functionality, incorporate JRE, Variable Message Format (VMF), Wide-band Networking Waveform (WNV) messages, internet protocol (IP) based applications, and N-series message standards.

<b>Dynamic Network Management (DNM)</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.638	15.048	5.951
RDT&E Articles Quantity			

FY 05 Accomplishments: Continued DNM development to provide automatic reconfiguration of Link-16 networks and dynamic reallocation of network capacity to meet emergent warfighter requirements in the field as operations evolve. Completed Link-16 terminal and test bed modifications. Performed software formal qualification tests (SFQT), link certification and participate in Fleet exercise to evaluate DNM maturity. Conducted TSR RC CDR. Commenced design and development of platform integration of DNM into ship and aircraft. Integrated NCT capabilities into JSS. Conducted SHUMA link certification test in laboratory and in fleet. Developed DNM integrated logistics support products including system-operating procedures.  
 FY 06 Plan: Continue DNM development expanding capability to support full multinet capability allowing for data forwarding between Link-16, Internet Protocol (IP) networks and new Joint Tactical Radio System (JTRS) waveforms. Complete integration of NCT capabilities into JSS. Conduct Multinetting CDR. Conduct SHUMA development and operational tests. Commence shipboard and aircraft integration of the DNM capabilities including the expanded TSR RC. Conduct TSR RC development test. Conduct terminal recertification test. Conduct development test of multinetting capabilities. Continue support on DNM integrated logistic support products.  
 FY07 Plan: Continue development of multinetting capabilities and migration efforts to Wideband Networking Waveform (WNV) and JTRS waveforms. Continue platform integration of DNM capabilities.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>			PROJECT NUMBER AND NAME <b>2126 ATDLS Integration</b>				
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
RDT&E,DA	0.500								
OPN LI 2614 ATDLS	2.370	13.916	12.458	24.208	26.279	15.270	0.000	Continuing	Continuing
RDT&E,AF 0207434F/5050	125.813	157.677	184.100	151.289	155.710	159.298	162.024	Continuing	Continuing
SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits.									
RELATED RDT&E:									
PE 0604771D/P771 - Link-16: System development and demonstration for a Joint Tactical Data Link (TDL).									
PE 0207434F/5050 - TDL System Integration									
<b>(U) D. ACQUISITION STRATEGY:</b>									
The Air Force was designated as the acquisition executive for JSS. For JSS Phase I, the government competed and awarded three firm fixed price contracts to Northrop Grumman Defense Mission Systems, Inc.; Lockheed Martin Corporation and Advanced Information Engineering Services, Inc. for EDM system development and demonstration. For JSS Phase II, there was a down select to Northrop Grumman Defense Mission Systems, Inc. to complete Phase II development, integration and test utilizing cost plus award fee, firm fixed price, time and material and cost reimbursable contract options. For CLIP, a competitive cost plus award fee/incentive fee contract was awarded by the Navy to Northrop Grumman Defense Mission Systems, Inc. to develop a single common data link integration solution that can be configured to satisfy a broad-range of platforms. The DNM Network Controller Technology will be incorporated into JSS Block 1 and will utilize the contract for JSS. Remaining DNM development efforts will utilize an existing development contract with BAE Systems.									
<b>(U) E: MAJOR PERFORMERS:</b>									
Northrop Grumman Defense Mission Systems, Inc., Reston, Virginia (VA). Performs as prime hardware and software development contractor for JSS. Contract awarded 27 May 2005.									
Northrop Grumman Defense Mission Systems, Inc., Reston, VA. Performs as prime software development contractor for CLIP. Contract awarded 9 June 2005.									
Space & Naval Warfare Systems Command Systems Center (SPAWARSYSCEN), San Diego, California. Performs as lead laboratory for CLIP, JSS and DNM development, systems engineering,									
<b>(U) F: METRICS:</b>									
Earned Value Management is used for metrics reporting and risk management.									

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E,N/BA-7				0205604N Tactical Data Links			2126 ATDLS Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MIDS F/A-18 Integration	WX	Various	153.119								153.119	153.119
TADIL-J System Engineering	WX	SPAWARSSYSCEN, 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	SPAWARSSYSCEN, 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	Note 1	8.778									8.778
JSS Software Dev and Integration	CPAF/FFP	Northrop Grumman DMS, Reston, VA		3.165	Various	19.157	11/05	12.271	11/06	Continuing	Continuing	Continuing
JSS Systems Engineering	CPFF	Galaxy Scientific, Arlington, VA	0.249	0.289	Various	0.231	11/05					0.769
JSS Systems Engineering	WX	SPAWARSSYSCEN, San Diego, CA	0.193	0.360	1/05	2.066	11/05	0.888	11/06	Continuing	Continuing	Continuing
JSS Systems Engineering	Various	Various		0.145	Various	0.188	Various	0.426	Various	Continuing	Continuing	Continuing
CLIP Dev	WX	SPAWARSSYSCEN, San Diego, CA	0.568	1.411	Various	0.939	11/05	1.738	11/06	Continuing	Continuing	Continuing
CLIP Dev	Various	Various	3.383	1.237	Various	3.470	Various	3.251	Various	Continuing	Continuing	Continuing
CLIP SW Dev	CPAF/IF	Northrop Grumman DMS, Reston, VA				29.239	11/05	11.392	11/06	Continuing	Continuing	Continuing
TDL Training SW Dev	WX	NAVAIR Training Sys Div, Orlando, FL				1.605	11/05			Continuing	Continuing	Continuing
DNM System Engineering & Integration	WX	SPAWARSSYSCEN, San Diego, CA	4.438	2.597	11/04	7.439	11/05	2.400	11/06	Continuing	Continuing	Continuing
DNM Development	CPFF	Northrop Grumman DMS, Reston, VA	3.747								3.747	3.747
DNM Development	MIPR	Warner Robbins AFB, GA	0.761	0.064	11/04	0.660	11/05	0.134	11/06	Continuing	Continuing	Continuing
DNM Development	CPIF	BAE Systems, Wayne, NJ (DLS)	0.117			2.210	1/06	0.563	11/06	Continuing	Continuing	Continuing
DNM Host Platform Integration Sys Eng	CPFF	SeaPort-E/TBD				0.550	1/06	0.631	11/06	Continuing	Continuing	Continuing
DNM Systems Engineering	Various	Various	1.194	0.870	Various	0.907	Various	0.633	Various	Continuing	Continuing	Continuing
Subtotal Product Development			296.110	10.138		68.661		34.327				

Note 1. JSS Phase I Software Development contracts awarded to three vendors: Northrop Grumman Defense Missions, Reston, VA; Lockheed Martin Corporation, Moorestown, New Jersey; and to Advanced Information Engineering Services, Inc., Buffalo, New York.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)										DATE: February 2006		
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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	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	11/05	0.445	11/06	0.261	1.259	1.259
JSS T&E	WX	OPTEVFOR, Norfolk, VA				0.442	11/05	0.222	11/06	0.204	0.868	0.868
JSS T&E	WX	NCTSI, San Diego, CA		0.020	1/05	0.111	11/05	0.056	11/06	0.057	0.244	0.244
JSS Test Articles	CPAF/FFP	Northrop Grumman DMS, Reston, VA				3.536	11/05	0.118	11/06		3.654	3.654
JSS Test Articles	WX	SPAWARSYSCEN, San Diego, CA				0.553	11/05	0.222	11/06		0.775	0.775
CLIP T&E	WX	OPTEVFOR, Norfolk, VA		0.060	1/05	0.066	12/05	0.069	11/06	Continuing	Continuing	Continuing
CLIP T&E	WX	SPAWARSYSCEN, San Diego, CA				3.179	11/05	2.609	11/06	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	SPAWARSYSCEN, San Diego, CA	3.167	0.900	11/04	2.486	11/05	0.799	11/06	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	OPTEVFOR, Norfolk, VA	0.214			0.663	11/05	0.167	11/06	Continuing	Continuing	Continuing
Dynamic Network Management T&E	WX	Various	0.428	0.550	Various	0.332	Various	0.313	Various	Continuing	Continuing	Continuing
ATDLS T&E Support	CPFF	AMSEC LLC, Virginia Beach, VA		0.267	11/04	0.272	11/05	0.280	11/06	Continuing	Continuing	Continuing
Subtotal T&E			40.340	1.797		12.193		5.300				
Remarks:												
Engineering Support and Travel	Various	Various	11.753	1.260	Various	1.863	Various	1.842	Various	Continuing	Continuing	Continuing
Subtotal Management			11.753	1.260		1.863		1.842				
Remarks:												
Total Cost			348.203	13.195		82.717		41.469				

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EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME												
<b>RDT&amp;E,N/BA-7</b>								<b>0205604N Tactical Data Links</b>								<b>2126 ATDLS Integration</b>												
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Program Milestones</b>																												
JSS																												
CLIP																												
DNM																												
<b>Engineering Milestones</b>																												
JSS																												
CLIP																												
DNM																												
<b>Test &amp; Evaluation Milestones</b>																												
JSS																												
CLIP P INCREMENT 1																												
CLIP INCREMENT 2																												
DNM																												
<b>Contract Milestones</b>																												
JSS																												
CLIP																												

The Joint Interface Control Officer (JICO) Support System (JSS) is a multi-service development effort and is currently funded by the Navy's Tactical Data Links International Program Office (PE 0205604N/2126) and the Air Force's Electronic Systems Center Tactical Data Links System Program Office (TDL SPO) (PE 0207434F/5050). The JSS Program schedule is shown above. The CLIP Program is a joint initiative and is funded by various programs. The development of the CLIP software is funded by the Navy's Tactical Data Links International Program Office (PE 0205604N/2126) and the Air Force Tactical Data Links (TDL) Gateways and Network Management (TGN) System Program Office (PE 0207434F/5050). The integration of CLIP software is funded by platforms. The CLIP Program schedule is shown above.



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Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT <b>0205604N Tactical Data Links</b>				PROJECT NUMBER AND NAME <b>2126 ATDLS Integration</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
DNM TSR CDR	2Q							
DNM SHUMA SFQT	2Q							
CLIP Increment 1 MS B	3Q							
DNM SHUMA Link Certification Test	3Q							
JSS Phase II Contract Award	3Q							
CLIP Increment I Contract Award	3Q							
CLIP Increment 1 SRR	4Q							
DNM SHUMA Fleet Exercise	4Q							
JSS PDR		1Q						
CLIP Increment 1 PDR		1Q						
CLIP Increment 1 CDR		2Q						
DNM Multinetting CDR		2Q						
SHUMA DT		2Q						
DNM TSR RC Platform Integration		2Q						
JSS CDR		3Q						
JSS/NCT DT		3Q						
JSS DT/OT/Integration Testing		3Q						
CLIP Increment 1 DT		3Q						
DNM SHUMA OT		3Q						
DNM TSR RC DT		3Q						
DNM Multinetting DT		4Q						
JSS EOA			1Q					
CLIP Increment 2 MS B			3Q					
JSS DT/TECHEVAL			3Q					
CLIP Increment 2 Contract Award			3Q					
JSS MS C			4Q					
CLIP Increment 1 CAT			4Q					

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E,N/BA-7</b>	<b>0205604N Tactical Data Links</b>				<b>2126 ATDLS Integration</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
CLIP Increment 2 SRR				1Q				
JSS OPEVAL				1Q				
DNM TSR RC OT				1Q				
JSS FRP				2Q				
CLIP Increment 1 MS C				2Q				
JSS/NCT OT				2Q				
CLIP Increment 1 Platform Integ				2Q				
DNM SHUMA/TSR RC IOC				3Q				
CLIP Increment 2 PDR				3Q				
CLIP Increment 1 OT				4Q				
DNM Multinetting TECHEVAL/OPEVAL				4Q				
CLIP Increment 2 CDR					1Q			
CLIP Increment 2 DT					2Q			
DNM Multinetting IOC						2Q		
CLIP Increment 2 CAT							4Q	

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EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>			PROJECT NUMBER AND NAME <b>9999 Congressional Increases</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost		1.800						
RDT&E Articles Qty								
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>(U) Congressional Increase for the Airborne Tactical Server (ATS). ATS is a digital audio/video recorder with removable mass memory and a central processing unit (CPU). The ATS will function as an adjunct processor within the F/A-18 to demonstrate Level 2 Airborne Network Integration. The ATS will use an existing contract for demonstration only as risk reduction for future Battlespace Networking efforts.</p>								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205604N Tactical Data Links</b>	PROJECT NUMBER AND NAME <b>9999 Congressional Increases</b>	
<b>(U) B. Accomplishments/Planned Program</b>			
<b>Airborne Tactical Server (9888)</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.800	
RDT&E Articles Quantity			
<p>(U) Congressional Increase for the Airborne Tactical Server (ATS). ATS is a digital audio/video recorder with removable mass memory and a CPU. The ATS will function as an adjunct processor within the F/A-18 to demonstrate Level 2 Airborne Network Integration. The ATS will use an existing contract for demonstration only as risk reduction for future Battlespace Networking efforts.</p>			

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>FEBRUARY 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-07</b>				R-1 ITEM NOMENCLATURE 0205620N Surface ASW Combat System Integration				
<b>COST (\$ in Millions)</b>		<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
Total PE Cost		20.397	12.751	9.417	9.849	10.015	10.179	10.405
0896 / AN/SQQ-89 Modifications		0.000	1.244	4.784	4.936	5.008	5.075	5.184
1916 / Surface ASW Systems Improvements		18.964	3.207	4.633	4.913	5.007	5.104	5.221
1916C / Surface ASW System Improvements		0.000	6.100	0.000	0.000	0.000	0.000	0.000
9627 / Marine Mammal Detection and Mitigation		1.433	0.000	0.000	0.000	0.000	0.000	0.000
9795N / Surface Ship Sonar Integrated Data Fusion		0.000	2.200	0.000	0.000	0.000	0.000	0.000
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>The objective of this Program Element (PE) is to significantly improve existing surface ship sonar system capabilities through quick and affordable development and integration of emergent transformational technologies.</p> <p>Project 0896 focuses on the identification, development, test and integration of the most promising ASW technologies into the AN/SQQ-89(V) Surface USW Combat System. This project will provide a clear transition path for emergent transformational ASW technologies to be quickly and affordably developed and incorporated into the AN/SQQ-89(V). This project will capitalize on a Rapid Technology Transition Process, enabling the aggressive pursuit of improvements to system portability, extension of interoperability with multiple platforms, and opportunity to export these capabilities Navy wide. Time phased insertion of ASW COTS improvements will address the entire combat system, including new sensor integration, acoustics, fire control, contact management, performance prediction, operator productivity and on-board training.</p> <p>Project 1916 improves 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. This project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) initiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar biostatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (Baseline 3/4) and DDG51 (FLT IIA) class ships. The Open Architecture (OA) AN/SQQ-89A(V)15 system drives the 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 (as developed under Project 0896) delivered to the AN/SQQ-89(V) prime integrator every two years.</p> <p>Projects 1916 (FY 2005) and 1916C (FY 2006) include Congressional Adds for 'Surface Ship ASW R&amp;D Improvements'. Funding will be used to continue the development of promising technologies for at-sea tests in representative war fighting environments.</p> <p>Projects 1916 (FY 2005) and 1916C (FY 2006) include Congressional Adds for 'Common Surface and Air Undersea Warfare'. Funding will be used to continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single "Best of Breed" Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.</p> <p>Project 9627 (FY 2005) includes Congressional Add for 'Marine Mammal Detection and Mitigation (MMDM)'. Funding was used to implement and improve technology that was developed under a Phase I and Phase II Small Business Technology Transfer (STTR) that will allow the Navy to detect marine mammals vocalizing in the vicinity of naval vessels. Once the system alerts on the marine mammal vocalizations, the system will localize marine mammals and provide mitigation recommendations to the sonar operator and ship's captain (e.g., cease sonar operations, maneuver the vessel, etc.).</p> <p>Project 9795N (FY 2006) includes Congressional Add for 'Surface Ship Sonar Integrated Data Fusion Initiative'. Funding will be used to support the development, test and evaluation of an integrated sonar data fusion and display capability for Surface Ship USW Combat Systems.</p>								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>		PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>0.000</b>	<b>1.244</b>	<b>4.784</b>	<b>4.936</b>	<b>5.008</b>	<b>5.075</b>	<b>5.184</b>
RDT&E Articles Qty								

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

The AN/SQQ-89 Modifications Project will focus on the identification, development, test, integration and delivery of the most promising ASW technologies to the AN/SQQ-89(V) Surface USW Combat System. This project will provide a clear transition path for emergent transformational ASW technologies (ie, through Task Force ASW initiatives) to be quickly and affordably developed and incorporated. This project will capitalize on a Rapid Technology Transition Process, enabling the aggressive pursuit of improvements to system portability, extension of interoperability with multiple platforms, and opportunity to export these capabilities Navy wide. Time phased insertion of ASW COTS improvements will address the entire combat system, including new sensor integration, acoustics, fire control, contact management, performance prediction, operator productivity and on-board training.

This project will take technologies developed by PEO IWS 5 (Program Executive Office for Integrated Warfare Systems, Undersea Systems Program Office), Office of Naval Research (ONR), Defense Advanced Research Planning Agency (DARPA) and the Oceanographer of the Navy that achieve significant improvements in ASW effectiveness and integrate them into the AN/SQQ-89(V) Surface USW Combat System. The following improvements have been considered in the near term: Develop and integrate the Low Frequency Array's (LFA) low frequency coherent multi-static processing capability for the AN/SQR-19 towed array group; leverage ARCI's Sparsely Populated Volumetric Array (SPVA) technology to increase bandwidth and incorporate acoustic intercept capability for the surface community; develop a Data Fusion capability that will integrate ASW, radar and other non-acoustic sensors into an integrated display environment; and develop an effective and affordable underwater Acoustic Communications (ACOMMS) system for seamless communications between ASW platforms. Additional improvements will be developed and integrated as new, promising technologies are identified.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Identification, Development and Integration of ASW Technologies Into adjunct AN/SQQ-89(V) Surface USW Combat Systems	0.000	1.244	4.534
RDT&E Articles Quantity			

FY06-07: Identify technologies developed by PEO IWS 5, Office of Naval Research (ONR), Defense Advanced Research Planning Agency and the Oceanographer of the Navy that may achieve significant improvements in ASW effectiveness if integrated into the AN/SQQ-89(V) Surface USW Combat System. Selected promising technologies will be sufficiently integrated into adjunct systems installed in the AN/SQQ-89(V) such as the Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) so that at-sea tests can be conducted and performance assessed. Integration of successful technologies will be completed for installation on CG47, DDG51 and FFG7 class ships as part of SIPS software updates. Successful software improvements will also be passed on to the AN/SQQ-89(V) prime integrator as part of the spiral development build process under Project 1916, for fielding in the open system architecture AN/SQQ-89A(V)15 USW Combat System that is being installed on CGs 59-73 and DDGs 79-112.

	FY 05	FY 06	FY 07
At-Sea Testing of Select ASW Technologies	0.000	0.000	0.250
RDT&E Articles Quantity			

FY07: Coordinate and conduct at-sea test of select emergent, significant ASW technologies on ships equipped with AN/SQQ-89(V) adjunct Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) systems. Assess results.

	FY 05	FY 06	FY 07
RDT&E Articles Quantity			

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications	
<b>C. PROGRAM CHANGE SUMMARY:</b>			
Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	0.000	1.263	5.149
FY 2007 President's Budget	0.000	1.244	4.784
Total Adjustments	0.000	-0.019	-0.365
Summary of Adjustments:			
Recissions		-0.019	
Other misc. changes			-0.365
Subtotal	0.000	-0.019	-0.365
Schedule:			
Not applicable.			
Technical:			
Not applicable.			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 2136/ AN/SQQ-89 Surface ASW Combat System	16.1	34.0	37.8	37.5	99.1	93.5	106.6	Continuing	Continuing
RDT&E PE 0205620N/ Surface ASW Systems Improvements/ Project 1916	19.0	3.2	4.6	4.9	5.0	5.1	5.2	Continuing	Continuing
RDT&E PE 0603553N/ Surface ASW/ Project 1704	17.2	17.1	38.7	42.3	45.6	55.0	55.4	Continuing	Continuing

**E. ACQUISITION STRATEGY:**

Identify and test promising evolutionary and transformational technologies via incorporation on adjunct Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) systems; deliver successful technologies in the form of software updates to AN/SQQ-89(V) prime system integrator for integration into the AN/SQQ-89A(V)15 USW Combat System via spiral development build process.

Award new, competitive contract for AN/SQQ-89(V) prime system integrator in FY 2007.

**F. MAJOR PERFORMERS:**

Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic processor, acoustic intercept, and prime contractor for adjunct AN/SQQ-89(V) Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) programs.

Adaptive Methods (AM), MD - SBIR Phase III contract for engineering services in support of hardware/software integration, and test of advanced sensor interfaces and sensor processing improvements including Data Fusion (DF), Adaptive Beamforming (ABF), and Calibrated Reference Hydrophone (CRH) sensor interface.

Naval Sea Systems Command, Newport, RI - AN/SQQ-89(V) Technical Design Agent support.

University of Texas Applied Research Laboratory (UT/ARL), TX - Sonar Performance Prediction Functional Segment (SPPFS) software development.

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Exhibit R-3 Cost Analysis (page 1)											DATE: <b>FEBRUARY 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-07</b>			0205620N Surface ASW Combat System Integration				0896 AN/SQQ-89 Modifications							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
S/W Development/Test/Integration	C/CPFF	AAC, NY	0.000					0.135	02/06	0.551	11/06	Continuing	Continuing	
S/W Development/Test/Integration	C/CPFF	AM, MD	0.000					0.793	02/06	3.233	11/06	Continuing	Continuing	
S/W Support	WX	ONI, MD	0.000					0.060	02/06	0.060	10/05	Continuing	Continuing	
S/W Development/Test/Integration	C/CPFF	UT/ARL, TX	0.000					0.080	02/06	0.324	10/06	Continuing	Continuing	
S/W Development/Testing/Support	Var.	Var.	0.000					0.176	02/06	0.366	11/05	Continuing	Continuing	
Subtotal Product Development			0.000			0.000		1.244		4.534		Continuing	Continuing	
Remarks:														
Subtotal Support			0.000			0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)											DATE: <b>FEBRUARY 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-07</b>			0205620N Surface ASW Combat System Integration				0896 AN/SQQ-89 Modifications							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	WX	NAVSEA/NEWPORT, RI	0.000							0.250	10/06	Continuing	Continuing	
Subtotal Test & Evaluation			0.000			0.000		0.000		0.250		Continuing	Continuing	
Remarks:														
Subtotal Management			0.000			0.000		0.000		0.000		Continuing	Continuing	
Remarks:														
Total Cost			0.000	0.000		0.000		1.244		4.784		Continuing	Continuing	
Remarks:														

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Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 7 of 20)

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EXHIBIT R4, Schedule Profile																								DATE: <b>FEBRUARY 2006</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>								PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration								PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition/Contract Milestones/Reviews</b>									New Contract Award - AN/SQQ-89(V) Prime System Integrator																							
Identification of Promising ASW Technologies for Test on SQQ-89(V) Adjunct Systems									[Bar spanning from 2006 Q2 to 2011 Q4]																							
Select Technologies for Test on SQQ-89(V) Adjunct Systems									[Bar spanning from 2007 Q1 to 2011 Q4]																							
Integration of Select Technologies Into Adjunct SQQ-89(V) Systems for At-Sea Test													△				△				△				△				△			
Complete Integration of Successful Technologies for Installation via S/W Upgrades on Adjuncts and SQQ-89A(V)15																	△				△				△				△			
<b>Test &amp; Evaluation Milestones</b>																																
At-Sea Test and Evaluation of Select Technologies on SQQ-89(V) Adjunct Systems																					□				□				□			
<b>Production Milestones</b>																																
Production S/W Upgrade Delivery to Adjunct SQQ-89(V) SIPS Backfit Program (OPN BLI 2136)																	△								△							
Production S/W Upgrade Delivery to SQQ-89A(V)15 Spiral Development Build Program (RDT&E,N PE 0205620N, Project 1916)																									△				△			

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>		PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>18.964</b>	<b>3.207</b>	<b>4.633</b>	<b>4.913</b>	<b>5.007</b>	<b>5.104</b>	<b>5.221</b>
RDT&E Articles Qty								

**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) Measures of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth.

This project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) initiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar biostatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 and DDG51 (FLT 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).

The open system architecture and high performance COTS processing hardware on ships fielded with the AN/SQQ-89A(V)15 combat system provides an opportunity to integrate select Pre-Planned Product Improvements (P3I) as well as emergent, transformational ASW technological improvements (as developed under Project 0896) that were previously unachievable. The USW suites on these ships will require periodic upgrades to remain effective well into the 21st century. To achieve this, this project will package and deliver incremental upgrades every two years to the AN/SQQ-89A(V)15 production program via a spiral development build process by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral, and via reduced manning on AN/SQQ-89(V) equipped ships, active classification sonar upgrades, marine mammal detection and mitigation, Multi-Static Active ASW, 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.

Project 1916 (FY 2005) includes a Congressional Add for 'Surface Ship ASW R&D Improvements'. Funding was used to continue the development of promising technologies for at-sea tests in representative war fighting environments.

Project 1916 (FY 2005) includes a Congressional Add for 'Common Surface and Air Undersea Warfare'. Funding was used to continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single "Best of Breed" Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Surface Ship ASW R&D Improvements	7.265	0.000	0.000
RDT&E Articles Quantity			

FY05: (Congressional Add) Continued the development of Surface Ship ASW improvements through use of portable, modular software to ease transition to new families of COTS hardware and low cost incorporation of improved processing algorithms. Address critical surface sonar capability shortfalls such as: active processing in littoral areas, torpedo defense, and automation technology for reduced manning by using the Advanced Processing Builds (APB) model that has rapidly delivered transformational modernization through exploitation of application reuse and low cost incorporation of improved processing algorithms.

	FY 05	FY 06	FY 07
Common Surface and Air Undersea Warfare	1.353	0.000	0.000
RDT&E Articles Quantity			

FY05: (Congressional Add) Continued the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single "Best of Breed" Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities. This capability will be demonstrated using network based, mainstream technology, to evaluate increased USW situational awareness, accuracy, and reduced USW prosecution time through automated fusion and connectivity of shipboard USW and airborne sensor data contacts.

	FY 05	FY 06	FY 07
LAMPS Mk III Blk II CAUSS & Ku Band Integration	0.500	0.000	0.000
RDT&E Articles Quantity			

FY05: Completed the integration of the LAMPS Mk III Blk II Common Airborne Undersea Sensor Software (CAUSS) and Ku Band on-board AN/SQQ-89(V) platforms, including the AN/SQQ-89A(V)15.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements

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

	FY 05	FY 06	FY 07
AN/SQQ-89(V) Test & Evaluation Program	0.390	0.400	0.450
RDT&E Articles Quantity			

FY05-07: Providing AN/SQQ-89(V) test and evaluation planning support, System Assessment Team (SAT) analysis, update Test & Evaluation Master Plan (TEMP) to reflect AN/SQQ-89A(V)15 spiral development build program, coordinate and conduct roll-on roll-off tests of AN/SQQ-89(V) systems, provide performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using MOP and measures of effectiveness (MOE) methods.

	FY 05	FY 06	FY 07
AN/SQQ-89A(V)15 At-Sea Testing	1.896	0.000	0.000
RDT&E Articles Quantity			

FY05: Completed the resolution of issues that arose from A/SQQ-89A(V)15 Build 0 FY04 Developmental Test & Evaluation (DT&E) DT-IIIAQ. Coordinate and conduct Initial Operational Test & Evaluation (IOT&E) OT-IIIK of the AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype system.

	FY 05	FY 06	FY 07
Enhancements via SQQ-89A(V)15 Spiral Development Build Process	7.560	2.807	4.183
RDT&E Articles Quantity			

FY05: Completed development of a common superset software baseline for AN/SQQ-89A(V)15 (Backfit on CG47 and DDG51 class) and AN/SQQ-89(V)15 w/ EC 200 (Forward fit on DDG51 class). Resolve remaining delta issues that arose from AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype FY05 Operational Test OT-IIIK.  
 FY05-07: Developing modest enhancements to the AN/SQQ-89A(V)15 Open System Architecture via the incorporation of transformational technologies through a spiral development process. Items include Explosive Source integration with AN/SQQ-89(V) processes, simplification of displays and active processing, incorporation of all Scaled Improved Performance Sonar (SIPS) features, Sonar Logger capability to significantly reduce operator data logging requirements, fusion of sensor data to reduce the number of displays required for system operation, and development of improved torpedo detection algorithms to be incorporated into the Torpedo Recognition and Alertment Functional Segment (TRAFS) for delivery to CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs. Resolve issues that arise from AN/SQQ-89(V) Test & Evaluation program. Build 1 segment software update/integration effort completes in FY06. Build 2 segment software update development begins FY06 and integration effort completes in FY08. Build 3 segment software development begins FY07 and integration effort completes in FY09.



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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements																																								
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;"></th> <th style="text-align: right; width: 15%;">FY 2005</th> <th style="text-align: right; width: 15%;">FY 2006</th> <th style="text-align: right; width: 15%;">FY 2007</th> </tr> </thead> <tbody> <tr> <td>Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2006 President's Budget</td> <td style="text-align: right;">19.387</td> <td style="text-align: right;">3.256</td> <td style="text-align: right;">4.831</td> </tr> <tr> <td>FY 2007 President's Budget</td> <td style="text-align: right;">18.964</td> <td style="text-align: right;">3.207</td> <td style="text-align: right;">4.633</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.423</td> <td style="text-align: right; border-top: 1px solid black;">-0.049</td> <td style="text-align: right; border-top: 1px solid black;">-0.198</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments:</td> </tr> <tr> <td style="padding-left: 40px;">Recissions</td> <td></td> <td style="text-align: right;">-0.049</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Other General Provisions</td> <td style="text-align: right;">-0.423</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Other misc. changes</td> <td></td> <td></td> <td style="text-align: right;">-0.198</td> </tr> <tr> <td style="padding-left: 40px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-0.423</td> <td style="text-align: right; border-top: 1px solid black;">-0.049</td> <td style="text-align: right; border-top: 1px solid black;">-0.198</td> </tr> </tbody> </table>  <p>Schedule: Not applicable.</p>  <p>Technical: Not applicable.</p>				FY 2005	FY 2006	FY 2007	Funding:				FY 2006 President's Budget	19.387	3.256	4.831	FY 2007 President's Budget	18.964	3.207	4.633	Total Adjustments	-0.423	-0.049	-0.198	Summary of Adjustments:				Recissions		-0.049		Other General Provisions	-0.423			Other misc. changes			-0.198	Subtotal	-0.423	-0.049	-0.198
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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>FEBRUARY 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 2136/ AN/SQQ-89 Surface ASW Combat System	16.1	34.0	37.8	37.5	99.1	93.5	106.6	Continuing	Continuing
RDT&E PE 0205620N/ AN/SQQ-89 Modifications/ Project 0896	0.0	1.2	4.8	4.9	5.0	5.1	5.2	Continuing	Continuing

**E. ACQUISITION STRATEGY:**

Completed AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype, performed installation, conducted Developmental Test & Evaluation (DT&E), and Initial Operational Test & Evaluation (IOT&E) 4Q FY 2005. Via spiral development build process, incorporate evolutionary and transformational technologies into AN/SQQ-89A(V)15 systems at scheduled intervals. Award new, competitive contract for AN/SQQ-89(V) prime system integrator in 1Q FY 2007.

**F. MAJOR PERFORMERS:**

Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic processor, acoustic intercept, and prime contractor for 'Common Surface and Air Undersea Warfare' FY 2005 Congressional Add provided to develop and test a single "Best of Breed" Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.

Adaptive Methods (AM), MD - SBIR Phase III contract for common acoustic processor and towed array/beamformer processing improvements to the Multi-Function Towed Array (MFTA) functional segment.

General Dynamics-AIS (formerly DSR), VA - SBIR Phase III contract for common acoustic processor, prime contractor for 'Surface Ship ASW R&D Improvements' FY 2005 Congressional Add provided to complete the development of promising technologies for at-sea tests in representative warfighting environments.

Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD - Design, development and integration of MFTA, Torpedo Detection Classification and Localization (TDCL) improvements, and emerging active sonar technologies into the AN/SQQ-89(V).

Lockheed Martin, NY - Prime AN/SQQ-89(V) System Integrator, Production and Design Agent.

Naval Sea Systems Command, Newport, RI - AN/SQQ-89(V) Technical Design Agent support.

Naval Sea Systems Command, Dahlgren, VA - AN/SQQ-89(V) Technical Design Agent support.

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)											DATE: <b>FEBRUARY 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-07</b>			0205620N Surface ASW Combat System Integration				1916 Surface ASW Systems Improvements							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
S/W Development/Integration/Test	C/CPFF	AAC, NY	10.485			1.656	12/04	0.742	12/05	0.825	11/06	0.000	13.708	
S/W Development/Integration/Test	C/CPFF	AM, MD	5.782					1.090	02/06	1.250	11/06	0.000	8.122	
S/W Development/Integration/Test	C/CPFF	GD-AIS, VA	10.461			5.865	02/05					0.000	16.326	
S/W Development/Integration/Test	C/CPFF	JHU/APL, MD	9.467			0.374	12/04					Continuing	Continuing	
S/W Development/Integration/Test	C/CPAF	LOCKHEED MARTIN, NY	58.011			5.054	11/04	0.200	02/06			0.000	63.265	
S/W Development/Integration/Test	C/CPAF	TBD, TBD (FY07 Award)	0.000							0.700	11/06	Continuing	Continuing	
S/W TDA Support	WX	NAVSEA/DAHLGREN, VA	8.957			0.363	10/04	0.050	11/05	0.200	10/06	Continuing	Continuing	
S/W TDA Support	WX	NAVSEA/NEWPORT, RI	29.532			0.481	11/04	0.100	11/05	0.400	10/06	Continuing	Continuing	
S/W Dev./Integration/Test/Support	Var.	Var.	37.144			2.319	10/04	0.051	11/05	0.225	10/06	Continuing	Continuing	
Subtotal Product Development			169.839			16.112		2.233		3.600		Continuing	Continuing	
Remarks:														
Engineering & Tech. Svcs (ETS)	Var.	Var.	0.900									0.000	0.900	
Studies, Analyses & Eval. (SAE)	Var.	Var.	1.500									0.000	1.500	
Subtotal Support			2.400	0.000		0.000		0.000		0.000		0.000	2.400	
Remarks:														

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Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 15 of 20)

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>FEBRUARY 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N / BA-07</b>			0205620N Surface ASW Combat System Integration			1916 Surface ASW Systems Improvements								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Test Conduct/Support	WX	COMOPTEVFOR, VA	0.833			1.826	12/04					0.000	2.659	
DT/OT Test Conduct/Support	WX	NAVSEA/NEWPORT, RI	5.681									0.000	5.681	
IV&V/SAT/TEMP Assess./Update	WX	NAVSEA/NEWPORT, RI	3.422			0.390	10/04	0.268	11/05	0.275	10/06	Continuing	Continuing	
DT/OT/Miscellaneous T&E	Var.	Var.	1.039			0.070	10/04	0.132	11/05	0.175	10/06	Continuing	Continuing	
Subtotal T&E			10.975			2.286		0.400		0.450		Continuing	Continuing	
Remarks:														
Program Management Support	CPAF	BAE Systems, MD	7.216			0.416	10/04	0.424	12/05	0.433	10/06	Continuing	Continuing	
Program Office Travel	PD	NAVSEA PEO IWS5, DC	1.454			0.150	10/04	0.150	11/05	0.150	10/06	Continuing	Continuing	
Subtotal Management			8.670			0.566		0.574		0.583		Continuing	Continuing	
Remarks:														
Total Cost			191.884	0.000		18.964		3.207		4.633		Continuing	Continuing	
Remarks:														

R-1 SHOPPING LIST - Item No. 181

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Exhibit R-2, RD TEN Budget Item Justification  
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>FEBRUARY 2006</b>																											
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>												PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration								PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements																															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011																										
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																							
<b>Acquisition/Contract Milestones/Reviews</b>												A(V)15 Build 0 IOC (CG73) <span style="float: right;">★</span>								New Contract Award - AN/SQQ-89(V) Prime System Integrator <span style="float: right;">△</span>																															
AN/SQQ-89A(V)15 Software Segment Development/Integration /Test - <b>Build 1</b>												GAT <span style="float: right;">▲</span>																																							
AN/SQQ-89A(V)15 Software Segment Development/Integration/Test - <b>Build 2</b>												Development				GAT <span style="float: right;">▲</span>				Integration/Test																															
AN/SQQ-89A(V)15 Software Segment Development/Integration/Test - <b>Build 3</b>																Development				GAT <span style="float: right;">▲</span>				Integration/Test																											
AN/SQQ-89A(V)15 Software Segment Development/Integration/Test - <b>Build 4</b>																				Development				GAT <span style="float: right;">▲</span>				Integration/Test																							
<b>Test &amp; Evaluation Milestones</b>												Build 0 CG73 DT-III AQ <span style="float: right;">■</span>				Build 0 CG73 CT-III K <span style="float: right;">■</span>																																			
Developmental Test & Evaluation (DT&E)																																																			
Initial Operational Test & Evaluation (IOT&E)																																																			
<b>Production Milestones</b>																Build 1 <span style="float: right;">△</span>				Build 2 <span style="float: right;">△</span>				Build 3 <span style="float: right;">△</span>																											
AN/SQQ-89A(V)15 Production Software Delivery to System Integrator via Spiral Development Process																																																			
AN/SQQ-89A(V)15 CG B/L 3/4 (OPN BLI 0960) and DDG FLT IIA (OPN BLI 2136) Backfit Fielding Plans (Install Start Date)																				BLD 1 DDG (1)				BLD 1+ DDG (2)				BLD 1+ DDG (3)				BLD 2 DDG (4)				BLD 2 DDG (5)				BLD 2 DDG (6)				BLD 2 DDG (7)				BLD 2 CG (1) DDG (8-11)			

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Exhibit R-2, RTDEN Budget Item Justification  
(Exhibit R-2, page 17 of 20)

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>FEBRUARY 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements				
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Build 0 Developmental Test & Evaluation DT-IIIAQ (CG73)		1Q						
Build 0 Initial Operational Test & Evaluation OT-IIIK (CG73)		4Q						
Build 0 Initial Operational Capability (IOC) (CG73)			1Q					
Build 1 S/W Segment Development		1Q-2Q						
Build 1 S/W Segment GAT		2Q						
Build 1 S/W Segment Integration/Test		3Q-4Q	1Q					
Build 1 Production S/W Delivery to System Integrator			2Q					
Build 2 S/W Segment Development			1Q-4Q	1Q				
Build 2 S/W Segment GAT				1Q				
Build 2 S/W Segment Integration/Test				2Q-4Q	1Q-2Q			
Build 2 Production S/W Delivery to System Integrator					3Q			
Build 3 S/W Segment Development				2Q-4Q	1Q-4Q	1Q		
Build 3 S/W Segment GAT						1Q		
Build 3 S/W Segment Integration/Test						2Q-4Q	1Q	
Build 3 Production S/W Delivery to System Integrator							2Q	
Build 4 S/W Segment Development						2Q-4Q	1Q-4Q	1Q
Build 4 S/W Segment GAT								1Q
Build 4 S/W Segment Integration/Test								2Q-4Q
New Contract Award - AN/SQQ-89(V) Prime System Integrator				1Q				
DDG51 Class FLT IIA Backfit Install (Build 1)(Ship 1)					4Q			
DDG51 Class FLT IIA Backfit Install (Build 1+)(Ships 2,3)						1Q, 3Q		
DDG51 Class FLT IIA Backfit Install (Build 2)(Ships 4,5)							1Q, 4Q	
DDG51 Class FLT IIA Backfit Install (Build 2)(Ships 6,7,8,9,10,11)								1Q-2Q, 4Q
CG47 Class B/L 3/4 Backfit Install (Build 2)(Ship 1)								4Q

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**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 18 of 20)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>FEBRUARY 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 1916C Surface ASW Systems Improvements Congressional Plus-Ups : VARIOUS
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**CONGRESSIONAL PLUS-UPS:**

	FY 06			
1916C				
Surface Ship ASW R&D Improvements	4.000			

FY06: (Congressional Add) Continue the development of Surface Ship ASW improvements through use of portable, modular software to ease transition to new families of COTS hardware and low cost incorporation of improved processing algorithms. Address critical surface sonar capability shortfalls such as: active processing in littoral areas, torpedo defense, and automation technology for reduced manning by using the Advanced Processing Builds (APB) model that has rapidly delivered transformational modernization through exploitation of application reuse and low cost incorporation of improved processing algorithms.

	FY 06			
1916C				
Common Surface and Air Undersea Warfare	2.100			

FY06: (Congressional Add) Continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single "Best of Breed" Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities. This capability will be demonstrated using network based, mainstream technology, to evaluate increased USW situational awareness, accuracy, and reduced USW prosecution time through automated fusion and connectivity of shipboard USW and airborne sensor data contacts.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-07</b>	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME 9795N Surf Ship Sonar Integrated Data Fusion Congressional Plus-Ups : VARIOUS

**CONGRESSIONAL PLUS-UPS:**

	FY 06			
9795N				
Surface Ship Sonar Integrated Data Fusion	2.200			

FY06: (Congressional Add) Develop, test and evaluate an integrated sonar data fusion and display capability for Surface Ship USW Combat Systems.



EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>				R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	<b>21.237</b>	<b>21.724</b>	<b>24.988</b>	<b>25.915</b>	<b>26.425</b>	<b>27.279</b>	<b>28.053</b>
MK48 ADCAP/0366	<b>21.237</b>	<b>21.724</b>	<b>24.988</b>	<b>25.915</b>	<b>26.425</b>	<b>27.279</b>	<b>28.053</b>

Note: \$2.1M Congressional Plus-up for MK48 ADCAP Torpedo APB Improvements in (PE 0603561N/9039) for FY05.

A. (U) Mission Description and Budget Item Justification: MK48 ADCAP 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 ACAT III development to address CNO defined capability-based requirements and mission needs. This PE (0205632N/0366) is tied to development programs that leverage a Congressionally funded Torpedo APB program (in PE 0603561N/9039), a joint US/Australia, Armaments Cooperative Project to develop MK48 ADCAP, and Future Naval Capability technologies being developed by 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 R&D program for FY01 and out shifted from being primarily concentrated on Software Block Upgrade efforts towards coordinated hardware upgrades, rapid Commercial-Off-the-Shelf insertion, and Torpedo APBs to rapidly upgrade the ADCAP to counter evolving threats and maintain robust performance. The Common Broadband Advanced Sonar System (CBASS) program will develop and field a broadband sonar capable of identifying CMs and discriminating them from the target. CBASS will develop 22 test articles (2 test vehicles and 20 Engineering Development Models (EDMs)). CBASS met Milestone II requirements on 6 March 1998 and received MDA approval to proceed into EMD. IOC is scheduled for FY06. The Commonwealth of Australia, Royal Australian Navy (RAN) is participating to jointly develop CBASS torpedo and signed an Armaments Cooperative Project Agreement Mar 2003. The intent of the CBASS program is to achieve improvements in shallow water torpedo performance.

(U) The MK 48 ADCAP (Advanced Capability) torpedo R&D program focuses on two specific areas near term: Torpedo Advanced Processor Builds (APBs) and broadband sonar capability. The Chief of Naval Operations 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 Future Naval Capability (FNC) technologies being developed by the Office of Naval Research (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.

(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 Future Naval Capability (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.

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N
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**B. Accomplishments/Planned Program**

<b>TORPEDO APB</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	9.958	12.678	14.750

**FY05** - Torpedo Advanced Processor Build efforts in order to address fleet identified performance priorities for MK48 ADCAP MODS. Funding provided for rapid delivery of incremental software improvements to fielded MODS torpedoes and included budgeting previously allocated from Congressional plus-ups. Efforts included software coding, modeling and simulation of software releases (including development and validation of models) and engineering tests in water for evaluation of proposed releases. Torpedo APB software build release planned in FY05 (Spiral 1 Phase 1).  
**FY06** - Torpedo Advanced Processor Build efforts to address fleet identified performance priorities for the Mk48 ADCAP torpedo. FY06 to include developmental and operational testing for Spiral 1.  
**FY07** - Spiral 1 Phase 2 torpedo APB software build planned for release in FY07 which provides full Spiral 1 capability and torpedo effectiveness gain. Efforts to focus on APB Spiral 2/3 development in preparation for software release in FY08. Tasking to include software coding, modeling and simulation and engineering test in water. Steps in the APB process include 1) evaluation, 2) assessment, 3) implementation, and 4) system assessment.

<b>CBASS</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	9.286	2.390	0.000

**FY05-** Conducted in-water developmental testing with CBASS EDM vehicles. Efforts involved torpedo preparations, model validation, post-run analysis, and range preparations including cooperative test series scheduled in Australia as part of joint US/Australia Armaments Cooperative Project.  
**FY06-** Complete In-water developmental, technical, and operational testing in preparation for CBASS Full Rate Production Decision and IOC planned for 3Q FY06.

R-1 SHOPPING LIST - Item No. 182

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 2 of 9)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

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

<b>OPERATIONAL TEST SUPPORT</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.093	0.500	0.500

- FY05-** Provided for accreditation requirements and developmental test support for shallow water environments required prior to OPEVAL.  
**FY06-** Conduct analysis and prepare final report for test and evaluation (OPEVAL) efforts prior to CBASS Torpedo release.  
**FY07-** Provide for accreditation requirements and conduct analysis relating to APB software release planned in FY08.

<b>TECHNOLOGY INSERTIONS</b>	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.900	6.156	9.738

- FY05 -** Defined a series of spiral development packages of several hardware improvements building on proven torpedo hardware platforms. Started development efforts (including planning and systems engineering) that will implement these new technologies into the latest MK48 ADCAP torpedoes. Awarding contracts to industry to develop technologies.  
**FY06-** Transition torpedo technologies selected under Torpedo Technology Insertion program. Analysis of available technology solutions against desired performance objectives, and continue integration of first technology insertion package. Conduct System Design Review for Spiral 1.  
**FY07-** Finalization of Spiral 1 development efforts prior to developmental and operational testing in FY08. Efforts to include a Preliminary Design Review.

R-1 SHOPPING LIST - Item No. 182

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 3 of 9)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget: (FY2006 President's Controls)	21.367	21.619	25.761
Current BES/President's Budget: (FY 07 President's Controls)	21.237	21.724	24.988
Total Adjustments	-0.130	0.105	-0.773
Summary of Adjustments			
Programmatic changes	0	0.429	-0.773
SBIR	-0.114	0	0
Rescissions	0	-0.324	0
DOE Transfer (Issue 74501)	-0.016	0	0
Subtotal	-0.130	0.105	-0.773

Schedule: Not Applicable.

Technical: Not Applicable.

R-1 SHOPPING LIST - Item No. 182

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 4 of 9)

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE:		
						<b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>				MK48 ADCAP/0205632N				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>								
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete CONT.
MK48 ADCAP MODS (WPN/PE0204284N/BA-3/P-1 Item 322500)	60.596	57.501	61.528	64.431	66.045	67.688	69.269	
Sub. Tactical Warfare Systems (RDT&E/PE0603562N/BA-4/1739)	5.891	7.017	10.357	9.909	10.219	10.400	10.650	
Advanced Submarine Systems * (RDT&E/PE0603561N/BA4/9039)	89.790	149.531	140.432	158.361	164.053	164.759	144.597	
* Congressional Plus-up of \$2.032M in FY05 for MK48 ADCAP/APB upgrades.								
<b>E. ACQUISITION STRATEGY:</b>								
<p>CBASS EMD contract was competitively awarded among qualified ADCAP producers. Sole Source Production Contract awarded in FY 2004 for MK48 ADCAP MODS, Lightweight MK54 and CBASS kits, including Royal Australian Navy (RAN) units.</p> <p>LRIP Contract for CBASS units awarded in FY 2004 and to include RAN units.</p> <p>Tech Insertion Spiral 1 EDM contract(s) to be awarded among qualified producers in FY08.</p>								
<b>F. MAJOR PERFORMERS:</b>								
<p>NUWC Division Newport, Newport, RI - System Integrator and Software Developer. Continued integration and development testing of CBASS hardware and software components and test equipment.</p> <p>Raytheon awarded Sole Source Production Contract for MK48 ADCAP MODS, Lightweight MK54 and CBASS kits, including RAN units.</p> <p>Northrop Grumman, Annapolis, MD - Fabricated and delivered CBASS EDM hardware in fulfillment of contract that was completed in August 2005 (CBASS kits consisting of preamps and BSARs).</p>								

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT	PROJECT NAME AND NUMBER								
<b>RDT&amp;E, N/BA-7</b>			<b>MK48 ADCAP/0205632N</b>	<b>MK48 ADCAP/0366</b>								
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NUWC NPT	CONT.	0.660	10/04	3.056	10/05	4.388	10/06	CONT.	CONT.	N/A
Primary Hardware Development	Various	Various - TBD	0.000	0.000		2.750	03/06	5.000	12/06	CONT.	CONT.	N/A
Primary Hardware Development	C,CPIF	Northrop Grumman	32.896	0.200	11/04	0.000		0.000		0.000	33.096	33.096
Systems Engineering	WR	NUWC NPT	CONT.	4.339	10/04	7.367	10/05	6.666	10/06	CONT.	CONT.	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			CONT.	5.199		13.173		16.054		CONT.	CONT.	N/A

Remarks: Total Cost and Target Value of Northrop Grumman contract represents contract Latest Revised Estimate based on completed negotiations and CBASS hardware technical requirements. Various - TBD; Primary hardware development activity to be selected after evaluation of technologies from various vendors.

Development Support Equipment												
Software Development	WR	NUWC NPT	CONT.	4.292	10/04	2.970	10/05	3.732	10/06	CONT.	CONT.	N/A
Software Development	Various	Various	0.000	1.300	12/04	1.350	03/06	0.727	12/06	CONT.	CONT.	N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			CONT.	5.592		4.320		4.459		CONT.	CONT.	N/A

Remarks:

R-1 SHOPPING LIST - Item No. 182

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

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
<b>RDTE&amp;E, N/BA-7</b>			<b>MK48 ADCAP/0205632N</b>		<b>MK48 ADCAP/0366</b>							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	NUWC NPT	CONT.	5.515	10/04	1.395	10/05	1.299	10/06	CONT.	CONT.	N/A
Operational Test & Evaluation	WR	Operational Test Support	CONT.	1.093	11/04	0.500	11/05	0.500	11/06	CONT.	CONT.	N/A
Modeling & Simulation	WR	NUWC NPT	CONT.	2.712	10/04	0.925	10/05	1.244	10/06	CONT.	CONT.	N/A
Modeling & Simulation	C,CPFF	ARL / PSU	0.000	0.342	12/04	0.650	12/05	0.650	12/06	CONT.	CONT.	N/A
Subtotal T&E			CONT.	9.662		3.470		3.693		CONT.	CONT.	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Anteon	CONT.	0.451	MISC.	0.451	MISC.	0.451	MISC.	CONT.	CONT.	N/A
Travel			CONT.	0.090		0.045		0.045		CONT.	CONT.	N/A
Overhead			CONT.	0.243		0.265		0.286		CONT.	CONT.	N/A
Subtotal Management			CONT.	0.784		0.761		0.782		CONT.	CONT.	
Remarks:												
Total Cost			CONT.	21.237		21.724		24.988		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 182

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 7 of 9)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-4, Schedule Profile DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE  
**RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7** MK48 ADCAP/0205632N

<b>PROGRAM EFFORTS</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Torpedo Advanced Processor Builds	ADCAP Performance Upgrades based on Fleet Priorities (DT/OT testing scheduled prior to each software delivery)						
	△		△	△		△	▶
CBASS Development	Engineering Tests in Support of CBASS Algorithm and Software Development						
	DT/OT ▼	OPEVAL ▲					
		IOC ▲					
		FRP ▲					
Torpedo Technology Insertion	Advanced Tech Studies						
		Tech Develop. Contract Awards		Tech Insertion Package #1		Tech Insertion Package #2	
				DT/OT △	▼	△	DT/OT △
							▼
			△	△		△	▶
		SDR	PDR	DRR		SDR	PDR
						DRR	

R-1 SHOPPING LIST - Item No. 182

**Exhibit R-4, RDT&E Budget Item Justification**  
 (Exhibit R-4, page 8 of 9)

**UNCLASSIFIED**



CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>					PROJECT NUMBER AND NAME <b>MK48 ADCAP/0366</b>		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
<b>Torpedo Advanced Processor Build</b>							
Developmental/Operational Testing	1Q-4Q	1Q-4Q	3Q-4Q	1Q	2Q-4Q		
Software Delivery	4Q		1Q	2Q		1Q	
<b>CBASS Development</b>							
Engineering Tests	1Q-2Q						
Developmental Testing	1Q-4Q						
Developmental/Operational Testing		1Q					
Operational Evaluation (OPEVAL)		2Q					
Full Rate Production Decision		3Q					
IOC		3Q					
<b>Torpedo Technology Insertion</b>							
Study Phase/System Development	1Q-4Q	1Q-3Q				1Q	
System Design Review (SDR)		4Q				1Q-2Q	
Preliminary Design Review (PDR)			2Q			3Q	
Design Readiness Review (DRR)				1Q		3Q-4Q	
Developmental/Operational Testing				2Q-4Q	1Q		1Q-3Q
Technology Insertion Package #1					2Q		
Technology Insertion Package #2							4Q

R-1 SHOPPING LIST - Item No. 182

**Exhibit R-4a, RDT&E Budget Item Justification**

**UNCLASSIFIED**

(Exhibit R-4a, page 9 of 9)

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY	BA 7					R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0205633N, AVIATION IMPROVEMENTS	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	75.417	94.928	71.612	66.503	67.900	67.889	69.446
0601 COMMON GROUND EQUIPMENT	2.547	2.962	3.051	3.158	3.226	3.301	3.378
0852 CONSOLIDATION AUTOM SPT SYS	5.226	6.674	6.880	7.134	7.315	7.367	7.480
1041 ACFT EQ REL/MAINT PROG	2.509	2.909	2.997	2.278	2.757	2.789	2.844
1355 A/C ENG COMP IMP (CIP)	50.431	67.778	58.684	53.933	54.602	54.432	55.744
9109 A/C AGE EXPLORATION	2.887						
9426 AUTOMATED WIRE ANALYSIS	4.149						
9427 DIGITAL INTEGRATED COCKPIT DISPLAY *	.968						
9628 CORROSION INHIBITING COATINGS	1.361						
9629 NANO-COMPOSITE HARD-COAT FOR AIRCRAFT	2.227						
9630 CENTRE FOR DEFENSE SUSTAINMENT	.977						
9631 DEV. OF NEXT GENERATION TECH. FOR THE	2.136						
9999 CONGRESSIONAL ADDS		14.605					

(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 9109 - Aircraft 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 to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiated in FY02 to add enhanced functionality to include automatic identification of reliability degradation items and automatic tracking of actuals against model generated predictions.

Project 9426 - Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Aviation applications.

Project 9427 - The TH-57 Helicopter is the Navy's only primary helicopter pilot training platform, and is expected to remain in that capacity until 2025. All Navy fleet helicopters will have digital cockpits by 2012. To remain viable as an effective training platform, which meets the training requirements of an all digital helicopter fleet, the TH-57 cockpit can best utilize a digital design to effect greater aircraft training utilization. Research and Development funds will be utilized to produce a product that keeps pace with the rapidly changing fleet helicopter pilot training requirements and provides increased hard landing/crash and exceedance warning system protection to aircrews. The following areas will be explored: Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.

Project 9428 - The NAVAIR Technology Commercialization Initiative is an effort to transition commercial technology for Naval Aviation Applications.

Project 9628 - The Corrosion Inhibiting Coatings initiative is an effort to develop and test a conductive polymer coating for increased corrosion resistance.

Project 9629 - The Nano-Composite Hard-Coat for Aircraft Canopies initiative is an effort to develop and test improved canopy coating materials.

Project 9630 - The Center for Defense Sustainment Technology initiative is an effort to support the Joint Council on Aging Aircraft (JCAA) National Strategy efforts in the Cost of Aging, obsolescence management and rotorcraft dynamic component technologies.

Project 9631 - Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair will lead to the development of a next generation Common Video Borescope Set to support the fleet maintenance requirement to inspect internal components of aircraft engines and airframes for defects. The goals of this effort are to address deficiencies in the current inspection equipment by improving survivability, reducing proliferation/inventory, reducing maintenance costs, improving training and reliability, providing an upgradeable design, and maximizing commonality of inspection between the Organizational and Intermediate levels of maintenance.

Project 9999 Congressional Adds.

\*The Department of the Navy has determined that funding is not required.

Totals may not add due to rounding.

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N /		0205633N, AVIATION IMPROVEMENTS					0601, COMMON GROUND EQUIPMENT	
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
W0601 COMMON GROUND EQUIPMENT	2.547	2.962	3.051	3.158	3.226	3.301	3.378	
RDT&E Articles Qty	1	1	1					

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 is briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

The items procured with this budget are new technology items that are required to meet fleet aircraft requirements in both testing and loading of aircraft systems.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 0601, COMMON GROUND EQUIPMENT
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

TETI	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		1.200	1.651	
RDT&E Articles Qty				

Turboprop Engine Test Instrumentation (TETI) - 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 Jet Engine Test Initiative (JETI) 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.

NGMH	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.453	1.762	1.400	
RDT&E Articles Qty	1	1	1	

Next Generation Munitions Handler (NGMH) - 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 llonator wheels will provide the mobility for the vehicle. Self-diagnostics for maintenance analysis will be included for the design.

SETI	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.094			
RDT&E Articles Qty				

Shaft Engine Test Instrumentation (SETI) - Program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turbo shaft engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of SETI and Test Program Sets (TPS), utilizing the existing Jet Engine Test Initiative (JETI) technology, and integrate this capability into existing land based (A/E372T-24) and (A/F37T-16) engine test systems. This enhanced capability will allow for full performance engine testing of the T58, T64, and T700 Turbo shaft engines. An ECP will be developed to upgrade the existing engine test systems.

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /

BA 7

PROGRAM ELEMENT NUMBER AND NAME  
0205633N, AVIATION IMPROVEMENTS

PROJECT NUMBER AND NAME  
0601, COMMON GROUND EQUIPMENT

## C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.626	3.007	2.812
Current President's Budget:	2.547	2.962	3.051
Total Adjustments	-0.079	-0.045	0.239

## Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.009	-0.031	
Congressional Increases	0.001		
Economic Assumptions		-0.014	0.016
Miscellaneous Adjustments	-0.071		0.223
Subtotal	-0.079	-0.045	0.239

## Schedule:

Acquisition, testing and production milestones adjusted for TETI program. The milestones were shifted to the right by approximately two quarters. After the early planning meetings for the TETI program, the original schedule was determined to unrealistic. The schedule change will allow the program to be executed much more effectively, including early obligation and expenditure of the program RDT&E funds. Milestone A was mistakenly included on the FY06/07 President's budget, and has been eliminated. As TETI is a spinoff of two other engine test system programs (JETI and SETI), there is no need to go through a Milestone A.

Due to the anticipated complexity of the 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 LRIP units before Full Rate Production (FRP) is initiated. This additional schedule time lowers risk to the program and postpones the FRP by one quarter.

## Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 0601, COMMON GROUND EQUIPMENT
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN 070500 Ground Support Equipment Related RDT&E: Not Applicable	221.065	191.086	176.362	172.941	162.476	165.849	169.639	Continuing	Continuing

E. ACQUISITION STRATEGY:

This is a non-ACAT program. Field activities propose tentative RDT&E 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.

Exhibit R-3 Cost Analysis (page 1)										DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0205633N, AVIATION IMPROVEMENTS				0601, COMMON GROUND EQUIPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hdw Development-NGMH	C-FFP	FOSTER-MILLER INC, WALTHAM, MA		1.712	3/31/2005	1.265	3/31/2006				2.977	2.977
Primary Hdw Development-NGMH	VARIOUS	TBD	17.112					.913	3/31/2007	Continuing	Continuing	
Primary Hdw Development-SETI	C-FFP	RACAL INSTRUMENTS INC, IRVINE, CA		.094	5/5/2005						.094	.094
Primary Hdw Development-TETI	VARIOUS	VARIOUS				.694	VARIOUS	.815	3/31/2007	Continuing	Continuing	
Systems Eng-NGMH	VARIOUS	VARIOUS	.466			.282	VARIOUS	.327	3/31/2007	Continuing	Continuing	
Systems Eng-TETI	VARIOUS	NAWCAD, LAKEHURST, NJ				.282	3/31/2006	.427	3/30/2007	Continuing	Continuing	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>17.578</b>	<b>1.806</b>		<b>2.523</b>		<b>2.482</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>SUPPORT</b>												
Develop Support Equip-NGMH	VARIOUS	VARIOUS	6.151	.741	VARIOUS	.015	VARIOUS	.015	VARIOUS	Continuing	Continuing	
Integrated Logistics Sup-NGMH	VARIOUS	VARIOUS	.060		12/31/2004	.030	12/31/2005	.030	12/31/2006	Continuing	Continuing	
Integrated Logistics Sup-TETI	VARIOUS	VARIOUS			VARIOUS	.030	VARIOUS	.030	VARIOUS	Continuing	Continuing	
Software Development-TETI	VARIOUS	NAWCAD, LAKEHURST, NJ				.015	12/30/2005	.015	12/29/2006	Continuing	Continuing	
Studies & Analyses-NGMH	VARIOUS	VARIOUS	.030		VARIOUS	.015	VARIOUS	.015	VARIOUS	Continuing	Continuing	
Studies & Analysis -TETI	VARIOUS	NAWCAD, LAKEHURST, NJ				.014	12/31/2005	.015	12/29/2006	Continuing	Continuing	
<b>SUBTOTAL SUPPORT</b>			<b>6.241</b>	<b>.741</b>		<b>.119</b>		<b>.120</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval-NGMH	VARIOUS	VARIOUS	.060			.155	VARIOUS	.100	VARIOUS	Continuing	Continuing	
Dev Test & Eval-TETI	TBD	TBD						.184	12/31/2006	Continuing	Continuing	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			<b>.060</b>			<b>.155</b>		<b>.284</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>MANAGEMENT</b>												
Contractor Eng Sup-TETI	VARIOUS	VARIOUS	.025			.025	VARIOUS	.025	VARIOUS	Continuing	Continuing	
Government Eng Sup-TETI	VARIOUS	VARIOUS	.060			.050	VARIOUS	.050	VARIOUS	Continuing	Continuing	
Program Mgmt Sup-TETI	TBD	TBD	.075			.075	12/15/2005	.075	12/15/2006	Continuing	Continuing	
Travel-TETI	TO	NAVAIRHQ, PAX RIVER, MD				.015	VARIOUS	.015	VARIOUS	Continuing	Continuing	
<b>SUBTOTAL MANAGEMENT</b>			<b>.160</b>			<b>.165</b>		<b>.165</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>Total Cost</b>			<b>24.039</b>	<b>2.547</b>		<b>2.962</b>		<b>3.051</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>												
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
<b>RDT&amp;E, N /</b>					0205633N Aviation Improvements										0601 Common Ground Equipment																	
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b> TETI								MS B △												MS C △	FRP DECISION △											
Prototype Phase									Prototype Phase																							
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b> TETI Development Test Operational Test													Developmental Testing								Operational Testing											
<b>Production Milestones</b> TETI																																
FRP FY 10																																



CLASSIFICATION:																															
EXHIBIT R4, Schedule Profile																								DATE:							
APPROPRIATION/BUDGET ACTIVITY																								PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N /																								0205633N Aviation Improvements				0601 Common Ground Equipment			
Fiscal Year	2005				2006				2007				2008				2009				2010				2011						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Acquisition Milestones</b> NGMH								MS B △																							
Prototype Phase	Prototype Phase																														
Radar System Development																															
EDM Radar Delivery																															
Software 1XXSW Delivery 2XXSW Delivery																															
<b>Test &amp; Evaluation Milestones</b> NGMH																															
Development Test	Developmental Testing																														
Operational Test					Operational Testing																										
<b>Production Milestones</b> NGMH																															
FRP FY 10																															
Deliveries NGMH																															

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROJECT NUMBER AND NAME

**RDT&BA-7**

0601 Common Ground Equipment

Schedule Profile - TETI	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase			2Q-4Q	1Q-4Q	1Q-3Q		
Milestone B		4Q					
Developmental Testing			3Q-4Q	1Q-3Q			
Milestone C (MS C)					3Q		
Operational Testing				3Q-4Q	1Q-3Q		
Full Rate Production Decision						1Q	
Full Rate Production Start						1Q	

<b>CLASSIFICATION:</b>							
Exhibit R-4a, Schedule Detail					DATE:		
					<b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-7</b>				0601 Common Ground Equipment			
Schedule Profile - NGMH	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase	1Q-4Q	1Q-4Q					
Milestone B		4Q					
Developmental Testing	3Q-4Q	1Q-4Q	1Q-2Q				
Milestone C (MS C)				4Q			
Operational Testing			1Q-4Q	1Q-4Q			
Start Low-Rate Initial Production I (LRIP I)				4Q			
Low-Rate Initial Production I Delivery					4Q		
Full Rate Production Decision						2Q	
Full Rate Production Start						2Q	
R-1 SHOPPING LIST - Item No. 176							

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0205633N, AVIATION IMPROVEMENTS</b>					PROJECT NUMBER AND NAME <b>0852, CONSOLIDATED AUTOM SPT SYS</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
W0852 CONSOLIDATED AUTOM SPT SYS	5.226	6.674	6.880	7.134	7.315	7.367	7.480		
RDT&E Articles Qty	1	1	1						

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 systems.

Technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared (ATFLIR) electro-optics capability, multi-analog test capability to enable functional testing, and CASS station modernization elements.

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

CASS Modernization Development	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.368	2.364	4.458	
RDT&E Articles Qty				

CASS Modernization Development  
 Develops and integrates the technologies that will comprise the Modernization Program for the early lots of 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 Technology Demonstration (ACTD).

Electro-Optic Capability	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.830	2.190	.320	
RDT&E Articles Qty				

Electro-Optic Capability  
 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 Station Upgrades	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.028	2.120	2.102	
RDT&E Articles Qty				

CASS Station Upgrades  
 Provides technologies for upgrading CASS station test capability to test emerging weapon system requirements. Includes development of new test capability and extending existing test range accuracies in the time and frequency domain. Specifically to support low-frequency analog/digital, electro-optic, and radio frequency (RF) emerging weapon systems.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS

## APPROPRIATION/BUDGET ACTIVITY

RDT&amp;E, N /

BA 7

## PROGRAM ELEMENT NUMBER AND NAME

0205633N, AVIATION IMPROVEMENTS

## PROJECT NUMBER AND NAME

0852, CONSOLIDATED AUTOM SPT SYS

## C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	5.406	6.776	6.356
Current President's Budget:	5.226	6.674	6.880
Total Adjustments	-0.180	-0.102	0.524

## Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.103	-0.071	
Congressional Increases	0.001		
Economic Assumptions		-0.031	0.036
Miscellaneous Adjustments	-0.078		0.488
Subtotal	-0.180	-0.102	0.524

Schedule: The schedule was amended to add eCASS which is the name of the new modernized CASS stations. The point of ARGCS is to demonstrate the test technologies that will be used in eCASS.

Technical:

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 0852, CONSOLIDATED AUTOM SPT SYS
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D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN 070500 CASS Related RDT&E: Not Applicable	76.617	75.059	79.720	82.250	83.935	85.675	97.630	Continuing	Continuing

E. 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.



Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
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 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hdw Dev CASS EO	VARIOUS	VARIOUS	2.400	.830	VARIOUS	2.190	VARIOUS	.320	VARIOUS	Continuing	Continuing	
Primary Hdw Dev CASS Mod	C-CPFF	NORTHROP GRUMMAN SYSTEMS CORP, SYKESVILLE, MD		3.112	11/4/2004						3.112	3.112
Primary Hdw Dev CASS Mod	C-CPFF	BOEING, ST LOUIS, MO				1.314	11/4/2005	3.096	11/4/2006	Continuing	Continuing	
Primary Hdw Development CASS Upgra	VARIOUS	VARIOUS	23.111			1.522	11/1/2005	1.283	11/1/2006	Continuing	Continuing	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			<b>25.511</b>	<b>3.942</b>		<b>5.026</b>		<b>4.699</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>SUPPORT</b>												
Develop Support Equip CASS Mod	VARIOUS	NAWCAD, LAKEHURST NJ		.571	11/2/2004	1.050	11/4/2005	1.052	11/4/2006	Continuing	Continuing	
Develop Support Equip CASS Upgrades	VARIOUS	VARIOUS	.250	.026	VARIOUS	.248	VARIOUS	.469	VARIOUS	Continuing	Continuing	
ETS (NON-FFRDC) CASS Mod	VARIOUS	VARIOUS		.389	VARIOUS			.310	VARIOUS	Continuing	Continuing	
<b>SUBTOTAL SUPPORT</b>			<b>.250</b>	<b>.986</b>		<b>1.298</b>		<b>1.831</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
<b>SUBTOTAL TEST &amp; EVALUATION</b>												
Remarks:												
<b>MANAGEMENT</b>												
Travel CASS Mod	TO	NAVAIRHQ, PATUXENT RIVER MD	.974	.279	VARIOUS					Continuing	Continuing	
Travel CASS Mod (NATEC)	TO	NAVAL TECHNICAL REPRESENTATIVE, HURST, TX		.017	VARIOUS					Continuing	Continuing	
Travel CASS Upgrades (HQ)	TO	NAVAIRHQ, PATUXENT RIVER MD		.002	VARIOUS	.350	VARIOUS	.350	VARIOUS	Continuing	Continuing	
<b>SUBTOTAL MANAGEMENT</b>			<b>.974</b>	<b>.298</b>		<b>.350</b>		<b>.350</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												
<b>Total Cost</b>			<b>26.735</b>	<b>5.226</b>		<b>6.674</b>		<b>6.880</b>		<b>Continuing</b>	<b>Continuing</b>	
Remarks:												

**CLASSIFICATION:**

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

APPROPRIATION/BUDGET ACTIVITY: **RDTE&E, N /** PROGRAM ELEMENT NUMBER AND NAME: 0205633N Aviation Improvements PROJECT NUMBER AND NAME: 0852 Consolidated Automated Support System

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
ARGCS																												
Contract Award																												
System Development	System Development																											
Testing									Testing																			
eCASS																												
Contract Award																												
System Development													System Development															
Testing																									Testing			

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-7</b>	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System		
Schedule Profile - ARGCS	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award							
System Development	1Q-4Q	1Q-4Q	1Q				
Testing			1Q-4Q	1Q-4Q			
Schedule Profile - eCASS							
Contract Award				1Q			
System Development				1Q-4Q	1Q-4Q	1Q-2Q	
Testing						2Q-4Q	1Q-4Q

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME						PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /</b>	<b>BA 7</b>						<b>0205633N, AVIATION IMPROVEMENTS</b>
							1041, ACFT EQ REL/MAINT PROG
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
1041 ACFT EQ REL/MAINT PROG	2.509	2.909	2.997	2.278	2.757	2.789	2.844
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		1.290	1.390
RDT&E Articles Qty			

AIR VEHICLE (B):

Qualify new commercially available state-of-the-art fire and thermal barrier materials. Qualification and implementation of advanced non-chrome primers with adequate corrosion protection properties. Perform field-testing and validation of the Office of Naval Research developed topcoat with enhanced durability so that it can last 8 years between repainting for approval for all Naval Aviation. Apply the latest sensor technology to develop an "after market" add-on fire bottle-monitoring device that affords immediate visible indication of bottle condition (go / no go). Incorporation of improved corrosion protection schemes while maintaining electrical and EMI performance will dramatically extend seal and surface life, reduce EMI degradation, and reduce corrosion maintenance cost. Field test and qualify for usage for all Naval Aviation an Office of Naval Research developed long-life CPC that can be effectively employed on a 308-day maintenance cycle. 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.

EXHIBIT R-2a, RDT&E Project Justification				DATE:	February 2006
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7</b>		PROJECT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	
				1041, ACFT EQ REL/MAINT PROG	
	FY 2005	FY 2006	FY 2007		
Accomplishments / Effort / Sub-total Cost	2.509	1.619	1.607		
RDT&E Articles Qty					
<p><b>AVIONICS AND WIRING (A):</b>          Validate and transition Office of Naval Research (ONR) funded Smart Wire technology by conducting full aircraft flight test. Verify and validate a replacement Advanced Data Collection System that remotely downloads memory unit information for the AN/ASH-37(v) Structural Data Recording Set (SDRS). Test and perform the required changes to validate the ASW-27 as a replacement to the ASW-25. Perform the required testing to validate that the miniature version Arc Fault Circuit Breaker designed for fighter/attack aircraft and helicopters will work through system level Electro Magnetic Compatibility (EMC) and lighting events. Advance the Processor Maintainability efforts beyond the initial prototype stage to validate that accuracy of the developed common processes to ensure that reliability and maintainability issues caused by obsolescence components are identified and solutions options developed before the issues become critical. Replace ASQ-208 to reduce maintenance cost and increase system readiness. Test and perform the required changes to validate a replacement APN-202 system. 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.</p>					

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 1041, ACFT EQ REL/MAINT PROG
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.057	2.953	3.013
Current BES / President's Budget:	2.509	2.909	2.997
Total Adjustments	0.452	-0.044	-0.016

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.014	-0.031	
Congressional Increases	0.001		
Economic Assumptions		-0.013	0.015
Miscellaneous Adjustments	0.465		-0.031
Subtotal	0.452	-0.044	-0.016

Schedule: N/A

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0205633N, Aircraft Exploration Model Development, 9109									
0205633N, Automated Wire Analysis, 9426									
0205633N, Corrosion Inhibiting Coatings, 9628									
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629									

E. ACQUISITION STRATEGY: N/A

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N /		0205633N, AVIATION IMPROVEMENTS			1041, ACFT EQ REL/MAINT PROG							
BA 7												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD				1.165	3/1/2006	1.388	11/1/2006	4.916	7.469	
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD				.989	3/1/2006	1.229	11/1/2006	3.037	5.255	
Systems Engineering	SSFFP	RAYTHEON				.300	3/1/2006	.250	1/1/2007	2.105	2.655	2.655
Systems Engineering	SSFFP	EAGAN MCALLISTER ASSOC INC				.200	3/1/2006				.200	.200
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>						<b>2.654</b>		<b>2.867</b>		<b>10.058</b>	<b>15.579</b>	
Remarks: Systems Engineering Accomplishment A - Avionics & Wiring, Systems Engineering Accomplishment B - Air Vehicle												
<b>SUPPORT</b>												
Studies & Analyses	WX	NADEP, SAN DIEGO CA		.068	10/31/2004	.125	3/1/2006				.193	
Studies & Analyses	WX	NAWCAD, PATUXENT RIVER MD	10.754	1.417	10/31/2004						12.171	
<b>SUBTOTAL SUPPORT</b>			<b>10.754</b>	<b>1.485</b>		<b>.125</b>					<b>12.364</b>	
Remarks: Studies and Analyses costs have been realigned to Systems Engineering												
<b>TEST &amp; EVALUATION</b>												
<b>SUBTOTAL TEST &amp; EVALUATION</b>												
Remarks:												
<b>MANAGEMENT</b>												
Contractor Eng Sup - Direct Cite	SSFFP	RAYTHEON, IN	.900	.839	VARIOUS	.120	VARIOUS	.120	VARIOUS	.570	2.549	2.549
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD	.120	.175	10/31/2004						.295	
Travel	WX	NAWCAD, PATUXENT RIVER MD	.020	.010	10/31/2004	.010	11/30/2005	.010	11/30/2006	.040	.090	
<b>SUBTOTAL MANAGEMENT</b>			<b>1.040</b>	<b>1.024</b>		<b>.130</b>		<b>.130</b>		<b>.610</b>	<b>2.934</b>	
Remarks: Program management support costs are no longer required, as PM has been converted to EOB billet.												
<b>Total Cost</b>			<b>11.794</b>	<b>2.509</b>		<b>2.909</b>		<b>2.997</b>		<b>10.668</b>	<b>30.877</b>	
Remarks:												







EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N /		0205633N, AVIATION IMPROVEMENTS					1355, A/C ENG COMP IMP (CIP)	
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
1355 A/C ENG COMP IMP (CIP)	50.431	67.778	58.684	53.933	54.602	54.432	55.744	
RDT&E Articles Qty								
<p>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&amp;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.</p>								

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	7.866	7.953	8.696
RDT&E Articles Qty			

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.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		.100	.100
RDT&E Articles Qty			

F-16 (F100)  
 Review safety ECP's and support incorporation safety requirements.

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		.200	.200
RDT&E Articles Qty			

V-22 (T406)  
 Review safety ECP's and support incorporation safety requirements.

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /

BA 7

0205633N, AVIATION IMPROVEMENTS

1355, A/C ENG COMP IMP (CIP)

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.862	4.003	2.877	
RDT&E Articles Qty				

T-45 (F405)

Address top safety issues reported from fleet. Analysis and redesign components with service revealed deficiencies.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	8.244	14.924	12.398	
RDT&E Articles Qty				

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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.124			
RDT&E Articles Qty				

F-14B/D (F110)

Address obsolescence of electrical components. High pressure turbine redesign efforts. Address extension of component life and the reduction of maintenance hours. Improvements to propulsion system safety through an active life management program for critical rotating components. Efforts to reduce the engine non-recoverable in-flight shutdown Rate and propulsion system related mission abort rate.

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)
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	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	8.584	14.507	9.068	
RDT&E Articles Qty				

H-53/H-46/H-3 (T58/T64)  
 Bleed valve redesign. Efforts on the 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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.936	3.988	3.892	
RDT&E Articles Qty				

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 be limited to: ASMET testing, support of a Fleet Leader Program, Analytical Condition Inseption (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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.399	.523	.615	
RDT&E Articles Qty				

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.

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /

BA 7

0205633N, AVIATION IMPROVEMENTS

1355, A/C ENG COMP IMP (CIP)

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	4.131	4.308	4.205	
RDT&E Articles Qty				

H2/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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.781	.831	.811	
RDT&E Articles Qty				

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.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	5.945	6.258	6.919	
RDT&E Articles Qty				

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 Wittney Associates.

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)

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.618			
RDT&E Articles Qty				

S3 (TF34)

High Pressure Compressor (HPC) life limit implementation. Validation and implementation of High Pressure Turbine (HPT), Low Pressure Turbine (LPT), and Fan critical part life limit changes. Develop Combustion Chamber Frame (CCF) and HPT physics based thermal models. Develop LPT physics based thermal models. Collect engine parameter flight data required to perform updated engine mission analysis. Initiate the development of improved Eddy Current (EC) inspection techniques for small holes and specific features. Analyze and correlate HPC EC inspection requirements to critical part Fracture Mechanics (FM) capabilities. Investigate propulsion and power system obsolescence. Conduct engine component and propulsion and power electrical system reliability/maintainability analysis. Conduct commercial critical part hardware commonality analysis.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.440	.452	.441	
RDT&E Articles Qty				

E2/C2/C130 (Props)

Incorporate improved blade heaters. Develop improved propeller control system.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	7.501	9.731	8.462	
RDT&E Articles Qty				

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-A-427 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.

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /

BA 7

0205633N, AVIATION IMPROVEMENTS

1355, A/C ENG COMP IMP (CIP)

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	51.962	68.810	58.095
Current President's Budget:	50.431	67.778	58.684
Total Adjustments	-1.531	-1.032	0.589

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.870	-0.719	
Congressional Increases			
Economic Assumptions		-0.313	0.642
Miscellaneous Adjustments	-0.661		-0.053
Subtotal	-1.531	-1.032	0.589

Schedule:

Not applicable

Technical:

Not applicable

D. OTHER PROGRAM FUNDING SUMMARY:

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

E. ACQUISITION STRATEGY:

Not applicable



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 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Eng F110 Engine Program	SS-CPAF	GE - OHIO	17.868	.124	12/04						17.992	17.992
Systems Eng F402 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.380	12/04	1.398	12/05	1.365	12/06		4.143	
Systems Eng F402 Engine Program	SS-CPFF	ROLLS ROYCE - UK	33.094	2.556	12/04	2.590	12/05	2.527	12/06		40.767	40.767
Systems Eng T58/T64 Engine Program	SS-CPFF	GE - MASS	37.342	4.769	10/04	8.373	10/05	6.350	12/06		56.834	56.834
Systems Eng T58/T64 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		3.815	10/04	6.134	10/05	2.718	10/06		12.667	
Systems Eng J52 Engine Program	SS-CPFF	P&W - FLORIDA	15.046	4.261	12/04	4.321	12/05	4.777	10/06		28.405	28.405
Systems Eng J52 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.684	12/04	1.938	12/05	2.142	12/06		5.764	
Systems Eng T56 Engine Program	SS-CPFF	ROLLS ROYCE - IN	11.838	5.099	02/05	3.557	02/06	3.091	02/07		23.585	23.585
Systems Eng T56 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		2.402	02/05	6.174	02/06	5.371	02/07		13.947	
Systems Eng F405 Engine Program	SS-CPFF	ROLLS ROYCE - UK	11.260	1.862	12/04	4.003	12/05	2.877	12/06		20.002	20.002
Systems Eng F414 /F404 Eng Prog	SS-CPFF	GE - MASS	11.628	8.244	12/04	14.924	12/05	12.398	12/06		47.194	47.194
Systems Eng T700 Engine Program	SS-CPFF	GE - MASS	8.115	2.411	01/05	2.570	01/06	2.490	01/07		15.586	15.586
Systems Eng T700 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		1.720	01/05	1.738	01/06	1.715	01/07		5.173	
Systems Eng TF34 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD		.338	11/04						.338	
Systems Eng TF34 Engine Program	SS-CPFF	G.E. - OHIO	7.565	.280	11/04						7.845	
Systems Eng T406 Engine Program	WX	NAWCAD, PATUXENT RIVER MD	1.000			.200	12/05	.200	12/06	Continuing	Continuing	
Systems Eng T400 Engine Program	SS-CPFF	P&W - FLORIDA	2.167	.399	12/04	.523	12/05	.615	12/06		3.704	3.704
Systems Eng J85 Engine Program	SS-CPFF	GE - OK	1.045	.781	11/04	.831	11/05	.811	11/06		3.468	3.468
Systems Eng F100 Engine Program	WX	NAWCAD, PATUXENT RIVER MD			11/04	.100	10/05	.100	10/06	Continuing	Continuing	
Systems Eng Props Program	SS-CPFF	HAM SUNSTRAND - CON	7.420	.440	12/04	.452	12/05	.441	12/06		8.753	8.753
Systems Eng Contracts under 1.0M	VARIOUS	VARIOUS	15.782	.004	10/04	.106	10/05	.109	10/06	Continuing	Continuing	
Systems Eng Lab Fld Act-1.0 or more	WX	NAWCAD, PATUXENT RIVER MD	133.474	6.376	10/04	6.304	10/05	7.112	10/06	Continuing	Continuing	
Systems Eng Other In-House Spt	VARIOUS	VARIOUS	17.300	.310	10/04	.374	10/05	.316	10/06	Continuing	Continuing	
GFE-GFP Fuel Improvement	MILSTRIP	DES/DLA	4.706	.663	10/04	.663	10/05	.663	10/06	Continuing	Continuing	
Award Fees	SS-CPFF		1.305								1.305	1.305
SUBTOTAL PRODUCT DEV			337.955	49.918		67.272		58.188		Continuing	Continuing	

Totals may not add due to rounding.

Exhibit R-3 Cost Analysis (page 1)											DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA 7			0205633N, AVIATION IMPROVEMENTS				1355, A/C ENG COMP IMP (CIP)					
Accomplishments / Effort / Sub-total Cost												
SUPPORT												
Develop Support Equip	VARIOUS	VARIOUS	5.483	.281	VARIOUS	.318	VARIOUS	.310	VARIOUS	Continuing	Continuing	
SUBTOTAL SUPPORT			5.483	.281		.318		.310		Continuing	Continuing	
TEST & EVALUATION												
Dev Test & Eval	VARIOUS	VARIOUS	2.907	.053	VARIOUS	.054	VARIOUS	.053	VARIOUS	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			2.907	.053		.054		.053		Continuing	Continuing	
MANAGEMENT												
Program Mgmt Sup	VARIOUS	VARIOUS	1.188	.099	VARIOUS	.054	VARIOUS	.053	VARIOUS	Continuing	Continuing	
Travel - Acquisition Planning	VARIOUS	VARIOUS	.093	.080	VARIOUS	.080	VARIOUS	.080	VARIOUS	Continuing	Continuing	
SUBTOTAL MANAGEMENT			1.281	.179		.134		.133		Continuing	Continuing	
Total Cost			347.626	50.431		67.778		58.684		Continuing	Continuing	
Totals may not add due to rounding.												

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0205633N, AVIATION IMPROVEMENTS</b>					PROJECT NUMBER AND NAME <b>9109, A/C AGE EXPLORATION</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9109 A/C AGE EXPLORATION	2.887							
RDT&E Articles Qty								

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

The Aircraft Age Exploration Model Development is 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 to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiated in FY02 to add enhanced functionality to include automatic identification of reliability degradation items and automatic tracking of actuals against model generated predictions.

**B. ACCOMPLISHMENTS / PLANNED PROGRAM:**

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	2.887		
RDT&E Articles Qty			

**AIRCRAFT AGE EXPLORATION**

Develop enhancements to computer model that integrates existing maintenance data with predictive computations to determine future reliability and maintainability conditions for aircraft and components. Enhancements include automated generation of reliability and maintainability opportunity triggers and also real time tracking of actual results against predicted performance. Develop technical data to include user manuals and other training materials. Conduct user training sessions as required for model validation. Using a combination of historical and current maintenance data perform model verification and validation studies to demonstrate acceptable level of confidence in outputs produced by the model.

February 2006

## APPROPRIATION/BUDGET ACTIVITY

RDT&amp;E, N /

BA 7

## PROGRAM ELEMENT NUMBER AND NAME

0205633N, AVIATION IMPROVEMENTS

## PROJECT NUMBER AND NAME

9109, A/C AGE EXPLORATION

## C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.938	0.000	0.000
Current A2President's Budget:	2.887	0.000	0.000
Total Adjustments	-0.051	0.000	0.000

## Summary of Adjustments

Congressional Reductions

Congressional Rescissions

Congressional Undistributed Reductions

-0.052

Congressional Increases

0.001

Economic Assumptions

Miscellaneous Adjustments

Subtotal	-0.051	0.000	0.000
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Schedule: N/A

Technical: N/A

## D. OTHER PROGRAM FUNDING SUMMARY:

FY 2005

FY 2006

FY 2007

FY 2008

FY 2009

FY 2010

FY 2011

To Complete

Total Cost

0205633N, Aircraft Equipment Reliability &amp; Maintainability Improvement Program (AERMIP), 1041

0205633N, Automated Wire Analysis, 9426

0205633N, NAVAIR Technology Commercialization, 9428

0205633N, Corrosion Inhibiting Coatings, 9628

0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

## E. ACQUISITION STRATEGY: N/A

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0205633N, AVIATION IMPROVEMENTS</b>					PROJECT NUMBER AND NAME <b>9426, AUTOMATED WIRE ANALYSIS</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9426 AUTOMATED WIRE ANALYSIS	4.149							
RDT&E Articles Qty								

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

Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Aviation applications.

**B. ACCOMPLISHMENTS / PLANNED PROGRAM:**

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	4.149		
RDT&E Articles Qty			

**AUTOMATED WIRE ANALYSIS**

Develop the software required to utilize the new technology that incorporates Standing Wave Reflectometry (SWR) that can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. Testing to ensure that the product works in a true fleet environment. Aircraft to be studied are the EA-6B, C-2, S-3, E-6, H-46, and H-53. User training and the development of the materials required for training and after training reference.

APPROPRIATION/BUDGET ACTIVITY <b>RD&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 9426, AUTOMATED WIRE ANALYSIS
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	4.259	0.000	0.000
Current President's Budget:	4.149	0.000	0.000
Total Adjustments	-0.110	0.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.011		
Congressional Increases	0.001		
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.010	0.000	0.000

Schedule: N/A

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041									
0205633N, Age Exploration Model Development, 9109									
0205633N, NAVAIR Technology Commercialization, 9428									
0205633N, Corrosion Inhibiting Coatings, 9628									
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629									

E. ACQUISITION STRATEGY: N/A

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>					PROJECT NUMBER AND NAME <b>9628, CORROSION INHIBITING COATINGS</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9628 CORROSION INHIBITING COATINGS	1.361							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Corrosion Inhibiting Coatings initiative is an effort to develop and test a conductive polymer coating for increased corrosion resistance. This effort will optimize and scale up a coating system that will provide improved corrosion protection for Navy aircraft and be compatible with all environmental regulations.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	1.361		
RDT&E Articles Qty			

CORROSION INHIBITING COATINGS

Develop a commercially available, environmentally and worker friendly primer capable of replacing primers containing hexavalent chromium for protection of aluminum alloys in aerospace applications.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9628, CORROSION INHIBITING COATINGS</b>
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.388	0.000	0.000
Current President's Budget:	1.361	0.000	0.000
Total Adjustments	-0.027	0.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.027		
Congressional Increases			
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-0.027	0.000	0.000

Schedule: N/A

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041									
0205633N, Age Exploration Model Development, 9109									
0205633N, NAVAIR Technology Commercialization, 9428									
0205633N, Automated Wire Analysis, 9426									
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629									

E. ACQUISITION STRATEGY: N/A



APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>		PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0205633N, AVIATION IMPROVEMENTS</b>					PROJECT NUMBER AND NAME <b>9629, NANO-COMPOSITE HARD-COAT FOR AIRCRAFT CANOPIES</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9629 NANO-COMPOSITE HARD-COAT FOR AIRCRAFT	2.227							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Nano-Composite Hard-Coat for Aircraft Canopies initiative is an effort to develop and test improved canopy coating materials. This effort will optimize and scale up a coating system that will provide improved chemical and abrasion protection for aircraft canopies and windscreens.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	2.227		
RDT&E Articles Qty			

NANO-COMPOSITE HARD COAT FOR AIRCRAFT CANOPIES

Develop and transition an optically transparent coating for aircraft wind screens and canopies that is resistant to abrasion and chemical attack.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9629, NANO-COMPOSITE HARD-COAT FOR AIRCRAFT CANOPIES</b>
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.279		
Current President's Budget:	<u>2.227</u>	0.000	0.000
Total Adjustments	-0.052	0.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.053		
Congressional Increases	0.001		
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	<u>-0.052</u>	0.000	0.000

Schedule: N/A

Technical: N/A

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041									
0205633N, Age Exploration Model Development, 9109									
0205633N, NAVAIR Technology Commercialization, 9428									
0205633N, Automated Wire Analysis, 9426									
0205633N, Corrosion Inhibiting Coatings, 9628									

E. ACQUISITION STRATEGY: N/A

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 9630, CENTER FOR DEFENSE SUSTAINMENT TECHNOLOGY
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COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9630 CENTRE FOR DEFENSE SUSTAINMENT	.977						
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This effort will fund a Center for Defense Sustainment Technology that will conduct studies and analysis support for Aging Aircraft issues. It will also conduct aircraft obsolescence requirements analysis, focused research and development, and implementation and deployment of solutions and best practice identification and dissemination. The overall goal of these activities is to safely extend the service life of legacy aircraft that we currently cannot afford to replace, to intelligently invest in solutions that reduce the operating costs of these fleets, and to reduce redundancy of efforts in development and fielding of these solutions. This center is a public-private partnership including not for profit consortia, small business, Government activities, and academia.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.977		
RDT&E Articles Qty			

Center for Defense Sustainment Technology  
 To support the establishment of Center for Defense Sustainment Technology, which will conduct studies and analysis support for Aging Aircraft issues. This center is a public-private partnership including not for profit consortia, small business, Government activities and academia. FY05 funding has specifically been targeted to support the Joint Council on Aging Aircraft (JCAA) National Strategy efforts in the Cost of Aging, obsolescence management and rotorcraft dynamic component technologies.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 9630, CENTER FOR DEFENSE SUSTAINMENT TECHNOLOGY
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.990		
Current President's Budget:	<u>0.977</u>	<u>0.000</u>	<u>0.000</u>
Total Adjustments	-0.013	0.000	0.000

Summary of Adjustments

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

	-0.013		
Subtotal	<u>-0.013</u>	<u>0.000</u>	<u>0.000</u>

Schedule: Not Applicable

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Not Applicable									

E. ACQUISITION STRATEGY: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification								DATE:
APPROPRIATION/BUDGET ACTIVITY								February 2006
RDT&E, N /		BA 7	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME	
			0205633N, AVIATION IMPROVEMENTS				9631, DEV. OF NEXT GEN. TECH. FOR THE INSPECT OF ACRFT ENG	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
W9631 DEV. NEXT GEN. TECH. FOR INSPECT OF A/C	2.136							
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Project 9631 - Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair will lead to the development of a next generation Common Video Borescope Set to support the fleet maintenance requirement to inspect internal components of aircraft engines and airframes for defects. The goals of this effort are to address deficiencies in the current inspection equipment by improving survivability, reducing proliferation/inventory, reducing maintenance costs, improving training and reliability, providing an upgradeable design, and maximizing commonality of inspection between the Organizational and Intermediate levels of maintenance.</p>								

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2006
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME 9631, DEV. OF NEXT GEN. TECH. FOR THE INSPECT OF ACRFT ENG
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.136			
RDT&E Articles Qty				

Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair - Program objective is to develop next generation Common Video Borescope Set to enhance the visual inspection of internal components of Navy/Marine aircraft primary and secondary powerplants and airframes for defects by improving survivability, reducing inventory, reducing maintenance cost, improving training and reliability, and maximizing commonality of the inspection equipment.

## APPROPRIATION/BUDGET ACTIVITY

RDT&amp;E, N /

BA 7

## PROGRAM ELEMENT NUMBER AND NAME

0205633N, AVIATION IMPROVEMENTS

## PROJECT NUMBER AND NAME

9631, DEV. OF NEXT GEN. TECH. FOR THE INSPECT OF ACRFT ENG

## C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	3.270	0.000	0.000
Current President's Budget:	2.136	0.000	0.000
Total Adjustments	-1.134	0.000	0.000

## Summary of Adjustments

Congressional Reductions			
Congressional Rescissions	-1.055		
Congressional Undistributed Reductions	-0.080		
Congressional Increases	0.001		
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	-1.134	0.000	0.000

E. ACQUISITION STRATEGY: This is a non-ACAT program. NAVAIR Lakehurst initiated a solicitation for a Broad Agency Announcement (BAA) in November 2004 with proposals due by February 2005. Source selection panel evaluated proposals and selected awardee(s). Follow-on contract may be awarded for a prototype and/or production units.

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

**RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME

02056533N, AVIATION IMPROVEMENTS

PROJECT NUMBER AND NAME

9999 CONGRESSIONAL ADDS

COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9999 Congressional Adds		0.000	14.605	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								

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

Congressional Adds

R-1 SHOPPING LIST - Item No.

183



**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RD**

**BA7**

**0205633N, AVIATION IMPROVEMENTS**

**CONGRESSIONAL ADDS**

**B. Accomplishments/Planned Program**

<b>9747</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			0.500	
RDT&E Articles Quantity				

**Advanced very lightweight avionics system for airborne platforms** - This effort is to study and evaluate advanced cooling technologies for integration into existing avionics systems.

<b>9748</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			5.100	
RDT&E Articles Quantity				

**Automated Wire Analysis - Navy** - To incorporate new technology to increase the accuracy while decreasing the time required when performing wiring inspection.

<b>9749</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			0.750	
RDT&E Articles Quantity				

**DMS Aviation Improvements** - To support the Center for Defense Sustainment Technology, which will conduct studies and analysis support for Aging Aircraft issues.

R-1 SHOPPING LIST - Item No. 183

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RDT&E, N / BA7**

**0205633N, AVIATION IMPROVEMENTS**

**CONGRESSIONAL ADDS**

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

<b>9750</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.055	
RDT&E Articles Quantity				

**F404/F414 Borescope Equipment Service Life Extension Program** - This program will include design, develop and conduct the test and evaluation of a more durable/reliable F404/F414 engine borescope for use in engine inspections. The borescopes are utilized for engine inspections to locate defects in the engine and increase time on wing. This system will be equipped with interchangeable video probes, increased illumination, high technology articulation system, increase monitor resolution, built in battery capability and deliver increased reliability and accuracy of inspections.

<b>9751</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			4.200	
RDT&E Articles Quantity				

**NAVAIR Depot Maintenance Operations Unique ID** - This effort is to evaluate and modify as required Automatic Identification Technology (AIT) for operation and application in the harsh environments of Naval Aviation Organic Depots. This system and business process improvements must be designed and deployed to integrate this required capability into Naval Aviation Depots.

<b>9752</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			2.000	
RDT&E Articles Quantity				

**Realtime 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RD**

**BA7**

**0205633N, AVIATION IMPROVEMENTS**

**CONGRESSIONAL ADDS**

**B. Accomplishments/Planned Program**

<b>9753</b>		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.000	
RDT&E Articles Quantity				

**Smart Multi-functional Corrosion Inhibiting Coatings** - The Corrosion Inhibiting Coatings initiative is an effort to develop and test a conductive polymer coating for increased corrosion resistance.

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

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

R-1 SHOPPING LIST - Item No. 183

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RDT&E, N / BA-7**

**0205633N, AVIATION IMPROVEMENTS**

**CONGRESSIONAL ADDS**

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:		0.000	
Current President's Budget		14.605	
Total Adjustments		<hr/>	
		14.605	

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		14.605	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal		<hr/>	
		14.605	

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 183

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

**RDT&E, N /**

**BA-7**

**0205633N, AVIATION IMPROVEMENTS**

**CONGRESSIONAL ADDS**

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	To <u>Complete</u>	Total <u>Cost</u>
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**E. ACQUISITION STRATEGY: \***

Not Applicable

R-1 SHOPPING LIST - Item No. 183

# UNCLASSIFIED

FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

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

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
<b>Total PE</b>	7,060	3,858	3,376	3,496	3,661	3,760	3,851
0834 LABORATORY FLEET SUPPORT	3,782	3,858	3,376	3,496	3,661	3,760	3,851
9999 CONGRESSIONAL PLUS-UPS	3,278	0	0	0	0	0	0

**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. In addition, 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). The 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. The result is that the Science Advisors provide insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term S&T programs. The program develops leaders among the 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 is unique in that it enables a continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

# UNCLASSIFIED

FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

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

## B. PROGRAM CHANGE SUMMARY:

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2006 President's Budget Submission	7,151	3,917	3,405
Congressional Undistributed Reductions/Rescissions	-6	-59	0
FY 2005 SBIR	-87	0	0
Program Adjustments	2	0	-7
Rate Adjustments	0	0	-22
FY 2007 President's Budget Submission	7,060	3,858	3,376

## 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:

Goal: Leverage relevant DoD and non-DoD International Science and Technology (S&T) activities and investments to revolutionize and improve naval technology.

Metric: Number of threat/unusual technologies reported (include titles/topics and who they will be submitted to).

Goal: Ensure DoN maintains worldwide technological awareness by engaging the international S&T community (including academia, defense and commercial industries, and government agencies) in areas of naval interest.

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PROGRAM ELEMENT: 0205658N  
PROGRAM ELEMENT TITLE: NAVAL SCIENCE ASSISTANCE PROGRAM

Metric: Number of useful contacts made by the Associate Directors (AD) (include business card information); Number of renewed contacts made by AD (include names - any updates to business cards); Number of new institutions/departments visited (include institution/department names and POC); Number of renewed institutions visited (include names - any updates to address/POC).

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

Metric: Monthly reports by Science Advisors to ONR and senior leadership.

Goal: Provide the Science Advisor, activity and ONR with feedback on the Science Advisor's accomplishments/performance.

Metric: Provide bi-annual performance reviews to ONR, the Science Advisor, and their Command.



# UNCLASSIFIED

FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0205658N      PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM  
PROJECT NUMBER: 0834      PROJECT TITLE: LABORATORY FLEET SUPPORT

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
0834 LABORATORY FLEET SUPPORT	3,782	3,858	3,376	3,496	3,661	3,760	3,851

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The Naval Science Advisor Program ensures that the F/F helps shape the Department of 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. In addition, Science Advisors facilitate and disseminate (JCIDS) requirements provided by the F/F Commanders to the OPNAV N091. The 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. The result is that the Science Advisors provide insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term S&T programs. The program develops leaders among the 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 is unique in that it enables a continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

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 2005	FY 2006	FY 2007
NAVAL SCIENCE ADVISOR PROGRAM	3,782	3,858	3,376

### FY 2005 Accomplishments:

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

- Science Advisor, Commander Seventh Fleet (COMSEVENTHFLT)(C7F), actively supported the Undersea Dominance/Task Force Anti-Submarine Warfare (ASW) demonstrations and other ASW demonstrations (i.e. Theater Anti-Submarine Warfare Exercise (TASWEX), Ship Anti-Submarine Warfare Readiness and Evaluation Measurement (SHAREM), Navy Warfare Development Command (NWDC) ASW Wargames and others). Had ongoing discussions with the leadership of the Littoral ASW Future Naval Capability (FNC) and its prioritization of efforts. Continued ongoing efforts in Anti-Terrorism/Force Protection (AT/FP) technology.
- Science Advisor, Commander Fleet Forces Command (CFFC), established a strong CFFC presence in the Department of Defense, Deputy Assistant Secretary of Navy (DASN), Research, Development, Test and Evaluation (RDT&E), Science and Technology (S&T) assessment process, including the ONR review and the development of the S&T Vision statement. Identified and maintained a close coupling between the N8 requirements organization and the Future Naval Capabilities (FNC) Integrated Process Teams (IPTs). Improved the Sea Trials engagement with ONR, Systems Commands, Warfare Centers, and the Fleet Collaborative Teams through senior leadership briefs, updates, and leading coordination meeting. Established a new level of engagement with the Advanced Concept Technology Demonstration (ACTD) Program. Worked extensively on processes in the S&T community including Sea Trials, ACTDs, FNCs, Small Business Innovative Research (SBIRs), and N6/N7 Gap Analysis.
- Science Advisor, Joint Forces Command (JFCOM), participated in the JFCOM Joint Test and Evaluation (JT&E) arena. Led feasibility studies and participated in the JT&E Senior Advisory Council. Worked as the JFCOM Liaison to the Defense Advanced Research Projects Agency (DARPA) on a Collaborative Partnership between DARPA and JFCOM. Established a broader S&T Advisor office at JFCOM through the addition of a part-time Army Science Advisor, and worked to add an Air Force Science Advisor. Addressed technology shortfalls to support the development of an Operational Net Assessment.

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DATE: Feb 2006

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROJECT NUMBER: 0834

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander U. S. Naval Forces Central Command (COMUSNAVCENT), researched Chemical Biological Radiological Nuclear and Explosives and Drugs (CBERNE+D) portable detector technologies for application in Marine Interception Operations (MIO). Developed Concepts of Operation and Operational Concepts (CONOPS) with Commander Task Force (CTFs)/Fleet. Collaborate with Office of the Chief of Naval Operations (OPNAV)/Deep Blue to complete the acquisition of technologies for use on the Oil Platforms (OPLATS) and to investigate new technologies that would be useful to NAVCENT. Addressed emergent requirements and needs, including Warning Munitions, Automatic Vessel Identification System for incorporation into Global Command and Control System-Maritime (GCCS-M), Lessons Learned from Commander Fifth Fleet (C5F) Chat. Monitored demonstrations on the deployment of a floating security barrier for the Mina Salman pier area.

- Science Advisor, Commander Submarine Forces Atlantic Fleet (COMSUBLANT), provided wide-ranging support to the COMSUBLANT staff on S&T issues. Involved with the ASW Improvement Program semi-annual meetings, and the Unmanned Underwater Vehicle (UUV) Master Plan workshop. Worked with Naval Meteorology and Oceanography Command to develop S&T programs to better understand the operational environment. Involved in development of solutions for communications at speed and depth that support war plan requirements.

- Science Advisor, Commander Naval Surface Pacific Fleet (COMNAVSURFPAC), was involved with many aspects of the Littoral Combat Ship (LCS) ASW Mission Module ranging from review of the radar periscope detection system to Sensors to Assist Visit, Board, Search & Seizure (VBSS) Teams. Maintained a strong working relationship with the Surface Ship Technology (SURFTECH) organization. Involved in developing test and experimentation plans for X-Craft which is being used as a risk mitigation platform for the LCS.

- Science Advisor, Commander Third Fleet (COMTHIRDFLT) (C3F), pursued the Collaborative Operations and Responsive Technology Experimentation (CORTEX) which is a command and control center architecture for integrating civil, DoD, and Non Government Office (NGO) responses to crisis. Worked with Tech Solutions to review line of sight communications efforts.

- Science Advisor, Commander Sixth Fleet (COMSIXTHFLT) (C6F), worked to support teams within the C6F Area of Responsibility (AOR) with biometric systems for identification of persons of interest and non-lethal weapons to be used during special operations. Worked with the C6F staff, Naval Warfare Development Center (NWDC) and other Joint/Naval Commands on Common Operating Picture experimentation. Involved with Global Maritime awareness tracking systems in support of Homeland Security/Homeland Defense missions.

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BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROJECT NUMBER: 0834

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Commander U.S. Navy Europe (COMUSNAVEUR), evaluated the ACTD in the European Command (EUCOM) AOR. Led the Coalition Chat Line Project and worked to transition this demonstration project into acquisition.
- Science Advisor, Commanding General 1st Marine Expeditionary Force (CG I MEF), addressed key concerns in the Improvised Explosive Device (IED) detection, protection from IED effects, and remote sensor networks. Coordinated efforts on Fluxgate Magnetometer, water filtration, secure Global Positioning System (GPS), Vocera, and secure collaboration systems. Coordinated urgent unified need statement (Urgent UNS) for unmanned aerial vehicle (UAV) requirements for the MEF in Iraq.
- Science Advisor, Chief of Naval Operations (CNO) Strategic Studies Group (SSG), supported the research phase of SSG's key S&T study and synthesized the results of the research (i.e., Adaptive Force, Globalized FORCENet & Decision Making, Homeland Protection, Persistent Maritime Power Projection and Sea Superiority). Continued to support each of the SSG Concept Generation teams in support of their 2005 study titled "The Future Maritime Operating Environment for the Fight Against Global Terrorism."
- Science Advisor, Joint Interagency Task Force (JIATF)-South, worked on successful testing/demonstration of the Project Q Passive Go-fast Detection System. Delivered the first two production Army Navy/Aviation Aircraft System Aircraft Infrared Search Radar (AN/AAS)-44A Forward looking Infra-red Sensors (FLIRS) for SH-60B helicopters and the transfer of the 44A's and our two AN/AAS-51A FLIRS to Helicopter Anti-submarine Squadron Light Wing, Atlantic Fleet (HSLWINGLANT) for management. Fielded the new Army Navy/Aviation Platform Aircraft Fire Control Radar (AN/APG)-66 Radar Displays and the new Second FLIR Operator Stations on deploying P-3 Counter Drug Upgrade (CDU) aircraft. Coordinated the Installation and Test of the Air Defense System Integrator (ADSI) data link capability at JIATF. Conducted Operational Testing of the Cudjoe Key Aerostat Maritime Tracking System and the Radar Satellite (RADARSAT)/Center for Southeastern Tropical Advanced Remote Sensing (CSTARS) maritime imaging capabilities.
- Science Advisor, Commander, U.S. Marine Corps, Atlantic (COMMARFORLANT), worked on several experiments associated with Vacuum Assisted Closure (VAC) of wounds to prevent infection and allow wounded Marines to be evacuated to a field medical unit with a higher probability of retaining the damaged limb. Worked on Speech to Speech Language Translation, Iraqi Culture Training Software, and Chow Hall Protection Initiatives in support of operational Marine Forces in Iraq and Afghanistan.

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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 Air Systems Command (COMNAVAIRSYSCOM), researched anti-terrorism and force protection issues, Aircraft Carrier Situational Awareness (ACSAS) and High Output Warning Loudspeaker (HOWL). Researched total cost of ownership/maintenance issues, Mobile Cleaning, Reclaim, and Recycle System (MCRSS), maintenance issue to reduce life-cycle cost of systems.
- Science Advisor, Chief of Naval Operations (CNO) Executive Panel (CEP), supported the CEP Near Term Assessment Study with emphasis on technology issues. Worked with the Office of the Secretary of Defense (OSD) Policy sub-groups on technology issues. Coordinated with the SSG in the development of a strategy for "Accelerating FORCENet - Winning the Information Age Study."
- Science Advisor, Commanding General 2nd Marine Expeditionary Force (CG II MEF) continuous support of Silver Fox (UAV), Project Sheriff, Counter IED Working Group, and various smaller projects in support of II MEF Operation Iraqi Freedom (OIF) 04-06 preparation. Involved with a number of force protection initiatives and coordination of demonstrations during Combined Joint Task Force Exercises (CJTTFEX).
- Science Advisor, Commander, U.S. Marine Corps, Pacific (COMMARFORPAC), was involved in near-term technologies for OIF II, including counter-IED, counter-Man-Portable Anti-Defense System (MANPADS), counter-shooter, and Non-Lethal Weapons technology. Regularly interacted with other Marine Corps Science Advisors on various language translation technologies.
- Science Advisor, Commander Pacific Fleet (COMPACFLT), efforts focused on ASW. Continued as a member of Task Force ASW and interacted heavily with the leadership of the Littoral ASW Future Naval Capabilities (FNC). Coordinated the development of an ASW technologies assessment, in support of Pacific Fleet Science and Technology requirements to support Pacific AOR wartime contingency plans.
- Science Advisor, Naval Supply Systems Command (NAVSUP), researched Radio Frequency Identification (RFID) applications for NAVSUP. Worked a condition-based maintenance program to review the use of wireless networks to communicate machinery health information to a host system. Managed the Collaborative Logistics Program for NAVSUP. Working Sea Basing Logistics issues in support of Naval Force - 21.

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Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0205658N

PROJECT NUMBER: 0834

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT TITLE: LABORATORY FLEET SUPPORT

- Science Advisor, Navy Warfare Development Center (NWDC), explored multiple S&T-related initiatives, including the NAVAIR Decision Support System (DSS), the MOVES Institute XMSF (Extensible Modeling and Simulation Framework), the unsolicited Digital Harbor proposal, the ONR/HAI (Hydro Acoustics, Inc.) proposal, FORCENet (FnCE) Composable Environment), and Extendable Technical C4I Framework (XTCF) Sea Trial. Coordinated special experimentation projects for Sea Trial initiatives. Represented NWDC in various forums and project planning meetings. Worked with CFFC to continue to improve the Sea Trial Information Management System (STIMS). Worked very closely with the Director, Naval Undersea Warfare Center (NUWC) in support of Anti-Submarine Warfare (ASW) littoral operations concept development (CONOPS).
- Science Advisor, Naval Criminal Investigation Service/OPNAV (NCIS/N34), oversaw the implementation of technologies at the North Island AT/FP Technology Test Bed. Continued to manage the Area Security Operations Command and Control System (ASOCC). Supported Joint Harbor Operations Center (JHOC) Prototypes. Worked with Tech Solutions to develop multiple publications on AT/FP.
- Science Advisor, U. S. Pacific Command (USPACOM), participated in counter-IED systems installation in Operation Iraqi Freedom (OIF) with the Naval Explosive Ordnance Disposal Technology Division. Worked closely with Deputy Under Secretary of Defense for Advanced Systems and Concepts (DUSD AS&C) to coordinate ACTD efforts in the PACOM AOR. Participated in the annual staff talks with Singapore. Coordinating Joint Coalition Maritime Awareness (CMA) Advanced Concept Technology Development (ACTD) effort for the Pacific AOR.
- Science Advisor, Commander Submarine Forces Pacific Fleet (COMSUBPAC), developed an action plan to establish an ongoing partnership between the Fleet, the Meteorological/Oceanographic (METOC) community, and the oceanographic research community. Involved the National Defense Center of Excellence for Research in Ocean Acoustics (CEROS) programs and worked on issues for at-sea testing events. Involved in development of solutions for communications at speed and depth that support war plan requirements.
- Science Advisor, Commander Special Warfare Command (COMNAVSPECWAR), coordinated the fielding of an optics detection system to assist the SEALs. Reviewed the Naval Surface Warfare (NSW) Technology Base program to give more direct input from the SPECWAR community. Identified sources and routes of transition funding to take capabilities under development and mature them to a point where they are ready for procurement.

# UNCLASSIFIED

FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0205658N      PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM  
PROJECT NUMBER: 0834      PROJECT TITLE: LABORATORY FLEET SUPPORT

• Science Advisor, OPNAV N81, participated in a N81 initiative to assess the Navy's role in the Global War on Terror (GWOT), which extended to all aspects of the issue from technology to training to force structure. Advocated for inclusion of promising technologies into the modeling effort in support of PR07 to quantify/highlight ongoing S&T work. Leading Assymetric Technology study to assess threats to Fleet/Force elements and ensure adequate force protection initiative are undertaken to prevent technological surprise by our adversaries.

#### **FY 2006 Plans:**

Continue FY 05 efforts with 25 Science Advisors.

#### **FY 2007 Plans:**

Continue FY 06 efforts with 25 Science Advisors.

#### **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 RF 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

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0205658N      PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM  
PROJECT NUMBER: 0834      PROJECT TITLE: LABORATORY FLEET SUPPORT

PE 0603271N RF Systems Advanced Technology  
PE 0603640M USMC Advanced Technology Demonstration (ATD)  
PE 0603727N Joint Experimentation  
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

**D. ACQUISITION STRATEGY:**  
Not applicable.



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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0205658N      PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM  
PROJECT NUMBER: Various      PROJECT TITLE: Congressional Plus-Ups

## CONGRESSIONAL PLUS-UPS:

R9999	FY 2005	FY 2006
LASH MCM/ISR	3,278	0

## FY 05 Accomplishments:

Completed collection of multispectral data of mines in the surf zone and on the beach.  
Completed development of real time surf zone mine detection algorithms.

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EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2006		
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)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	272.587	256.291	218.460	193.192	291.472	177.293	185.671
C2270 Expeditionary Indirect General Support Weapon Systems	16.707	18.131	15.095	17.187	19.982	18.440	18.089
C2272 Intelligence C2 Systems	21.450	26.619	26.672	22.059	19.010	22.234	23.434
C2273 Air Operations C2 Systems	108.891	86.065	47.341	34.693	20.968	23.008	26.375
C2274 Command & Control Wargare Systems	14.937	5.896	3.847	3.616	4.189	4.720	3.734
C2275 Joint Tactical Radio Systems	9.812	7.838	14.612	13.870	12.158	8.872	8.087
C2276 Communications Switching & Control Systems	3.331	6.127	4.494	4.298	3.499	0.841	0.880
C2277 System Engineering & Integration	8.088	9.537	8.919	9.237	9.417	9.741	9.967
*C2278 Air Defense Weapons Systems	20.247	16.001	6.423	10.940	6.374	5.490	5.071
* C2315 Training Devices/Simulators	4.173	8.806	0.0	0.0	0.0	0.0	0.0
*C2510 MAGTF CSSE & SE	17.278	17.453	35.311	20.874	26.271	17.047	25.696
C3098 Fire Support Systems	0.001	0.0	0.0	0.0	0.0	0.0	0.0
C3099 Radar Systems	29.761	26.818	55.746	56.418	169.604	66.900	64.338
C9276 Radar and Marine Corps Ship Maneuver	1.433	0.0	0.0	0.0	0.0	0.0	0.0
C9632 Advanced Ferrite Antenna (AFA)	2.040	0.0	0.0	0.0	0.0	0.0	0.0
C9633 Miniaturized Combat ID System	0.963	0.0	0.0	0.0	0.0	0.0	0.0
C9634 Marine Corps Wideband Communications	4.103	0.0	0.0	0.0	0.0	0.0	0.0
C9635 USMC Hitch Hiker	1.648	0.0	0.0	0.0	0.0	0.0	0.0
C9637 Marine Airborne Re-Trans Sys (MARTS)	3.280	0.0	0.0	0.0	0.0	0.0	0.0
C9638 Covert Sight for Urban Warfare	1.445	0.0	0.0	0.0	0.0	0.0	0.0
C9639 Improved Ground Based Transportable Radar	2.036	0.0	0.0	0.0	0.0	0.0	0.0
C9640 USMC Electronic Battlefield Fusion	0.963	0.0	0.0	0.0	0.0	0.0	0.0
C9999 FY-06 Congressional Adds	0.0	27.000	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT (PE) NAME AND NO. <b>0206313M Marine Corps Communications Systems</b>		
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>			
<p>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.</p> <p>This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.</p> <p><b>Note:</b></p> <p>* C2278 \$3.7M of FY06 Funds will be used to Forward Finance FY 07 for Gripstock</p> <p>** Funds for Project C2315 were realigned to PE 0206623M in FY07.</p> <p>***C2150 \$2.3572M of FY06 Funds will be used to Forward Finance FY07 for GCSS</p>			
<b>B. PROGRAM CHANGE SUMMARY</b>			
	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>
<b>(U) FY 2006 President's Budget:</b>	<b>273.870</b>	<b>237.081</b>	<b>210.955</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases	9.844	27.000	
(U) Reprogrammings	-4.139		14.600
(U) SBIR/STTR Transfer	-5.754		
(U) Minor Affordability Adjustment	-1.234	-7.790	-7.095
<b>(U) FY 2007 President's Budget:</b>	<b>272.587</b>	<b>256.291</b>	<b>218.460</b>
CHANGE SUMMARY EXPLANATION:			
(U) Funding: See Above.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems				C2270 Expeditionary Indirect Fire General Support Weapon			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	16.707	18.131	15.095	17.187	19.982	18.440	18.089	
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>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 battlespace. 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 battlespace 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 battlespace.</p> <p>1. <b>Advanced Field Artillery Tactical Data System (AFATDS)</b> will consist of fire support command and control software fielded on Marine Corps common hardware. AFATDS will provide the MAGTF with an automated ability to rapidly integrate all supporting arm assets into maneuver plans. Provides digital fire support C2 automation to MAGTF Fire Support Coordination Centers, Fire Direction Centers, and Supporting Arms Coordination Centers (afloat).</p> <p>2. <b>MAGTF Software Baseline (MSBL)/ Command and Control Personal Computer (C2PC).</b> MAGTF Software Baseline (MSBL) is an evolutionary software acquisition program that provides common software functionality to enhance and improve the capability and interoperability between multiple Marine Corps MAGTF C4ISR systems. The common software functionality provides the warfighter situational awareness and allows the Commander to successfully operate in a joint/combined environment. This common software functionality is accomplished through two separate but interrelated baselines software development efforts. The Common Operating Environment (COE) Unix baseline, which supports Unix based server systems and the Command and Control Personal Computer (C2PC) baseline which supports Windows based tactical workstations/systems used at the company and above levels. A "light" version of C2PC is being developed for tactical workstations/systems used at the platoon and below level.</p> <p>3. <b>Tactical Command Operations (TCO)</b> will provide systems to the command post which support Maneuver C2. Maneuver C2 is the executive layer of decision support that pulls and fuses information from other functional areas.</p> <p>4. <b>The Data Automated Communications Terminal (DACT)</b> 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). It is the foundational Marine data input and messaging device, building the COP from the platoon up to the battalion and regiment level. Furthermore, DACT is one tool in the Joint Combat ID toolbox that the Marine Commander uses to reduce the potential for fratricide. This initiative addresses shortcomings in the currently-fielded and planned DACT systems as identified during OEF / OIF. The Mounted DACT (M-DACT) (IOC 2nd Qtr FY03) consists of the Ruggedized Handheld Computer (RHC) with Command and Control Personal Computer (C2PC) 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 acquisition objective of 1074 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. 1108 systems of the acquisition objective of 1944 have been procured. 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 commanders in tactical operations. New capabilities will include Non Line of Sight (NLOS) and enhanced communication paths; improved Graphic User Interface (GUI) software and a larger screen, and Selective Availability Anti-Spoofing Module (SAASM) GPS integration.</p> <p>5. <b>Target Location Designation and Hand-Off System (TLDHS)</b> - Provides fire support observers/controllers (OCs) with the ability to: observe their area of interest, quickly and accurately locate ground targets, and digitally request and coordinate target engagements by field artillery (FA), close air support (CAS), and naval surface fire support (NSFS). TLDHS will also provide the capability to designate targets for laser-guided munitions and laser spot trackers. TLDHS is comprised of and integrates two major subsystems: the Targeting Subsystem and the Target Hand-Off Subsystem. USMC MS III (Fielding)for TLDHS was 2Q04.</p>								

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>			<b>February 2006</b>
PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Systems</b>		PROJECT NUMBER AND NAME <b>C2270 Expeditionary Indirect Fire General Support Weapon</b>	
<b>(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.272</b>	<b>0.213</b>	<b>0.170</b>
RDT&E Articles Qty			
<b>TCO:</b> Program management and engineering support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.244</b>	<b>0.204</b>	<b>0.164</b>
RDT&E Articles Qty			
<b>TCO:</b> System testing and integration to develop additional functional capabilities.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.215</b>	<b>0.185</b>	<b>0.149</b>
RDT&E Articles Qty			
<b>TCO:</b> Integrate software changes into new system and perform testing.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.253</b>	<b>0.283</b>	<b>0.228</b>
RDT&E Articles Qty			
<b>TCO:</b> Testing and validations of advanced concepts and technologies.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.209</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>C2PC:</b> Software Development			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.200</b>	<b>1.026</b>	<b>1.026</b>
RDT&E Articles Qty reprogrammed			
<b>MAGTF C4I BASELINE/C2PC:</b> Build, test, field and support COE compliant versions of MSBL and C2PC to fulfill C2 requirements in the six Warfighting functions focuses primarily on the integration, inclusion and incorporation of Fire Support, Maneuver and Intel capabilities.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.245</b>	<b>0.411</b>	<b>0.411</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> Engineering Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.520</b>	<b>0.961</b>	<b>0.961</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> Program Management Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>6.369</b>	<b>3.326</b>	<b>2.442</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> Development of MSBL Client in MS Windows environment (C2PC) and foot mobile Marines in Windows CE environment, Command and Control Compact Edition (C2CE).			

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Systems</b>	<b>C2270 Expeditionary Indirect Fire General Support Weapon</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.200</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> Conduct C2PC Code Quality Analysis.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.100</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> Conduct C2PC Study Analysis.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.020</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> NMCI Cost			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.100</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>MAGTF C4I BASELINE/C2PC:</b> MCSC Program Office Travel			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.085</b>	<b>1.537</b>	<b>0.818</b>
RDT&E Articles Qty			
<b>AFATDS:</b> Development of BUCS and LWTDS SW			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>AFATDS:</b> Field Integration Team (FIT) testing, software development, and FMF interoperability support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.506</b>	<b>0.244</b>
RDT&E Articles Qty			
<b>AFATDS:</b> Program management, engineering support and hardware development.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.032</b>	<b>0.000</b>	<b>0.036</b>
RDT&E Articles Qty			
<b>AFATDS:</b> MCTSAA tested new SW and SOST.			

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Systems</b>	<b>C2270 Expeditionary Indirect Fire General Support Weapon</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.536</b>	<b>2.107</b>	<b>1.853</b>	
RDT&E Articles Qty				
<b>AFATDS:</b> Development of improved interoperability with USMC and Joint systems. Enhancement to EMT and C2PC interface.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>1.292</b>	<b>1.010</b>	<b>1.965</b>	
RDT&E Articles Qty				
<b>AFATDS:</b> Development of SWBII and future software. Increased functionality, interoperability, and ease of use. Better interface with USMC and USN systems.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.580</b>	<b>1.200</b>	
RDT&E Articles Qty				
<b>DACT:</b> DACT FMF test support.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.050</b>	<b>0.050</b>	
RDT&E Articles Qty				
<b>DACT:</b> DACT Exercise Support				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.339</b>	<b>1.046</b>	<b>1.008</b>	
RDT&E Articles Qty				
<b>DACT:</b> DACT Development				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>1.215</b>	<b>0.650</b>	<b>0.000</b>	
RDT&E Articles Qty				
<b>DACT:</b> Protocol Implementation				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.607</b>	<b>0.600</b>	
RDT&E Articles Qty				
<b>DACT:</b> DACT Training Development				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.020</b>	<b>0.020</b>	<b>0.020</b>	
RDT&E Articles Qty				
<b>DACT:</b> DACT Technical Support Plan				

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EXHIBIT R-2a, RDT&E Project Justification			DATE:						
APPROPRIATION/BUDGET ACTIVITY			February 2006						
PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME							
RDT&E, N/BA-7 Operational Sys Dev		C2270 Expeditionary Indirect Fire General Support Weapon							
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007						
Accomplishment/Effort Subtotal Cost	0.000	0.450	0.000						
RDT&E Articles Qty									
<b>DACT:</b> Dismounted DACT Development									
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007						
Accomplishment/Effort Subtotal Cost	2.950	0.000	0.000						
RDT&E Articles Qty									
<b>TLDHS:</b> Test Development and integration support.									
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007						
Accomplishment/Effort Subtotal Cost	0.000	1.750	1.750						
RDT&E Articles Qty									
<b>TLDHS:</b> Test Development and integration support.									
(U) Total \$	<u>16.707</u>	<u>18.131</u>	<u>15.095</u>						
<b>(U) PROJECT CHANGE SUMMARY:</b>									
	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>						
<b>(U) FY 2006 President's Budget:</b>	10.586	18.407	18.523						
(U) Adjustments from the President's Budget:									
(U) Congressional Program Reductions									
(U) Congressional/OSD Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings	6.229								
(U) SBIR/STTR Transfer	-0.103								
(U) Minor Affordability Adjustment	-0.005	-0.276	-3.428						
<b>(U) FY 2007 President's Budget:</b>	<b>16.707</b>	<b>18.131</b>	<b>15.095</b>						
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See Above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
Line Item No. & Name	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI# 463100 TCO	3.145	0.184	0.413	0.407	0.208	0.218	0.229	Cont	Cont
PMC BLI# 463100 AFATDS	0.315	3.968	4.620	5.238	0.856	3.394	3.464	Cont	Cont
PMC BLI# 463100 DACT	2.316	6.753	7.851	2.036	7.017	5.104	3.128	Cont	Cont
PMC BLI#463100 TLDHS	0.000	1.429	1.520	0.914	1.016	1.016	2.034	Cont	Cont
PMC BLI# 463100 GCCS	3.641	4.004	4.405	4.618	4.528	4.875	5.006	Cont	Cont
<b>(U) Related RDT&amp;E:</b>									
(U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II) Defense.									
(U) Navy Tactical Flag Communication and Control System.									



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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0206313M Marine Corps Communications Systems</b>	<b>PROJECT NUMBER AND NAME</b> <b>C2270 Expeditionary Indirect Fire General Support Weapon</b>
<b>(U) D. ACQUISITION STRATEGY:</b>		
<p><b>(U) TCO:</b> Contracting is via General Services Administration schedules with various vendors and is for software maintenance and COTS evaluation and integration. Performance base reviews are conducted quarterly by the PMO.</p> <p><b>(U) MSBL:</b> Funds applied to Northrop Grumman Information Technology (NGIT), San Diego, CA for development of MSBL client in MS Windows environment and development of client for foot mobile Marines in Windows CEOSS environment. Funds applied to Titan Corporation, Dumfries, VA and NGIT, Stafford, VA under the CEOSS contract for program management and engineering support. Funds applied to MCR Federal for C2PC Life Cycle Cost Estimate development. Funds applied to SPAWAR, Charleston, SC for build, test, and support COE compliant versions of GCC-J in support of six Warfighting functions.</p> <p><b>(U) AFATDS:</b> AFATDS is a Cost Plus Award Fee contract through Army CECOM, Ft. Monmouth, N. J. R&amp;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 (V6.3.2 and V7).</p> <p><b>(U) DACT:</b> The Program develops software and hardware for two operational domains. The Mounted DACT (M-DACT) (IOC 2nd Qtr FY03) consists of the Ruggedized Handheld Computer (RHC) with Command and Control Personal Computer (C2PC) 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 acquisition objective of 1074 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. 1108 systems of the acquisition objective of 1944 have been procured.</p> <p><b>(U) TLDHS:</b> 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.</p>		
<b>E. Major Performers:</b>		
<b>TACTICAL COMBAT OPERATIONS (TCO)</b>		
<p>FY 05 SPAWAR, CHARLESTON, S.C. Provide funds to EMA, INC, Charleston, S.C. for Testing and Validation of new workstation concept, integrate software changes into new system, and perform testing.</p> <p>FY 06 SPAWAR, CHARLESTON, SC Provide funds to EMA, INC, Charleston, SC for testing of new workstation concept, integration of new software, and final acceptance testing. Nov 05.</p> <p>FY 07 SPAWAR, CHARLESTON, SC Provide funds to EMA, INC, Charleston, SC for testing of new server concept, integration of new software, and final acceptance testing.</p>		
<b>MAGTF SOFTWARE BASELINE (MSBL)</b>		
<p>FY 05 NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), San Diego, CA. Software development C2PC and C2CE (C2PC Light). contract award date: Feb 05  SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. contract award date: JUN 05  Ocean Systems Engineering Corporation (OSEC), Stafford, VA Training Development  NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), Stafford, VA. Engineering support. contract award date: APRIL 05.  TITAN CORPORATION, Stafford, VA. Program Management Support. contract award date: Oct 04  MCTSSA, software testing  Naval Post Graduate School, C2PC Study Analysis. Estimated contract award date: Feb 05</p> <p>FY 06 NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), San Diego, CA. Software development C2PC and C2CE (C2PC Light). Estimated contract award date: Dec 05  SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Estimated contract award date: Nov 05  NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), Stafford, VA. Engineering support. Estimated contract award date: Oct 05  TITAN CORPORATION, Stafford, VA. Program Management Support. Estimated contract award date: Oct 05</p> <p>FY 07 NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), San Diego, CA. Software development C2PC and C2CE (C2PC Light). Estimated contract award date: Dec 06  SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Estimated contract award date: Dec 06  NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), Stafford, VA. Engineering support. Estimated contract award date: Oct 06  TITAN CORPORATION, Stafford, VA. Program Management Support. Estimated contract award date: Oct 06</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Systems</b>	<b>C2270 Expeditionary Indirect Fire General Support Weapon</b>
<b>ADVANCED FIELD ARTILLERY TACTICAL DATA SYSTEM (AFATDS)</b>		
FY05 Ocean Systems Engineering Corporation (OSEC), Stafford, VA Training Development NORTHROP GRUMMAN MISSION SYSTEMS (NGMS), Stafford, VA. Engineering support. MCOTEA, Quantico VA. Test software. MCTSSA, Software testing. Award Nov 05		
FY 06 RAYTHEON, Fort Wayne IN. Develop and test software. Oct 06. MCOTEA, Quantico VA. Test software. Award Dec 06. MCTSSA, Software testing. Award Oct 06.		
FY 07 RAYTHEON, Fort Wayne IN. Develop and test software. Nov 07. MCOTEA, Quantico VA. Test V6.3.2 software. Award Nov 07. MCTSSA, Software testing. Award Nov 07.		
<b>DATA AUTOMATED COMMERCIAL TERMINAL (DACT)</b>		
FY 05 NORTHROP GRUMMAN, San Diego, CA. Software Development Ocean Systems Engineering Corporation (OSEC), Stafford, VA Training Development Titan Corporation, Staffort, VA Program Support NORTHROP GRUMMAN Mission Systems (NGMS), Stafford, VA. Program Support.		
FY 06 NORTHROP GRUMMAN, San Diego, CA. Software Development Ocean Systems Engineering Corporation (OSEC), Stafford, VA Training Development Raytheon, Modem Development Titan Corporation, Staffort, VA Program Support NORTHROP GRUMMAN Mission Systems (NGMS), Stafford, VA. Program Support.		
FY 07 NORTHROP GRUMMAN, San Diego, CA. Software Development Ocean Systems Engineering Corporation (OSEC), Stafford, VA Training Development Titan Corporation, Staffort, VA Program Support NORTHROP GRUMMAN Mission Systems (NGMS), Stafford, VA. Program Support.		
<b>TARGET LOCATION DESIGNATION AND HAND-OFF SYSTEM (TLDHS)</b>		
FY05	N/A	
FY06	TBD	
FY07	TBD	

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<b>Exhibit R-3 Cost Analysis</b>				<b>DATE: February 2006</b>								
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>PROGRAM ELEMENT</b>			<b>PROJECT NUMBER AND NAME</b>							
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>		<b>0206313M Marine Corps Communications Sys</b>			<b>C2270 Expeditionary Indirect Fire General Support Weapon System</b>							
<b>Cost Categories</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total PY s Cost</b>	<b>FY 05 Cost</b>	<b>FY 05 Award Date</b>	<b>FY 06 Cost</b>	<b>FY 06 Award Date</b>	<b>FY 07 Cost</b>	<b>FY 07 Award Date</b>	<b>Cost to Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
TCO	WR/RCP	SPAWAR. Charleston, SC	1.328	0.498	11/04	0.417	11/05	0.334	11/06	Cont	Cont	
C2PC	RCP	Northrop Grumman, San Diego, CA	0.000	0.000		1.209	02/06	0.000	01/00	Cont	Cont	
MAGTF C4I BASELINE	RCP	SPAWAR, Charleston, SC	6.060	1.400	11/04	1.026	02/06	1.026	11/06	Cont	Cont	
MAGTF C4I BASELINE	RCP	Northrop Grumman, San Diego, CA	26.201	2.980	02/05	3.326	02/06	2.442	10/06	Cont	Cont	
MAGTF C4I BASELINE	RCP	Ocean Sys Eng Corp (OSEC)Stafford	1.364	0.245	10/04	0.411	10/05	0.411	10/06	Cont	Cont	
MAGTF C4I BASELINE	RCP	Titan Corporation, Stafford, VA	2.170	0.538	10/04	0.614	10/05	0.614	10/06	Cont	Cont	
MAGTF C4I BASELINE	WR	MCSC, Quantico, VA	0.180	3.389	10/04					Cont	Cont	
MAGTF C4I BASELINE	RCP	Carnegie Melon University	0.448	0.200	10/04					0.000	0.648	
MAGTF C4I BASELINE	RCP	Naval Post Graduate School	0.100	0.000	02/05					0.000	0.100	
MAGTF C4I BASELINE	WR	NMCI	0.020	0.020	10/04					0.000	0.040	
MAGTF C4I BASELINE	RCP	Knowldege Connection, Inc Stafford, VA				0.210	10/05	0.210	10/06	Cont	Cont	
MAGTF C4I BASELINE	WR	Marine Corps Tactical Systems Support Activity (MCTSSA)				0.132	02/06	0.132	10/06	Cont	Cont	
MAGTF C4I BASELINE	WR	Marine Corps Systems Command PG-10				0.005	02/06	0.005	10/06	Cont	Cont	
AFATDS	WR	SPAWAR. Charleston, SC		0.015	10/05							
AFATDS	WR	MCSC (MCTSSA), Quantico, VA	0.280	0.000		0.034	11/05	0.036	11/06	Cont	Cont	
AFATDS	CPFF/MIPR	CECOM, Ft. Monmouth,NJ	2.915	1.865	11/04	5.126	11/05	4.880	11/06	Cont	Cont	
DACT	TM	Raytheon, Fort Wayne, IN	3.199	0.000		0.650	11/05			Cont	Cont	
DACT	FFP	Northrop Grumman, San Diego CA	1.570	0.450	11/04	0.450	11/05			Cont	Cont	
DACT	WR	FMF, MCB Camp Pendleton/MCTSSA	0.320	0.000		0.650	11/05	1.270	11/06	Cont	Cont	
DACT	FFP	OSEC, Stafford, VA		0.600	10/04	0.607	11/05	0.600	11/06	Cont	Cont	
DACT	FFP	SPAWAR. Charleston, SC		0.090								
DACT	UNK	TBD				1.046	12/05	1.008	11/06	Cont	Cont	
AFATDS	RCP	Titan Corporation, Stafford, VA		0.058	10/04							
AFATDS	RCP	Ocean Sys Eng Corp (OSEC)Stafford		0.441	10/04							
TLDHS	RCP	MCSC, Quantico, VA		1.596	10/04							
TLDHS	MP	SPAWAR. Charleston, SC		0.041	10/04							
TLDHS	SS/IDIQ	TBD				1.000	01/06	1.000	01/07	Cont	Cont	
<b>Subtotal Product Dev</b>				<b>14.426</b>		<b>16.913</b>		<b>13.968</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

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Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev		0206313M Marine Corps Communications Sys		C2270 Expeditionary Indirect Fire General Support Weapon System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TLDHS	RCP	NSWC Crane	5.069	0.750	04/05	0.070	12/05	0.150	12/06	0.000	6.039	
<b>Subtotal Support</b>				<b>0.750</b>		<b>0.070</b>		<b>0.150</b>		Cont	Cont	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TCO	WR	MCTSSA, Camp Pndltn, CA	0.261	0.000	12/04	0.180	12/05	0.180	12/06	Cont	Cont	
TCO	WR/RCP	SPAWAR, Charleston, SC	0.000	0.468	11/04	0.288	11/05	0.197	11/06	Cont	Cont	
TLDHS	WRR	NAWC, China Lake, CA	0.144	0.000		0.150	12/05	0.070	12/06	0.000	0.364	
TLDHS	MIPR	JITC, Ft. Huachuca	0.000	0.075	10/04	0.030	10/05	0.030	10/06	0.000	0.135	
TLDHS	WRR	NSWC Dahlgren	0.638	0.138	03/05	0.500	12/05	0.500	12/06	0.000	1.776	
TLDHS	WR	MCOTEA		0.350	11/04							
AFATDS	WR	MCOTEA		0.066	11/04							
DACT	WR	MCOTEA		0.434	11/04							
<b>Subtotal T&amp;E</b>				<b>1.531</b>		<b>1.148</b>		<b>0.977</b>		Cont	Cont	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>Subtotal Management</b>				<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>0.000</b>	
Remarks:												
<b>Total Cost</b>				<b>16.707</b>		<b>18.131</b>		<b>15.095</b>		Cont	Cont	

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EXHIBIT R-4/4a, Schedule Profile/Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

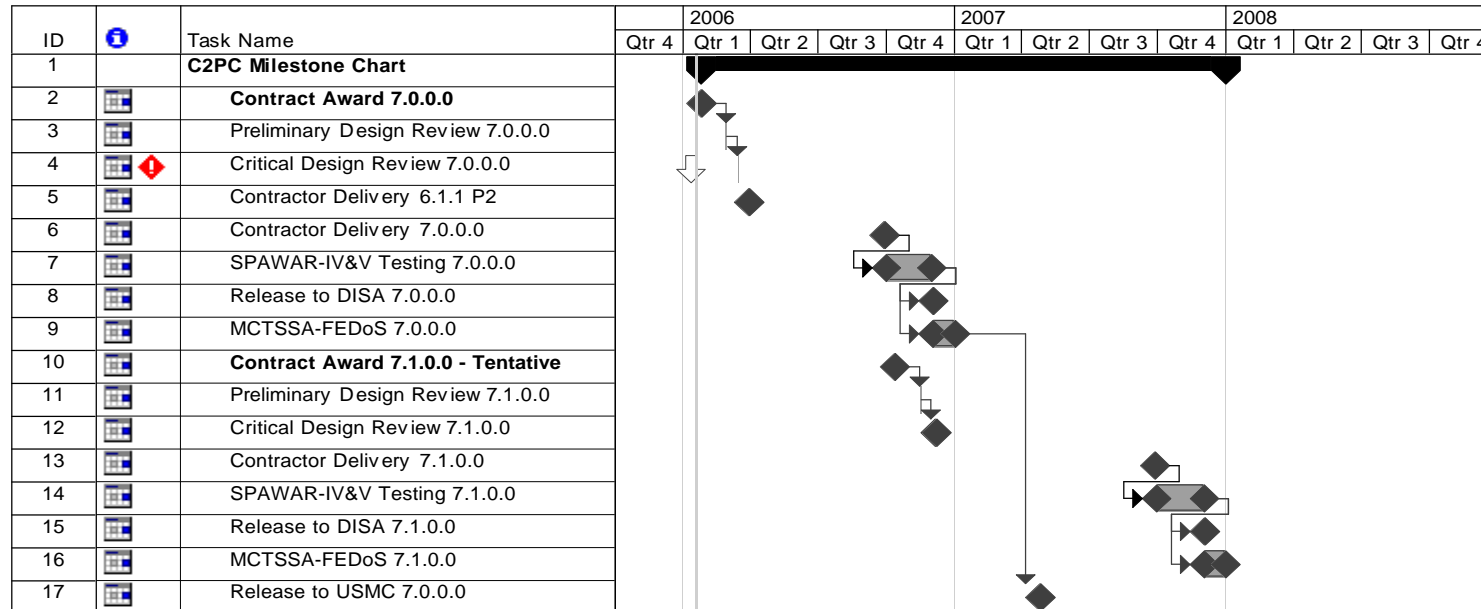
PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

**C2270 Expeditionary Indirect Fire General Support  
Weapon System**

## MSBL



**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E.N MSBL/C2PC

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E.N MSBL/C2PC	8.754	6.933	4.840	6.165	6.363	6.521	6.617	Cont	Cont

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**EXHIBIT R-4/4a, Schedule Profile/Detail**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

**C2270 Expeditionary Indirect Fire General Support  
Weapon System**

<b>MSBL SCHEDULE DETAIL</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
C2PC SOFTWARE RELEASES	4Q	3Q	1Q			

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>				DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>			PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>21.450</b>	<b>26.619</b>	<b>26.672</b>	<b>22.059</b>	<b>19.010</b>	<b>22.234</b>	<b>23.434</b>
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(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.</p> <p><b>Tactical Exploitation of National Capabilities (TENCAP)</b> 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.</p> <p><b>Topographic Production Capability (TPC)</b> 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 provide data collection, analysis and integration; and decision-aid development support.</p> <p><b>Joint Surveillance Target Attack Radar (JSTARS)</b> 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 and Internet Protocol Version 6 (IPv6) research and development .</p> <p><b>Coastal Battlefield Reconnaissance and Analysis (COBRA)</b> system is a passive multispectral sensor system capable of operating in a Manned Aircraft and an Unmanned Aerial Vehicle (UAV). Imagery recorded on the UAV or disseminated via data link is analyzed by the COBRA processing station. COBRA algorithm processing provides near real-time automatic minefield detection with Differential Global Positioning System (DGPS) location accuracy.</p> <p><b>Joint System Imagery Processing System Tactical Exploitation Group (JSIPS-TEG)</b> - The TEG System is the only tactical imagery exploitation system in the USMC and is one of the four systems comprising the Distributed Common Ground\Surface System-Marine Corp (DCGS-MC). It is made up of two modular and scaleable echelon-tailored configurations: the TEG-Main (TEG-M) and the TEG Remote Workstation (TEG-RWS). The TEG provides a mobile, tailorable, tactically deployable capability to receive and exploit imagery, and disseminate reports and secondary imagery products for use in all aspects of operational planning. The TEG is also interoperable with the Army's Tactical Exploitation System (TES), the USAF Intelligence Systems Reconnaissance Manager (ISRM), the DCGS-Navy (DCGS-N) and other USMC C4I systems.</p> <p><b>Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP)</b> 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, HUMINT, and technical collection operations in accordance with (IAW) applicable national oversight directives.</p> <p>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.</p>								

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>
<p><b>Team Portable Collection System - Multi-Platform Capable (TPCS-MPC)</b> - The TPCS- MPC will provide the MAGTF commander with a modular and scaleable carry on/off suite of equipment capable of conducting Signals Intelligence (SIGINT) operations onboard organic non-dedicated Marine Corps air, ground, and water borne platforms. The TPCS-MPC will be highly modular, mission configurable, multi-platform system incorporating plug-and-play technologies. The system will provide state-of-the-art, versatile air/ground/water borne SIGINT and EW support to the MAGTF through the use of lightweight, flexible mission equipment suites capable of detecting, identifying, locating, and exploiting current and emerging communications technologies, intercepting non-communication signals, and improving the system's geolocation accuracy.</p> <p><b>Tactical Remote Sensor System (TRSS-PIP)</b> - 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.</p> <p><b>MAGTF Secondary Imagery Dissemination System (MSIDS)</b> 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 high adjacent commands. MSIDS capability resides with the MAGTF G/S-2 sections and Ground Reconnaissance units. 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 (OW/CI) or existing C4ISR architecture. MSIDS FoS is currently employed in every location world-wide where the Marine Corps participates in military operations. MSIDS is currently, or has recently, been employed in Iraq, Kuwait, Afghanistan, Haiti, Philippines, and Horn of Africa.</p> <p><b>Intelligence Analysis Systems (IAS)</b> 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.</p> <p><b>Global Command and Control System Integrated Imagery and Intelligence (GCCS I3)</b> 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).</p> <p><b>Technical Control Analysis Center (TCAC).</b> 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.</p> <p><b>Intelligence Broadcast Receiver (IBR)</b> 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.</p> <p><b>Intelligence System Readiness (ISR)</b> - provides timely and targeted solutions that enable the MAGTF Commander to accomplish the mission by rapid technology insertion, quick response training, logistics and provide interim support to mission essential legacy systems that are not otherwise supported through the POM process. By utilizing the Field User Evaluation (FUE) Process, the ISR program enhances the Marine Corps Intelligence Architecture by mitigating operational shortfalls through Commercial-Off-The-Shelf (COTS), Government-Off-The-Shelf (GOTS) and Non-Developmental Item (NDI) solutions. In this way, ISR provides proof-of-concept prototypes and focused Research and Development (R&amp;D) efforts to support the Marine Corps Intelligence Architecture and shorten the time required to fill gaps and field systems. The ISR program Team also trains Marines to maximize new systems and capabilities.</p>		



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EXHIBIT R-2a, RDT&E Project Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
<p><b>Trojan Spirit II</b> - Two programs TROJAN SPIRIT II and TROJAN SPIRIT LITE are merging into a single program called TROJAN SPIRIT. TROJAN SPIRIT is a SHF multi-band satellite communications terminal, available in either High Mobility Multi-Purpose Wheeled Vehicle (HMMWV)-mounted or transit case configuraion, that provides dedicated tactical communications capacity at the TS/SCI and Secret Collateral levels to USMC intelligence units. TROJAN SPIRIT terminals provide connectivity into JWICS, NSANET and SIPRNET via</p> <p><b>DCGSI</b> - Distributed Common Ground/Surface System-Marine Corps, 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. The Marine Corps will conduct DIB integration reseach and development to meet a congressionally mandated implementation deadline.</p>			
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.030</b>	<b>0.028</b>	<b>0.035</b>
RDT&E Articles Qty			
<b>CIHEP:</b> Engineering, Integration and Technical support for technical refresh and update of program hardware/software upgrades.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.077</b>	<b>0.091</b>	<b>0.091</b>
RDT&E Articles Qty			
<b>CIHEP:</b> Program Management Support for the technical refresh and update of program hardware/software upgrades.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.040</b>	<b>0.156</b>	<b>0.158</b>
RDT&E Articles Qty			
<b>GCCS-I3:</b> Logistic Support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.030</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GCCS-I3:</b> Program Documentation			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.580</b>	<b>1.097</b>	<b>1.112</b>
RDT&E Articles Qty			
<b>GCCS-I3:</b> Software Engineering Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.417</b>	<b>0.314</b>	<b>0.318</b>
RDT&E Articles Qty			
<b>GCCS-I3:</b> Contractual Support - Infrastructure			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.049</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GCCS-I3:</b> Engineering/Acq Logistics Support			

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.064</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GCCS-I3: Program Testing</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.500</b>	<b>0.574</b>	<b>0.583</b>
RDT&E Articles Qty			
<b>IAS MOD KIT: Management, Engineering and Acquisition Logistic Support</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.425</b>	<b>0.460</b>	<b>0.455</b>
RDT&E Articles Qty			
<b>IAS MOD KIT: Development of software solutions for system applications and migration over to Win XP OS.</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.860</b>	<b>1.040</b>	<b>1.000</b>
RDT&E Articles Qty			
<b>IBR: Engineering and technical service support.</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.069</b>	<b>0.097</b>	<b>0.087</b>
RDT&E Articles Qty			
<b>IBR: Contract and Program Support.</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.533</b>	<b>0.150</b>	<b>0.150</b>
RDT&E Articles Qty			
<b>ISR: Program Management and Technical Support for the ISR Program.</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.600</b>	<b>0.550</b>
RDT&E Articles Qty			
<b>ISR: Engineering Support for delivery of new technology initiatives to the Operating Forces.</b>			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.266</b>	<b>0.236</b>
RDT&E Articles Qty			
<b>ISR: System Engineering support for the ISR Testing and Training Center.</b>			

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.261</b>	<b>0.186</b>	<b>0.259</b>
RDT&E Articles Qty			
<b>JSTARS:</b> Engineering and technical support for development and integration of client software that will reside on existing MAGTF system and utilize JSTARS data.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.186</b>	<b>0.504</b>
RDT&E Articles Qty			
<b>JSTARS:</b> Future MTI capability into JSTARS ground elements.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.108</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JSTARS:</b> Common Data Link Capability.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.389</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JSTARS:</b> Future MTI Sensor capability.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.034</b>	<b>0.073</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JSTARS:</b> IPv6 integration research.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.447</b>	<b>0.445</b>	<b>0.710</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development and integration of enhanced TEG/TEG-RWS functionality to include SCI capability.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.225</b>	<b>0.300</b>	<b>0.371</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development and integration of required upgrades/interfaces to accommodate emerging airborne imagery sensor.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.157</b>	<b>0.090</b>	<b>0.080</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Develop, maintain and improve Precision Targeting software.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.086</b>	<b>0.130</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development of MTI/MTIX interfaces to include potential merger of current JSTARS/CGS capabilities			

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	
		PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.198</b>	<b>0.104</b>	<b>0.210</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development and integration of video capture and exploitation capability.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.081</b>	<b>0.138</b>	<b>0.183</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development and integration of mandated DCGS/DIB interfaces and communication architectures.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.100</b>	<b>0.094</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development of man-portable and reduced form-factor Comon Data Link (CDL) capability.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.738</b>	<b>0.492</b>	<b>0.563</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Engineering/technical management and Infrastructure/Team IMINT shared costs.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.084</b>	<b>0.100</b>
RDT&E Articles Qty			
<b>JSIPS-TEG:</b> Development and integration of mandated Joint interoperability and architectures to include IPv6, GIG and others.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.160</b>	<b>0.206</b>	<b>0.210</b>
RDT&E Articles Qty			
<b>MSIDS:</b> Program Management and technical support for product development of program hardware and software refresh.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.061</b>	<b>0.041</b>	<b>0.041</b>
RDT&E Articles Qty			
<b>MSIDS:</b> Program Management and technical support for Technical and Evaluation of program refresh.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.856</b>	<b>0.912</b>	<b>1.511</b>
RDT&E Articles Qty			
<b>TCAC:</b> Software development keeping TCAC with COE 4.X and future releases.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>3.191</b>	<b>3.182</b>	<b>2.876</b>
RDT&E Articles Qty			
<b>TENCAP:</b> Program support and management; evaluate national intelligence data systems for MAGTF applicability.			

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.290</b>	<b>0.617</b>	<b>1.032</b>
RDT&E Articles Qty			
<b>TENCAP:</b> Technical assessments of emerging national data dissemination capabilities.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.015</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TENCAP:</b> Training and education efforts by providing the Fleet Marine Force with TENCAP simulation, visualization, and data receipt and dissemination capabilities.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.061</b>	<b>0.000</b>	<b>0.100</b>
RDT&E Articles Qty			
<b>TENCAP:</b> Evaluate the utility of emerging exploitation, automated and manual target recognition and detection tools.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.319</b>	<b>0.354</b>	<b>0.357</b>
RDT&E Articles Qty			
<b>TPC:</b> Contractor Support for Integration and Re-engineering Support			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>1.661</b>	<b>0.000</b>	<b>1.500</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> EDM Design.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>1.500</b>	<b>0.000</b>	<b>0.500</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> System development.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.027</b>	<b>0.057</b>	<b>0.049</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> Training development and test support.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.200</b>	<b>1.100</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> Program support and management.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.950</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> Contractor advisory assistance service.			

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<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.348</b>	<b>0.350</b>	<b>0.350</b>
RDT&E Articles Qty			
<b>TPCS-MPC:</b> Operational Test and Evaluation (OT&E).			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.065</b>	<b>0.175</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Logistic and Admin support.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.702</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Software development of HHPM and Low Cost Imager; Improved Air Delivered Sensor (IADS) II; Encoder Transmitter Unit (ETU); Windows 2000 migration; and RSMS vewr 3.1 field verification/version 4.0.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>2.236</b>	<b>0.900</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Engineering support.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>1.901</b>	<b>0.000</b>	<b>1.445</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Development of Unattended Ground Miniaturized Sensors (UGMS) and AADS electronic components.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.705</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Air Certification of Advanced Air Delivered Sensor (AADS) store.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.918</b>	<b>1.000</b>	<b>1.300</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Software Development of AADS and UGMS Monitoring System.			
COST (\$ in Millions)	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.716</b>	<b>1.250</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Development of Increment IV and software efforts			

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		PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>	
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.500</b>
RDT&E Articles Qty			
<b>TRSS-PIP:</b> Support IOT&E and Increment II efforts.			
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.420</b>
RDT&E Articles Qty			
<b>TROJAN SPIRIT:</b> Development of P3I upgrades.			
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>2.314</b>
RDT&E Articles Qty			
<b>DCGS-MC</b> - USMC DCGS Integrated Backbone (DIB).			
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>2.315</b>
RDT&E Articles Qty			
<b>DCGS-MC</b> - Application Interface (API) and Application Process Development.			
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.583</b>
RDT&E Articles Qty			
<b>DCGS-MC</b> - Engineering and Technical Services.			
COST (\$ in Millions)		<b>FY 2005</b>	<b>FY 2006</b>
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.497</b>
RDT&E Articles Qty			
<b>DCGS-MC</b> - Studies, analysis and evaluation.			
<b>(U) Total \$</b>		<b><u>21.450</u></b>	<b><u>26.619</u></b>
			<b><u>26.672</u></b>

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<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>	
<b>(U) PROJECT CHANGE SUMMARY:</b>	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
<b>(U) FY 2006 President's Budget:</b>	<b>22.299</b>	<b>27.025</b>	<b>22.440</b>
(U) Adjustments from the President's Budget:			
(U) Congressional Prog Reduction			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.828		5.000
(U) SBIR/STTR Transfer	-0.025		
(U) Minor Affordability Adjustment	0.004	-0.406	-0.768
<b>(U) FY 2007 President's Budget:</b>	<b>21.450</b>	<b>26.619</b>	<b>26.672</b>
<b>CHANGE SUMMARY EXPLANATION:</b>			
(U) Funding: See Above.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			



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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					
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>											
<u>Line Item No. &amp; Name</u>		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To</u>	<u>Compl</u>	<u>tal Cost</u>
PMC BLI 471400 TRSS PIP	TRSS-PIP	8.459	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.459
PMC BLI 474700 Intell Support Eq	TRSS-PIP	0.000	9.289	2.666	5.886	10.402	7.699	13.000	Cont	Cont	
PMC BLI 474700 Intell Support Eq	CIHEP	1.437	1.426	1.601	1.761	1.862	1.935	1.970	Cont	Cont	
PMC BLI 474700 Intell Support Eq	DCGSI	0.000	1.303	3.240	0.529	0.612	6.203	0.574	Cont	Cont	
PMC BLI 474700 Intell Support Eq	JSIPS	0.982	3.401	0.267	0.000	1.283	1.813	0.299	0.000	0.000	8.045
PMC BLI 474700 Intell Support Eq	TPCS	2.637	7.641	4.660	3.149	0.301	0.000	0.000	0.000	0.000	18.388
PMC BLI 474700 Intell Support Eq	MSIDS	1.338	1.614	1.697	1.762	1.718	1.757	1.794	Cont	Cont	
PMC BLI 474700 Intell Support Eq	IBR	2.024	1.320	0.401	0.420	0.422	0.429	0.434	Cont	Cont	
PMC BLI 474700 Intell Support Eq	TPC	1.268	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.268
PMC BLI 474700 Intell Support Eq	RREP	1.940	3.992	0.034	1.019	5.191	0.100	1.294	Cont	Cont	
PMC BLI 474700 Intell Support Eq	TSCM	0.000	1.159	0.000	1.323	0.000	1.448	0.000	Cont	Cont	
PMC BLI 474900 MOD KITS Intell	IAS MOD Kit	2.107	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.107
PMC BLI 465200 Mod Kits	IAS MOD Kit	0.000	3.635	5.253	2.618	1.469	2.706	1.720	Cont	Cont	
PMC BLI 474900 Mod Kits Intell	TCAC	1.491	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.491
PMC BLI 465200 Mod Kit	TCAC	0.000	0.933	3.904	0.945	1.127	0.000	0.772	Cont	Cont	
PMC BLI 474900 Mod Kits Intell	JSTARS	3.408	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.408
PMC BLI 465200 Mod Kit	JSTARS	0.000	4.181	0.024	3.728	1.624	1.487	2.498	Cont	Cont	
PMC BLI 474900 Mod Kits Intell	TERPES	0.820	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.82
PMC BLI 465200 Mod Kit	TERPES	0.000	2.982	0.000	3.182	0.000	0.000	0.000	0.000	0.000	6.164
PMC BLI 474900 Mod Kits Intell	ISR	1.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.011
PMC BLI 465200 Mod Kit	ISR	0.000	3.980	3.645	1.466	2.424	2.022	3.591	Cont	Cont	
PMC BLI 463300 Radio Systems	TROJAN LITE	0.962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.962
PMC BLI 474700 Intell Support Eq	TROJAN SPIRIT	0.000	7.300	3.094	4.011	0.656	0.108	0.113	Cont	Cont	
PMC BLI 474700 Intell Support Eq	JWICS	0.000	0.723	0.781	0.801	0.822	0.845	0.867	0.867	0.867	5.706
PMC BLI 474700 Intell Support Eq	TVCS	5.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.7
PMC BLI 474700 Intell Support Eq	USMC Terrain Analysis (TAP)	0.996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.996

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>
<p><b>(U) Related RDT&amp;E:</b></p> <p>(U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II)</p> <p>(U) PE 0604270A (Intelligence and Electronic Warfare Common Sensor (IEWCS), TACJAM-A)</p> <p>(U) PE 0305885G (Tactical Cryptologic Program)</p> <p>(U) PE 0603730A (Tactical Surveillance System - Advanced Development), Army TENCAP, Project D560</p> <p>(U) PE 0603766A (Tactical Electronic Surveillance System - Advanced Development), Army TENCAP, Project D907</p> <p>(U) PE 0604740A (Tactical Surveillance System - Engineering Development), OSD TENCAP, Project D662</p> <p>(U) PE 0902398M (United States Special Operations Command), Chariot Program</p> <p>(U) PE 0605867N (SEW Surveillance/Reconnaissance Support), Project Z1034</p> <p><b>(U) ACQUISITION STRATEGY JSTARS:</b> JSTARS will utilize ongoing Army and Navy JSTARS contracts for development of client software, future CDL, MTI and MTI Sensor capabilities. IPv6 research will be 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.</p> <p><b>(U) ACQUISITION STRATEGY JSIPS TEG:</b> The TEG Program Office leverages the advantages of its multi-service common software baseline and inherent Joint service interoperability. Development 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. The MTC-operated Integrated Team Solutions Facility (ITSFAC) provides facilities to conduct integration, interoperability, and security certification and accreditation testing of USMC intelligence systems, system training, and program management support.</p> <p><b>(U) ACQUISITION STRATEGY TPCS:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY TRSS:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY TENCAP:</b> Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.</p> <p><b>(U) ACQUISITION STRATEGY CIHEP:</b> CIHEP will use existing 8A contractor, Action Systems, the developer of the original system for test, evaluation and integration of planned refresh items for the ADP and Imagery Module. US Army IMA will be used for test, evaluation, and integration of planned refresh items for the TSS, Audio and Miscellaneous modules. CIHEP will coordinate acquisitions of communications equipment with PM Comm for planned upgrades to the Communications Module.</p> <p><b>(U) ACQUISITION STRATEGY MSIDS:</b> 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 unsupported. The increment refresh approach will effectively leverage technological advances. Each increment of upgrades will refresh 1/3 of the fielded components.</p>		

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>
<p><b>(U) ACQUISITION STRATEGY GCCS-I3:</b> 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. The program is funded for five years beginning in FY02 and, as it is not a procurement effort, there are no life cycle or acquisition phases for which the Marine Corps is responsible.</p> <p><b>(U) ACQUISITION STRATEGY TCAC:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY IBR:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY TPC:</b> 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. Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements.</p> <p><b>(U) ACQUISITION STRATEGY ISR:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY IAS:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY TROJAN SPIRIT:</b> 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.</p> <p><b>(U) ACQUISITION STRATEGY DCGSI:</b> The Marine Corps DCGS-MC project officer will leverage off of the USAF DCGS 10.2 Research, Development Test and Evaluation (RDT&amp;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 compliance efforts.</p>		

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>
<b>(U) E. MAJOR PERFORMERS:</b>		
<b>MANPACK SIDS (MP SIDS)</b>		
FY 05 Integrity Data Inc (IDI), Colorado Springs, Colorado. Provide funds for integration and sustainment support. Northrop Grumman Information Technology (NGIT), Stafford, VA Provide funds for engineering and program management support. Navy Systems Management Activity (MTC, Stafford, VA). Provide funds for engineering and program management support.		
FY 06 Integrity Data Inc (IDI), Colorado Springs, Colorado. Continue to provide funds for integration and sustainment support. Northrop Grumman Information Technology (NGIT), Stafford, VA Continue to provide funds for engineering and program management support. Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for engineering and program management support.		
FY 07 Integrity Data Inc (IDI), Colorado Springs, Colorado. Continue to provide funds for integration and sustainment support. Northrop Grumman Information Technology (NGIT), Stafford, VA Continue to provide funds for engineering and program management support. Navy Systems Management Activity (MTC, Stafford, VA). Continue to provide funds for engineering and program management support.		
<b>INTELLIGENCE BROADCAST RECEIVER (IBR)</b>		
FY 05 COMPUTER SCIENCE CORPORATION (CSC), Woodbridge, VA. Provide funds to MDA Technologies for IBS Common Message format implementation assessment and Engineering and technical management support. SPAWAR, Charleston, SC. Provide funds for integration, engineering, program management and contractual support.		
FY 06 COMPUTER SCIENCE CORPORATION (CSC), Woodbridge, VA Continue to provide funds to MDA Technologies for IBS Common Message format implementation assessment, IBR to JTRS transition assessment and engineering and technical management support.		
FY 07 COMPUTER SCIENCE CORPORATION (CSC), Woodbridge, VA Continue to provide funds to MDA Technologies for IBS Common Message format implementation assessment and Engineering and technical management support.		
<b>INTELLIGENCE ANALYSIS SYSTEM (IAS)</b>		
FY05 SPAWAR, CHARLESTON, S.C. 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.		
FY06 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.		
FY07 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.		
<b>INTELLIGENCE SYSTEM READINESS (ISR)</b>		
FY 05 NAVY SYSTEMS MANAGEMENT ACTIVITY, (MTC Services Corporation, Stafford, VA) - Provide funding for engineering, testing, evaluation and training support. Naval Operation Other Than War Technology Center (NOOTW-TC), Dahlgren, VA - Provide funding for new technology initiatives.		
FY 06 NAVY SYSTEMS MANAGEMENT ACTIVITY, (MTC Services Corporation, Stafford, VA) - Continue to provides funding for engineering, testing, evaluation and training support.		
FY 07 NAVY SYSTEMS MANAGEMENT ACTIVITY, (MTC Services Corporation, Stafford, VA) - Continue to provides funding for engineering, testing, evaluation and training support.		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2272 Intelligence C2 Systems</b>
<b>TEAM PORTABLE COLLECTION SYSTEM - MULTI-PLATFORM CAPABLE (TPCS-MPC)</b>		
FY05 NSMA (MTC), Stafford, VA, Provide funds for program management and engineering support services MCSC, Quantico, VA, Provide payback funds to PG-10		
FY06 SPAWAR, CHARLESTON, S.C. Continue to provide funds for prime systems integrator for TPCS-MPC EDM. MCOTEA. Provide Operational testing of the TPCS-MPC Ground/Team system. NSMA (MTC), Stafford, VA, Continue to provide funds for program management and engineering support services		
FY07 SPAWAR, CHARLESTON, S.C. Continue to provide funds for prime systems integrator for TPCS-MPC EDM. MCOTEA. Provide Operational testing of the TPCS-MPC Ground/Team system. NSMA (MTC), Stafford, VA, Continue to provide funds for program management and engineering support services		
<b>GLOBAL COMMAND AND CONTROL SYSTEM INTEGRATED IMAGERY AND INTELLIGENCE (GCCS I3)</b>		
FY 05 MTC Services Corporation (MTC) Stafford, VA. Provide funds for Engineering and Program support services. Austin Information System (AIS), Austin, TX. Provide funds for System Integration & inoperability with US Army Intelligence System (ASAS), ASAS-Lite, etc. SPAWAR, CHARLESTON, SC. Provide Software Engineering support to include research, design, documentation and testing.		
FY 06 MTC Services Corporation (MTC) Stafford, VA. Continue to provide funds for Engineering and Program support services. Austin Information System (AIS), Austin, TX. Continue to provide funds for System Integration & inoperability with US Army Intelligence System (ASAS), ASAS-Lite, etc. SPAWAR, CHARLESTON, SC. Continue development, upgrades, integration, research and analysis for system refresh.		
FY 07 MTC Services Corporation (MTC) Stafford, VA. Continue to provide funds for Engineering and Program support services. Austin Information System (AIS), Austin, TX. Continue to provide funds for System Integration & inoperability with US Army Intelligence System (ASAS), ASAS-Lite, etc. SPAWAR, Charleston, SC. Continue development, upgrades, integration, research and analysis for system refresh.		
<b>TOPOGRAPHIC PRODUCTION CAPABILITY (TPC)</b>		
FY 05 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds to Northrop Grumman Information Technology, TASC, or integration and re-engineering support. Dec 04		
FY 06 MARCORSYSCOM, (MCSC), Quantico, VA Continue to provide funds to TBD for continues integration and re-engineering support in support of moderinzation and technology refresh. Dec 05		
FY 07 MARCORSYSCOM, (MCSC), Quantico, VA Continue to provide funds to TBD for continues integration and re-engineering support in support of moderinzation and technology refresh. Dec 06		
<b>JOINT SURVEILLANCE TARGET ATTACK RADAR (JSTARS)</b>		
FY 05 SPAWAR, Charleston, S.C. Provide funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities and Internet Protocol Version 6 (IPv6) research and development. MTC Services Corporation (MTC) Stafford, VA. Provide funds for Engineering and Program support services.		
FY 06 SPAWAR, Charleston, S.C. Continue to provide funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities and Internet Protocol Version 6 (IPv6) research and development.		
FY 07 SPAWAR, Charleston, S.C. Continue to provide funds for client software connectivity solution, future MTI, CDL, MTI sensor capabilities and Internet Protocol Version 6 (IPv6) research and development.		

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2272 Intelligence C2 Systems</b>
<b>JOINT SERVICE IMAGERY PROCESSING SYSTEM-TACTICAL EXPLOITATION GROUP (JSIPS-TEG)</b>		
FY05 SPAWAR, Charleston, SC. Provide funds for integration, engineering, program management and contractual support. ARMY SPACE PROGRAM OFFICE, Washington, DC. Classified contract. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), (MTC, Stafford, VA ), Provide funds for engineering & technical management support. MARCORSYSCOM, (MCSC), Quantico, VA (CEOSS) Provide funds for Program and technical support.		
FY06 SPAWAR, Charleston, SC. Continue to provide funds for integration, engineering, program management & contractual support. 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.		
FY07 SPAWAR, Charleston, SC. Continue to provide funds for integration, engineering, program management & contractual support. 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.		
<b>TACTICAL CONTROL AND ANALYSIS CENTER (TCAC)</b>		
FY 05 TITAN, Fairfax, VA. Provide funds to develop additional analytical tools, integrate software changes and migrate software baseline to COE 4.x and beyond. Integrate new hardware/software into existing systems.		
FY 06 TITAN, Fairfax, VA. Continue to provide funds to develop additional analytical tools, integrate software changes and migrate software baseline and beyond. Integrate new hardware/software into existing systems.		
FY 07 TITAN, Fairfax, VA. Continue to provide funds to develop additional analytical tools, integrate software changes and migrate software baseline and beyond. Integrate new hardware/software into existing systems.		
<b>TACTICAL REMOTE SENSOR SYSTEM (TRSS)</b>		
FY05 MARCORSYSCOM, Quantico, VA. Funds provided to CEOss for ALA and Engineering support to R&D efforts. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Funds provided for engineering and integration support to R&D efforts. AIR FORCE ELECTRONIC SYSTEMS CENTER (ESC), Hanscom AFB, MA. Funds provided for development of AADS hardware. NAVAL SURFACE WARFARE CENTER, Crane Division, Crane, IN. Funds provided for development of UGMS. NAVAIR, Patuxent River, MD. Funds provided for air certification of AADS. OCEAN SYSTEMS ENGINEERING CORP. (OSEC), San Diego, CA. Funds provided software development AADS and UGMS. MARCORSYSCOM (MCSC), Quantico, VA. Funds provided for development of Increment IV efforts.		
<b>TACTICAL REMOTE SENSOR SYSTEM (TRSS)</b>		
FY06 NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Funds provided for engineering and integration support to R&D efforts. MARCORSYSCOM, Quantico, VA. Funds provided to CEOss for ALA and Engineering support to R&D efforts. OCEAN SYSTEMS ENGINEERING CORP. (OSEC), San Diego, CA. Funds provided software development AADS and UGMS. MARCORSYSCOM (MCSC), Quantico, VA. Funds provided for development of Increment III efforts. MARCORSYSCOM, Quantico, VA. Funds provided for IOT&E of Increment III efforts. NAVY SYSTEMS MANAGEMENT ACTIVITY (NSMA), Crystal City, VA. Funds provided for engineering and integration support to R&D efforts. MARCORSYSCOM, Quantico, VA. Funds provided to CEOss for Engineering support to R&D efforts. OCEAN SYSTEMS ENGINEERING CORP. (OSEC), San Diego, CA. Funds provided for software development of Increment III efforts		

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N /BA-7 Operational Sys Dev	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0206313M Marine Corps Communication Systems	<b>PROJECT NUMBER AND NAME</b> C2272 Intelligence C2 Systems
<b>COUNTERINTELLIGENCE AND HUMAN INTELLIGENCE (HUMINT) EQUIPMENT PROGRAM (CIHEP)</b>		
<p>FY 05 ACTION SYSTEMS, Las Cruces, NM. Engineering, Integration and technical support for tech refresh and upgrade of program hardware and software.</p> <p>FY06 MARCORSYSCOM (MCSC), Quantico, VA. Continue to provide program management support for tech refresh and upgrade of program hardware and software. NSMA, MTC, Stafford, VA - Continue to provided for Pgm Mgmt support for tech refresh and upgrade of program hardware and software.</p> <p>FY 06 ACTION SYSTEMS, Las Cruces, NM. Continue to provide engineering, integration and technical support for tech refresh and upgrade of program hardware and software.</p> <p>FY07 MARCORSYSCOM (MCSC), Quantico, VA. Continue to provide program management support for tech refresh and upgrade of program hardware and software. NAVY SYSTEMS MANAGEMENT ACTIVITY, (MTC, Stafford, VA) - Continue to provided for Pgm Mgmt support for tech refresh and upgrade of program hardware and software. ACTION SYSTEMS, Las Cruces, NM. Continue to provide engineering, Integration and technical support for tech refresh and upgrade of program hardware and software.</p>		
<b>TROJAN SPIRIT</b>		
<p>FY06 U.S. Army Cerdec I2WD, Ft Monmouth, NJ - Continue to provide funds for P3I prototype, technical and Engineering support to include EOA, DT and OT.</p> <p>FY07 U.S. Army Cerdec I2WD, Ft Monmouth, NJ - Continue to provide funds for P3I prototype, technical and Engineering support.</p>		
<b>DCGS-I</b>		
<p>FY06 USAF 10.2 Contract. Research and development of DCGS Integrated Backbone (DIB) software and integration into Marine Corps legacy systems. Integrated Teams Solution Facility, Stafford, VA Engineering &amp; technical services, studies, analysis and evaluation for DIB integration, and integration support.</p> <p>FY07 USAF 10.2 Contract. Research and development of DIB software and integration into Marine Corps legacy systems. Integrated Teams Solution Facility, Stafford, VA Engineering &amp; technical services, studies, analysis and evaluation for DIB integration, and integration support.</p>		

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Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev		0206313M Marine Corps Communications Sys			C2272 Intelligence C2 Systems							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TENCAP	Various	Titan	14.066	3.481	12/04	3.799	12/05	3.983	12/06	Cont	Cont	
TENCAP	TBD	TBD	0.685	0.061	12/04	0.015	12/05	0.025	12/06	Cont	Cont	
TPCS	MPR	SPAWAR	4.263	0.000		0.000		1.500	11/06	Cont	Cont	
MSIDS	RCP	NSMA (MTC)	0.245	0.078	02/05	0.147	02/06	0.151	02/07	Cont	Cont	
CIHEP	RCP	Action Systems	0.127	0.107	02/05	0.028	11/05	0.020	11/06	Cont	Cont	
CIHEP	RCP	USAIMA	0.024	0.000		0.000		0.015	04/07	Cont	Cont	
CIHEP	RCP	NGIT	0.012	0.000		0.025	01/06	0.025	01/07	Cont	Cont	
CIHEP	RCP	MTC Service Corp	0.013	0.000		0.025	01/06	0.025	01/07	Cont	Cont	
CIHEP	RCP	MCSC	0.230	0.000		0.041	06/06	0.041	06/07	Cont	Cont	
TRSS-PIP	RCP	OSEC	1.192	0.000		0.000		1.250	01/07	0.000	2.442	
TRSS-PIP	MIPR	ESC	2.580	0.324	11/04	0.000		0.000		0.000	2.904	
TRSS-PIP	MIPR	NAVAIR	0.600	0.053	07/05	0.000		1.300	01/07	0.000	1.953	
TRSS-PIP	RCP	NSMA (MTC)	0.352	1.810	02/05	1.500	01/06	1.445	01/07	Cont	Cont	
TRSS-PIP	RCP	MCSC	0.042	3.161	01/05	3.436	01/06	0.705	01/07	0.000	7.344	
TRSS-PIP	RCP	MCSC (CEOss)	0.000	0.000	01/05	0.355	01/06	0.000		0.000	0.355	
TRSS-PIP	RCP	NPGS	0.000	0.051	03/05	0.000		0.000		0.000	0.051	
TRSS-PIP	MPR	NSWC	0.000	0.297	05/05	0.000		0.000		0.000	0.297	
TRSS-PIP	MPR	USMA	0.000	0.036	05/05	0.000		0.000		0.000	0.036	
TRSS-PIP	RCP	MCLB	0.000	0.021	03/05	0.000		0.000		0.000	0.021	
JSTARS	WR/MPR	SPAWAR	0.433	0.295	12/04	0.553	12/05	0.763	12/06	Cont	Cont	
JSTARS	RCP	MTC	0.304	0.389	01/05	0.000				0.000	0.693	
TROJAN SPIRIT	FFP	CERDEC	0.000	0.000		0.320	12/05	0.322	12/06	Cont	Cont	
DCGSI	RCP	NSMA (MTC)	0.000	0.000		1.080	12/05	0.985	12/06	Cont	Cont	
DCGSI	WR	USAF	0.000	0.000		4.629	11/05	2.960	11/06	Cont	Cont	
JSIPS - TEG	MPR	ASPO	1.331	1.540	02/05	0.892	02/06	1.323	02/07	Cont	Cont	
JSIPS - TEG	RCP	NSMA (MTC)	4.459	0.250	02/05	0.634	11/05	0.776	11/06	Cont	Cont	
JSIPS - TEG	MPR	SPAWAR	0.489	0.000		0.259	10/05	0.286	11/06	Cont	Cont	
JSIPS - TEG	RCP	MCSC (CEOss)	0.000	0.056	10/04	0.054	10/05	0.056	10/06	Cont	Cont	
<b>Subtotal Product Development</b>			<b>31.447</b>	<b>12.010</b>		<b>17.792</b>		<b>17.956</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												





Exhibit R-4/4a Schedule Profile/Detail

DATE:

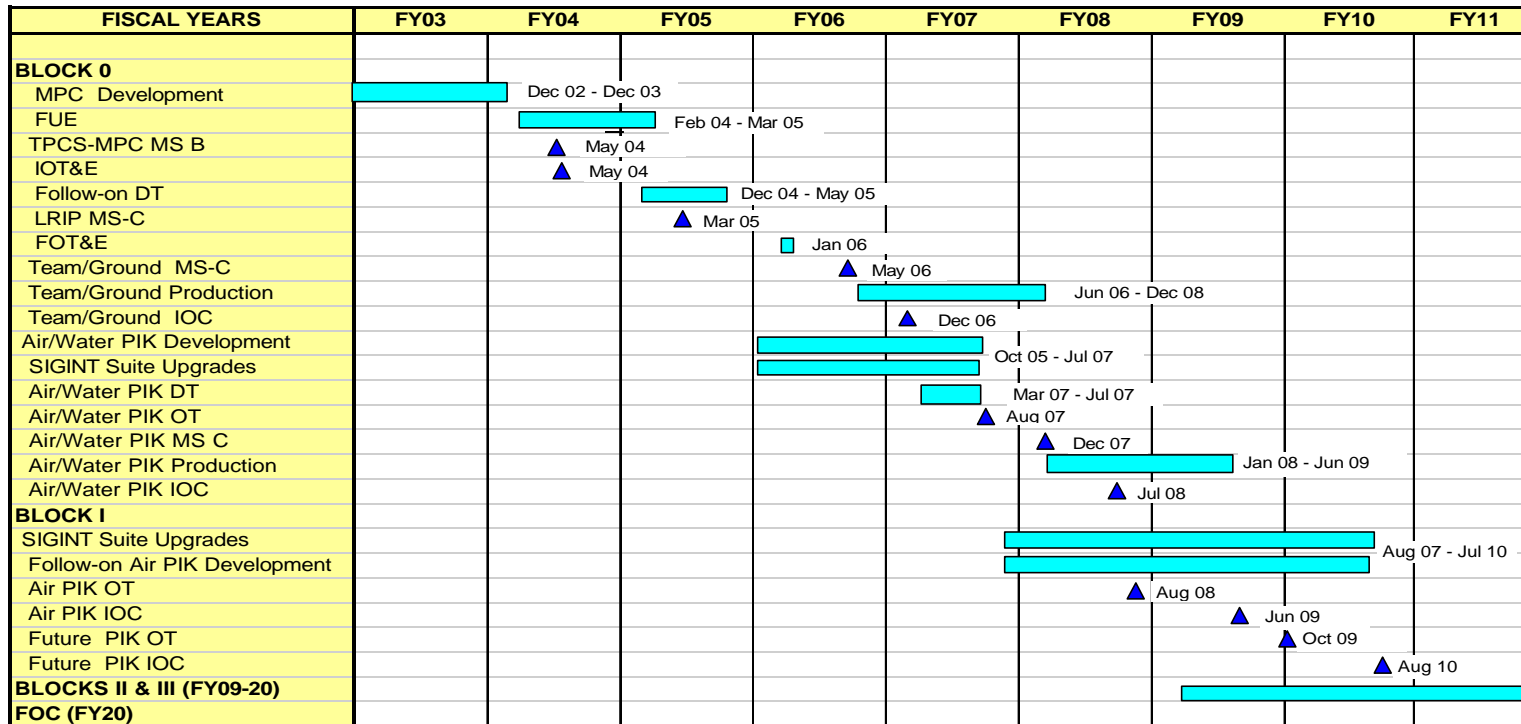
February 2006

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2272 Intelligence C2 Systems

TPCS



Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N

(U) PMC BLI 474700 Intel Suppo:TPCS

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	4.486	2.607	3.499	2.806	1.501	1.539	1.598	Cont	Cont
(U) PMC BLI 474700 Intel Suppo:TPCS	2.637	7.641	4.660	3.149	0.301	0.000	0.000	0.000	18.388

**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

**RDT&E, N /BA 7 Operational Sys Dev**

**0206313M Marine Corps Communications Sys**

**C2272 Intelligence C2 Systems**

<b>TPCS-MPC SCHEDULE DETAIL</b>	2004	2005	2006	2007	2008	2009	2010	2011
MS B EDM Dev and Demo	3Q							
DT/FUE	1Q----3Q							
IOT & E	3Q							
MS C LRIP		2Q						
FOT & E			2Q					
Team/Ground MS-C FRP			3Q					
Ground/Team PIK IOC				1Q				
Air/Water PIK OT					4Q			
Air/Water PIK MS C					1Q			
Air/Water PIK IOC						3Q		
AIR PIK OT					4Q			
AIR PIK IOC						3Q		
FUTURE PIK OT							1Q	
FUTURE PIK IOC								4Q
BLOCKS II & III						1Q		

Exhibit R-4/4a Schedule Profile/Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2272 Intelligence C2 Systems

TROJAN SPIRIT LITE

FISCAL YEARS	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10
<b>MILSTONES</b>										
P3I Increment 1	▲ ADM APR 01									
TROJAN LITE (7)		▲ Fielding Decision SEP 02								
<b>TROJAN LITE (8)</b>			▲ Fielding Decision AUG 03							
P3I Increment 2						▲ ADM OCT 05				
<b>PROCUREMENT</b>										
P3I Increment 1	▲ APR 01									
TROJAN LITE (7)		▲ JAN 02								
TROJAN LITE (8)			▲ JAN 03							
P3I Increment 2						▲	▲	▲	▲	▲
<b>FIELDING</b>										
P3I Increment 1 (includes X-			SEP 02 - APR 05							
TROJAN LITE (7)			SEP - OCT 02							
TROJAN LITE (8)			SEP 03 - MAY 04							
P3I Increment 2										
<b>IOC (TROJAN LITE)</b>			▲ SEP 02		▲ MAY 04					
<b>FOC (TROJAN LITE)</b>										

Line Item No. & Name (APPN, BLI #, NOMEN)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.000	0.420	0.422	0.424	0.425	0.426	0.428	Cont	Cont
(U) PMC BLI 463300 Radio Syster TROJAN LITE	0.962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.962
(U) PMC BLI 474700 Intell Suppo: TROJAN SPIRIT	0.000	7.300	3.094	4.011	0.656	0.108	0.113	Cont	Cont

**Exhibit R-4/4a Schedule Profile/Detail**

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2272 Intelligence C2 Systems</b>

<b>TROJAN SPIRIT</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
<b>MILESTONES</b>										
P31 Increment 1 Fielding Decision										
- TROJAN LITE (7) Fielding Decision	4Q									
- TROJAN LITE (8) Fielding Decision		4Q								
P31 Increment 2 Fielding Decision					1Q					
<b>PROCUREMENT</b>										
P31 Increment 1 Fielding Decision										
- TROJAN LITE (7) Fielding Decision	2Q									
- TROJAN LITE (8) Fielding Decision		2Q								
P31 Increment 2 Fielding Decision					1Q	-----	-----	-----	-----	1Q
<b>FIELDING</b>										
P31 Increment 1 Fielding Decision	4Q	-----	-----	-----3Q						
- TROJAN LITE (7) Fielding Decision	4Q	--1Q								
- TROJAN LITE (8) Fielding Decision		4Q	-----3Q							
P31 Increment 2 Fielding Decision					1Q	-----	-----	-----	-----	
IOC (TROJAN LITE)	4Q									
FOR (TROJAN LITE)			3Q							

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EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Sys</b>			PROJECT NUMBER AND NAME <b>C2273 Air Operations C2 Systems</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost		<b>108.891</b>	<b>86.065</b>	<b>47.341</b>	<b>34.693</b>	<b>20.968</b>	<b>23.008</b>	<b>26.375</b>
RDT&E Articles Qty								

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

(U) Air Operations C2 coordinates and plans Navy and Marine air combat operations and interfaces with joint and combined forces air operations. It also interfaces with fire support C2. The systems in this project are used to detect aircraft and missiles, process the detected information, deliver the processed information to the Advanced Tactical Air Command Central (ATACC), and conduct the air battle.

1. The Aviation Radar (AN/TPS-59(V)(3)) is a "congressionally mandated" national asset. It is the only fielded ground-based sensor which can detect and track long range Air Breathing Targets (ABT) within 300 nautical miles, as well as Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles for 60 degrees and up to one million feet in elevation. Highly Expeditionary Long Range Air Surveillance Radar (HELRASR) is the modernization initiative to replace the AN-TPS 59 Radar.
2. The Common Aviation Command and Control System (CAC2S) will provide a common baseline of equipment, computer hardware, and software required to perform the mission of the Marine Air Command and Control System (MACCS). CAC2S will provide a capability that allows operators to integrate Marine aviation into joint and combined air/ground operations.
3. The Composite Tracking Network (CTN), will provide the MAGTF Commander a ground based sensor netting solution that defends friendly forces from incoming aircraft and cruise missiles by correlating sensor measurement data (target position, speed, and heading) from local and remote radars in the Cooperative Engagement Capability (CEC) network. By providing accurate, composite, real-time surveillance tracks, CTN will improve air situational awareness and maximize the effectiveness of our surface launched anti-air weapons at extended ranges. Moreover, CTN lays the foundation for Integrated Fire Control (IFC).
4. The Critical Infrastructure will develop a new capability for video teleconferencing capability via service intranet capabilities.
5. The Joint Combat Identification Evaluation Team (JCIET) is a superb opportunity to conduct quality assurance testing of service's 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 Events (WTIs). 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.)
6. The MACCS Bridge Supplemental will provide the software development, non-recurring engineering, and testing and integration efforts in support of MACCS Commercial Off The Shelf refresh efforts.
7. 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).
8. "SIAP is the product of fused, common, continual, unambiguous tracks of airborne objects within the surveillance area." The Joint Single Integrated Air Picture (SIAP) Systems Engineer Organization (JSSEO) will identify the most effective and efficient means to achieve a SIAP that satisfies the warfighter needs. The JSSEO is not limited to just material solutions in this effort; all aspects will be considered to produce the SIAP, including tactics, techniques and pcedures and changes to Service operations.
9. 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 with Marine Aviation Weapons and Tactics School (MAWTS) and the Battlestaff Training Facility (BSTF) sharing a system.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Sys</b>	PROJECT NUMBER AND NAME <b>C2273 Air Operations C2 Systems</b>	
<p>10. The Unit Operations Center (UOC) project develops and transitions two Command and Control Imperative Advanced Technology Demonstration (ATDs) (the Expeditionary Integrated Combat Operations Center ) and the Joint Tactical Communications (JT COMMs) ATDs into various Marine Corps and Joint Engineering and Manufacturing Development (E&amp;MD) efforts. UOC development efforts focus on: Cognitive Task Analysis (CTA); enhanced ergonomic physical design; evaluation of advanced multimedia hardware, integration and networking with advanced development communication systems; and advanced software development to support systems integration and advanced battlefield visualization concepts. UOC developments are tailored to support transition of software and hardware developments as PIPs to the established MAGTF C4I baseline. Unit Operations Center (UOC) will provide a facility and components for the integration of current and planned battlefield</p> <p><b>Note:</b> Currently \$5.1M in FY05 is on the FY2005 Omnibus reprogramming (FY05-38PA). FY05 Supplemental Funding Received: \$3.7M</p>			
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.963</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>AN/TPS-59 Sustainment</b> : Develop Engineering Change Proposals for software improvements and Diminishing Manufacturing Sources issues.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.555</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>AN/TPS-59 Sustainment</b> : Development of Far Field radar Repeater to support system rebuilds at Barstow.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>4.037</b>	<b>4.382</b>	<b>3.985</b>
RDT&E Articles Qty			
<b>CAC2S:</b> Program management support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>23.378</b>	<b>10.284</b>	<b>10.502</b>
RDT&E Articles Qty			
<b>CAC2S:</b> SDD. Engineering Development Model (EDM) hardware and software development, design of host processing system, and conduct software integration of Joint mandated applications, developmental testing and evaluation and baseline stabilization.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>39.796</b>	<b>31.694</b>	<b>9.527</b>
RDT&E Articles Qty			
<b>CAC2S:</b> System development, GFE, and testing in accordance with continued sensor interface/integration, communications interface/interoperability development.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.050</b>	<b>0.289</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JCIET:</b> Logistics support for JCIET exercise. Funding for this program in FY07 and beyond is found in Project C2278 within this PE.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.500</b>	<b>1.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JCIET:</b> Data and analysis for exercise. Funding for this program in FY07 and beyond is found in Project C2278 within this PE.			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2273 Air Operations C2 Systems</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.559</b>	<b>0.025</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JCIET:</b> Program management support. Funding for this program in FY07 and beyond is found in Project C2278 with this PE.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.704</b>	<b>2.785</b>	<b>0.781</b>
RDT&E Articles Qty			
<b>CTN:</b> System and software development. Interface design development for CTN interfaces to Marine Air Command and Control System (MACCS) Family of Systems (FoS) - CAC2S, CLAWS and SLAMRAAM, and AN/TPS-59 and G/ATOR.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>2.629</b>	<b>3.541</b>	<b>0.757</b>
RDT&E Articles Qty			
<b>CTN:</b> Engineering Development Model (EDM) hardware and software development and support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.103</b>	<b>0.400</b>	<b>0.200</b>
RDT&E Articles Qty			
<b>CTN:</b> Testing and Evaluation: Developmental Testing. Operational assessment, and Interoperability Test and Evaluation (IOT&E) support. Certification of MACCS Family of Systems (FoS) interfaces.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.430</b>	<b>0.464</b>	<b>0.511</b>
RDT&E Articles Qty			
<b>CTN:</b> Program management support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.466</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>CRITICAL INFRASTRUCTURE:</b> VTC Coop Engineering.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>7.225</b>	<b>3.923</b>	<b>2.960</b>
RDT&E Articles Qty			
<b>MACCS SUSTAINMENT:</b> Hardware obsolescence upgrades for the TAOM, SAAWF, TIU, MCIU, ADCP, CIS and CDLS.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>2.959</b>	<b>4.063</b>	<b>1.795</b>
RDT&E Articles Qty			
<b>MACCS SUSTAINMENT:</b> Planned software sustainment for the TAOM, ADCP and CDLS.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>6.262</b>	<b>17.571</b>	<b>10.442</b>
RDT&E Articles Qty			
<b>SIAP:</b> Service System Engineering support to Joint SIAP System Engineering Organization.			



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2273 Air Operations C2 Systems</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.115</b>	<b>1.250</b>	<b>1.300</b>
RDT&E Articles Qty			
<b>SIAP:</b> Engineering and analysis for SIAP system engineer Support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.237</b>	<b>0.300</b>	<b>0.325</b>
RDT&E Articles Qty			
<b>TBMCS:</b> USMC TBMCS development.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.169</b>	<b>0.188</b>	<b>0.191</b>
RDT&E Articles Qty			
<b>TBMCS:</b> MCTSSA TBMCS software support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.200</b>	<b>0.214</b>	<b>0.225</b>
RDT&E Articles Qty			
<b>TBMCS:</b> Program management support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.075</b>	<b>0.075</b>	<b>0.077</b>
RDT&E Articles Qty			
<b>TBMCS:</b> Test and Evaluation for TBMCS Upgrades Joint Interoperability.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>5.100</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>UOC: Issue 71201 OMNIBUS effective 15 Aug 05</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>7.051</b>	<b>2.440</b>	<b>1.946</b>
RDT&E Articles Qty			
<b>UOC:</b> Continue engineering and manufacturing development effort of production representative modules.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.571</b>	<b>0.503</b>	<b>0.478</b>
RDT&E Articles Qty			
<b>UOC:</b> Program Management Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.757</b>	<b>0.674</b>	<b>1.339</b>
RDT&E Articles Qty			
<b>UOC:</b> Configuration analysis for CSSE, CE, and FICCS Unit Operations Centers to include UOC Universal Communications Interface Module (UCIM).			
<b>(U) Total \$</b>	<b><u>108.891</u></b>	<b><u>86.065</u></b>	<b><u>47.341</u></b>

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Sys</b>	PROJECT NUMBER AND NAME <b>C2273 Air Operations C2 Systems</b>							
<b>(U) PROJECT CHANGE SUMMARY:</b>	<b><u>FY2005</u></b>	<b><u>FY2006</u></b>	<b><u>FY2007</u></b>						
<b>(U) FY 2006 President's Budget:</b>	<b>93.339</b>	<b>87.444</b>	<b>48.374</b>						
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings	17.840		-1.351						
(U) SBIR/STTR Transfer	-2.217								
(U) Minor Affordability Adjustments	-0.071	-1.379	0.318						
<b>(U) FY 2007 President's Budget:</b>	<b>108.891</b>	<b>86.065</b>	<b>47.341</b>						
CHANGE SUMMARY EXPLANATION:									
(U) Funding: Includes a \$9.700 adjustment in FY05 to realign COBRA to the correct project. The UOC program has \$5.1M on external deferral in FY05 and \$3.7M from the FY05 Supplemental.									
(U) Schedule: Schedule changes have been reflected in exhibit R-4/4a, Schedule Profile/Detail for the UOC, CTN, CAC2S programs.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI #465000, AN/TPS-59	0.000	5.306	4.576	6.261	6.458	4.887	2.823	Cont	Cont
(U) PMC, BLI #465100, AN/TPS-59	27.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.277
(U) PMC, BLI #464000, Air Ops C2 Systems	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
(U) PMC, BLI #464000, CAC2S	0.000	3.708	35.531	38.790	57.879	37.007	38.023	Cont	Cont
(U) PMC, BLI #464000, CTN	0.000	0.000	0.000	6.565	17.840	24.596	27.930	Cont	Cont
(U) PMC, BLI #464000, MACCS	17.625	7.369	1.892	1.476	1.776	6.423	1.222	Cont	Cont
(U) PMC, BLI #464000, TBMCS	3.436	6.287	3.633	3.781	3.864	3.495	3.568	Cont	Cont
(U) PMC, BLI #419000, UOC	180.253	0.902	7.574	2.088	8.608	8.998	9.451	Cont	Cont

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N /BA-7 Operational Sys Dev

PROGRAM ELEMENT NUMBER AND NAME

0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME

C2273 Air Operations C2 Systems

## (U) D. ACQUISITION STRATEGY:

(U) **AN/TPS-59 Radar:** The Program Office intends to address Diminishing Manufacturing Sources (DMS) issues by continuing with the Post Production Support Program (PPSP) started in POM 02 initiative, and they will also begin R&D efforts that will modernize the radar with advanced technology and performance capabilities. A Business Case Analysis (BCA) was completed which incorporated two independent obsolescence/DMS studies that identified critical components which will severely impact the system performance and readiness by FY07. Based upon the BCA, the program office intends to sustain 8 of the 11 systems. The refurbishing and sustaining of 8 systems will enable 3 active units (2 per MEF), and 1 reserve unit to have a system with current technology, extend system life cycle and lower the radars' overall operating cost. The remaining 3 systems will transition during the modernization effort.

(U) **CAC2S:** The Systems Development and Demonstration (SDD) phase was implemented after the successful completion of the established Program Definition Risk Reduction (PDRR) phase exit criteria. The SDD phase includes the development and verification of the engineering development model representative of the basic common communications, sensor interface and processing, and display components. The SDD contract contains options for the Production and Deployment Phase (Phased Pricing Fixed Fee). The Production Phase will rely on available commercial items and other equipment meeting the open systems architecture requirement.

(U) **CRITICAL INFRASTRUCTURE:** The program will be executed under Government Works contract by evaluating proposals that will be compatible with Defense Video Services-Global (DVS-G) and service programs.

(U) **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, 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).

(U) **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.

(U) **SIAP** is a systems engineering effort that will be utilized to reduce risk and increase interoperability for legacy and future C4ISR systems.

(U) **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 cost plus fixed fee contract.

(U) **UOC:** The UOC Combat Operations Center (COC) is a Competitively Awarded Contract for design (cost type) and Firm Fixed Price production options.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Sys</b>	PROJECT NUMBER AND NAME <b>C2273 Air Operations C2 Systems</b>
<p><b>(U) E. Major Performers:</b></p> <p><b>UNIT OPERATIONS CENTER (UOC)</b></p> <p>FY05 - FY07 General Dynamics Decision Systems, Scottsdale AZ. System development, demonstration, integration, test and evaluation. Apr 04.</p> <p>FY05 - FY07 SPAWAR, Charleston SC. Support Services. Jan 05</p> <p><b>COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S)</b></p> <p>FY05 - FY07 Raytheon E-Systems, San Diego, CA. System development, demonstration, integration, test and evaluation. May 04.</p> <p><b>COMPOSITE TRACKING NETWORK (CTN)</b></p> <p>FY05 - FY07 NSWG Crane, IN. Mobility platform integrator. Jan 04</p> <p>FY05-FY07 Lockheed Martin, Syracuse NY. Radar integration. Jan 04</p> <p>FY05-FY07 Science Applications International Corporation, St. Petersburg, FL. Terminal and antenna design and development. Jan 04</p> <p>FY05-FY07 Raytheon Corporation, St Petersburg, FL. Interface design and development. Jan 04</p> <p><b>CRITICAL INFRASTRUCTURE</b></p> <p>FY05 SPAWAR, Charleston SC. Product Development. Mar 03.</p> <p><b>MACCS SUSTAINMENT</b></p> <p>FY05 - FY07 Northrop Grumman Electronic Systems, Woodland Hills, CA. TAOC Engineering and CETS services. Jan 04</p> <p>FY05 - FY06 Mission Research Corporation, Fort Worth, TX. CDLS Engineering and Software services. May 04</p> <p>FY05 - FY07 Carisle Research Incorporated, Van Nuys, CA. TAOM Software Sustainment services. Oct 03</p> <p>FY05 - FY06 Naval Surface Warfare Center, Crane, IN. ADCP, CIS, DASCAS, CDLS Engineering services. Oct 03</p> <p><b>SINGLE INTEGRATED AIR PICTURE (SIAP)</b></p> <p>FY05 - FY07 RNB Technologies, Inc., Stafford, VA Engineering services. Jan 04</p> <p><b>AN/TPS-59 SUSTAINMENT</b></p> <p>FY05 Lockheed Martin Corp., Syracuse, NY. Develop ECPs for software improvements and DMS issues. Mar 05.</p> <p>FY05 Contractor TBD. Develop Far Field Radar Repeater to support system rebuilds at Barstow. Jun 05.</p>		

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Exhibit R-3 Cost Analysis					DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communi		C2273 Air Operations C2 Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AN/TPS-59 SUSTAINMENT	C/CPFF	Lockheed Martin, NY	0.000	2.518	07/05					0.000	2.518	
CAC2S	RCP	Raytheon, San Diego, CA	63.647	54.595	07/05	23.719	02/06	20.679	01/07	Cont	Cont	
CAC2S	WR	SPAWAR	47.824	2.482	01/05	0.300	01/06	0.300	01/07	Cont	Cont	
CAC2S	WR	Center	2.320			0.600	01/06	0.520	01/07	Cont	Cont	
CAC2S	MIPR	Redstone Arsenal	0.000	1.147	07/05					0.000	1.147	
MACCS SUSTAINMENT	RCP	NGES, Woodland Hills, CA	2.127	4.111	01/05	1.986	01/06			0.000	8.224	
MACCS SUSTAINMENT	CPFF	CRL, Van Nuys, CA	0.000	2.693	05/05	2.800	01/06	0.905	01/07	Cont	Cont	
SIAP	RCP	MCSC, Quantico, VA	15.791	7.377	01/05	18.821	01/06	11.742	01/07	Cont	Cont	
TBMCS	MIPR	ESC, Hanscom AFB	0.723			0.300	01/06	0.325	01/07	Cont	Cont	
TBMCS	MIPR	Greater Hampton, VA	0.000	0.100	11/04					0.000	0.100	
CTN	WR	NSWC, Crane, IN	3.106	0.410	10/04	1.406	01/06	0.586	01/07	Cont	Cont	
CTN	RCP	Raytheon Col, FL	1.490			0.275	01/06			0.000	1.765	
CTN	RCP	SAIC, San Diego, CA	2.478	3.000	02/05	4.624	01/06	0.547	01/07	Cont	Cont	
CTN	WR	NSWC, Crane, IN	0.000	0.080						0.000	0.080	
UOC	WR	SPAWAR	4.897	0.500	07/05	1.012	02/06	0.790	01/07	Cont	Cont	
UOC	RCP	General Dynamics	8.623	7.163	01/05	2.101	02/06	2.565	01/07	Cont	Cont	
CRITICAL INFRASTRUCTURE	WR	SSC Charleston	2.474	1.466	05/05					0.000	3.940	
<b>Subtotal Product Development</b>			<b>155.500</b>	<b>87.642</b>		<b>57.944</b>		<b>38.959</b>		<b>Cont</b>	<b>Cont</b>	

**Note:** Currently \$5.1M in FY05 is on the FY2005 Omnibus reprogramming (FY05-38PA). FY05 Supplemental Funding Received: \$3.7M

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CAC2S	WR	MCSC, Quantico, VA	0.860	0.174	01/05	0.336	01/06	0.280	01/07	Cont	Cont	
CAC2S	WR	MCSC, Quantico, VA	1.624	0.246	01/05	1.000	02/06	1.000	02/07	Cont	Cont	
CAC2S	WR	MCTSSA, CPndltN,CA	0.000			0.050	01/06	0.035	01/07	Cont	Cont	
CAC2S	WR	NSWC, Crane, IN	0.600	0.225	01/05	0.210	01/06	0.200	01/07	Cont	Cont	
CAC2S	WR	JITC	0.080	0.127	01/05	0.150	01/06			0.000	0.357	
CAC2S	RCP	Raytheon, Bedford, MA	0.000	1.659	01/05	1.835	01/06			0.000	3.494	
CAC2S	MIPR	GSA, Alexandria, VA	0.000	0.146	04/05					0.000	0.146	
JCIET	WR	MCSC, Quantico, VA	0.121	0.189	10/04	0.190	01/06			0.000	0.500	
JCIET	WR	NSWC, Crane, IN	0.319	0.100	08/05	0.325	01/06			0.000	0.744	
JCIET	RCP	Anteon, Stafford, VA	0.753	0.800	10/04	0.799	01/06			0.000	2.352	
JCIET	RCP	CACI, Chantilly, VA	0.000	0.020	11/04	0.000				0.000	0.020	
MACCS Sustainment	WR	NGES, Woodland Hills, CA	0.000	2.308	07/05	2.540	02/06	3.070	03/06	Cont	Cont	
MACCS Sustainment	RCP	MRC, Ft Worth, TX	0.000	0.300	07/05					0.000	0.300	
MACCS Sustainment	WR	Hill AFB, Utah	0.000	0.153	10/04	0.160	01/06	0.180	01/07	Cont	Cont	
MACCS Sustainment	WR	NSWC, Crane, IN	0.000	0.619	10/04	0.500	02/06	0.600	01/07	Cont	Cont	
TBMCS	WR	MCTSSA, CPndltN,CA	0.083			0.030	01/05	0.032	01/07	Cont	Cont	
TBMCS	WR	NSWC, Crane, IN	0.050	0.090	01/05	0.105	01/06	0.105	01/07	Cont	Cont	

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Exhibit R-3 Cost Analysis		DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communi	C2273 Air Operations C2 Systems	

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Support (Cont.)												
TBMCS	WR	MCSC, Quantico, VA	0.055	0.111	09/05	0.053	01/06	0.054	01/07	Cont	Cont	
CTN	WR	CG 1st MAW	0.014					0.018	01/07	Cont	Cont	
CTN	WR	NAWC, Pax	0.000	0.060	10/04					0.000	0.060	
CTN	RCP	Booze Allen	0.000	0.110	04/05					0.000	0.110	
CTN	WR	MCSC, Quantico, VA	0.085	0.010	01/05	0.040	01/06	0.045	01/07	Cont	Cont	
CTN	MIPR	Anteon,	0.100	0.055	01/05	0.121	01/06	0.133	01/07	Cont	Cont	
<b>Subtotal Support</b>			<b>4.744</b>	<b>7.502</b>		<b>8.444</b>		<b>5.752</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CTN	WR	MCTSSA, CPndlt, CA	0.003			0.018	01/06	0.021	01/07	Cont	Cont	
CTN	WR	MACS-24	0.087			0.018	01/06	0.021	01/07	Cont	Cont	
CTN		MCOTEA TESTING	0.081			0.264	01/06	0.352	01/07	Cont	Cont	
CTN	WR	NWAS, Corona, CA	0.494					0.030	01/07	Cont	Cont	
CTN	RCP	Lockheed Martin	0.000	0.464	05/05					0.000	0.464	
CTN	RCP	MITRE, Bedford, MA	0.000					0.030	01/07	Cont	Cont	
CAC2S	RCP	CECOM (MCOTEA)	0.013	0.400	01/05	13.840	03/06	1.000	02/07	Cont	Cont	
CAC2S	MIPR	WSMR NM	0.000	0.414	04/05					0.000	0.414	
CAC2S	WR	NSWC, Crane, IN	0.000	0.320	02/05					0.000	0.320	
TBMCS	WR	NSWC, Crane, IN	0.100			0.075	01/06	0.077	01/07	Cont	Cont	
UOC		MCOTEA TESTING	0.000	0.500						Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>0.778</b>	<b>2.098</b>		<b>14.215</b>		<b>1.531</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TBMCS	CPFF	NGIT, Stafford, VA	0.519	0.380	09/05	0.214	01/06	0.225	01/07	Cont	Cont	
CAC2S	IDIQ	NGIT, Stafford, VA	9.774	4.176	01/05	3.200	02/06			0.000	17.150	
CAC2S	RCP	MITRETEK	1.146	1.100	07/05	1.120	01/06			0.000	3.366	
CTN	IDIQ	NGIT, Stafford, VA	0.879	0.757	07/05	0.424	01/06	0.466	01/07	Cont	Cont	
UOC	IDIQ	NGIT, Stafford, VA	3.396	0.136	01/05	0.504	01/06	0.408	01/07	Cont	Cont	
<b>Subtotal Management</b>			<b>15.714</b>	<b>6.549</b>		<b>5.462</b>		<b>1.099</b>		<b>Cont</b>	<b>Cont</b>	

Remarks: Issue 71201 OMNIBUS effective 15 Aug 05

<b>Total Cost</b>			<b>176.736</b>	<b>108.891</b>		<b>86.065</b>		<b>47.341</b>		<b>Cont</b>	<b>Cont</b>	
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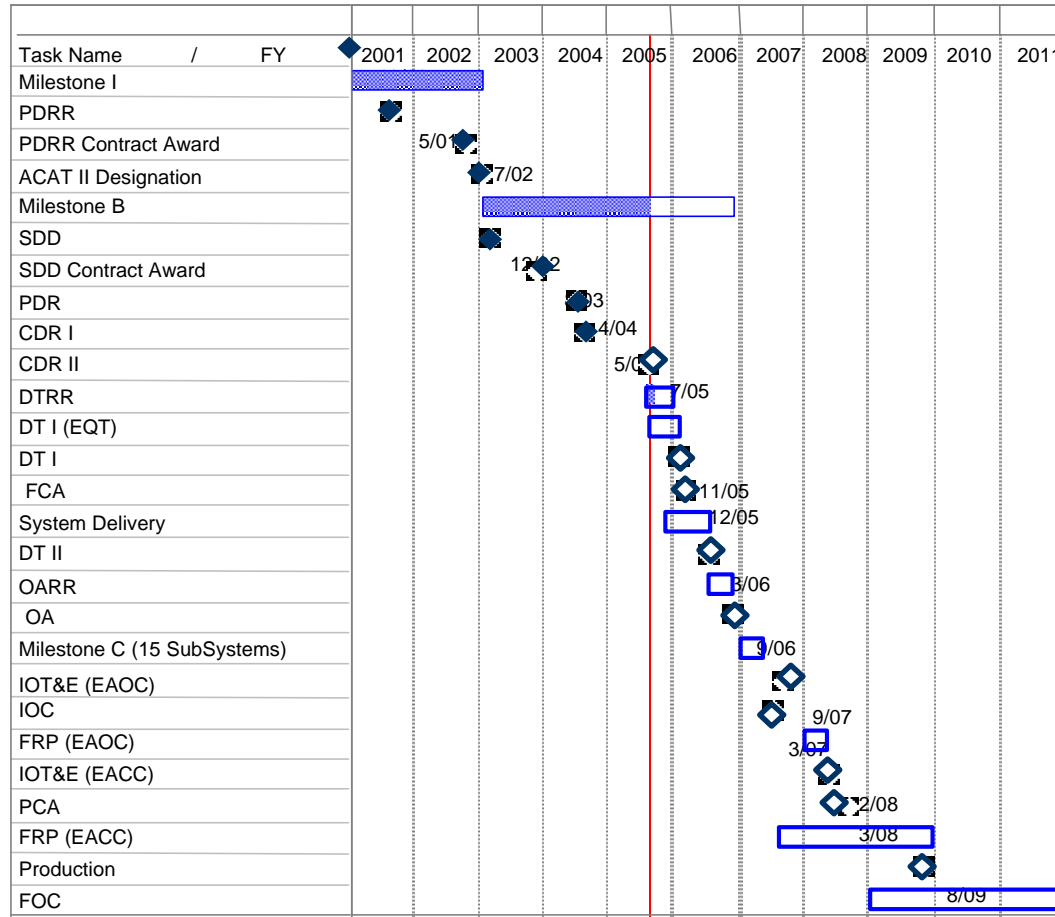
Exhibit R-4/4a Schedule Profile/Detail

DATE: February 2006

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

PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2273 Air Operations C2 Systems



CAC2S Follow-On Incr

**Program Funding Summary**  
(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N, C2273, CAC2S	67.211	46.360	24.014	18.827	6.966	0.334	0.000	Cont	Cont
(U) PMC, BLI #464000, CAC2S	0.000	3.708	35.531	38.790	57.879	37.007	38.023	Cont	Cont

**Exhibit R-4/4a Schedule Profile/Detail**

DATE: February 2006

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

PROGRAM ELEMENT  
**0206313M Marine Corps Communications Sys**

PROJECT NUMBER AND NAME  
**C2273 Air Operations C2 Systems**

<b>CAC2S SCHEDULE DETAIL</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone I (FY01)									
Milestone B	1st Qtr								
PDRR (FY01 - FY12)									
SDD	1Q+++++4Q								
DT			4th Qtr						
OT				3rd Qtr					
Long Lead Items				3rd Qtr					
Milestone C				4th Qtr					
Production					1st Qtr+++++				
IOC					2nd Qtr				
FOC						4th Qtr			



Exhibit R-4/4a Schedule Profile/Detail

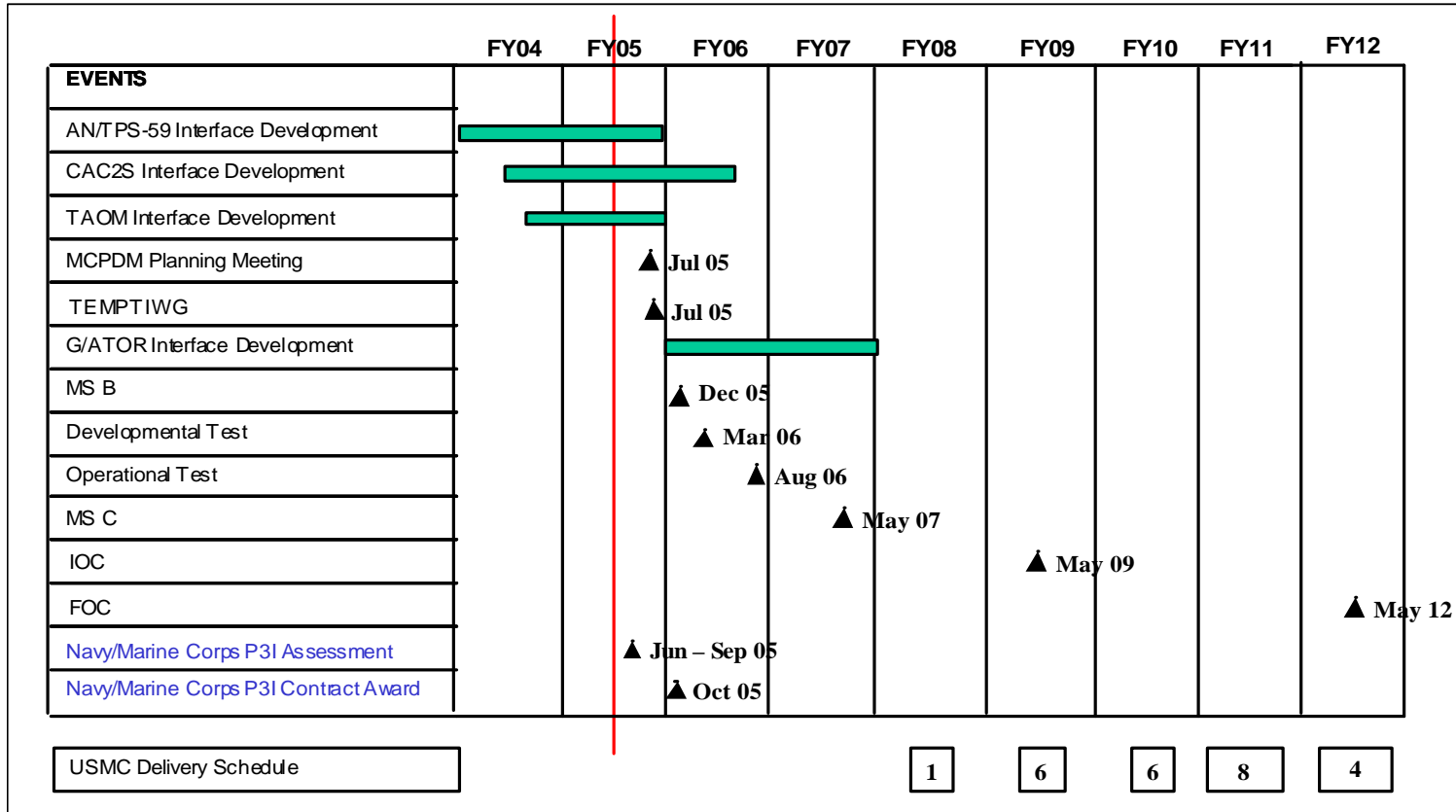
DATE: February 2006

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

PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2273 Air Operations C2 Systems

CTN



**Program Funding Summary**

(APPN, BLI #)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N, C2273, CTN (formally CEC)	4.866	7.190	2.249	6.300	7.872	19.413	23.336	Cont	Cont
(U) PMC, BLI #464000, CTN	0.000	0.000	0.000	6.565	17.840	24.596	27.930	Cont	Cont

**Exhibit R-4/4a Schedule Profile/Detail**

DATE: February 2006

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

PROGRAM ELEMENT  
**0206313M Marine Corps Communications Sys**

PROJECT NUMBER AND NAME  
**C2273 Air Operations C2 Systems**

<b>CTN SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Milestone A (1st Qtr FY02)							
Concept & Technology Development							
Milestone B			1st Qtr				
System Development and Demonstration							
DT			2nd Qtr				
IOT&E			4th Qtr				
Milestone C				3rd Qtr			
Production				4th Qtr*****			
Delivery					3rd Qtr*****		
IOC						3rd Qtr	

Exhibit R-4/4a Schedule Profile/Detail

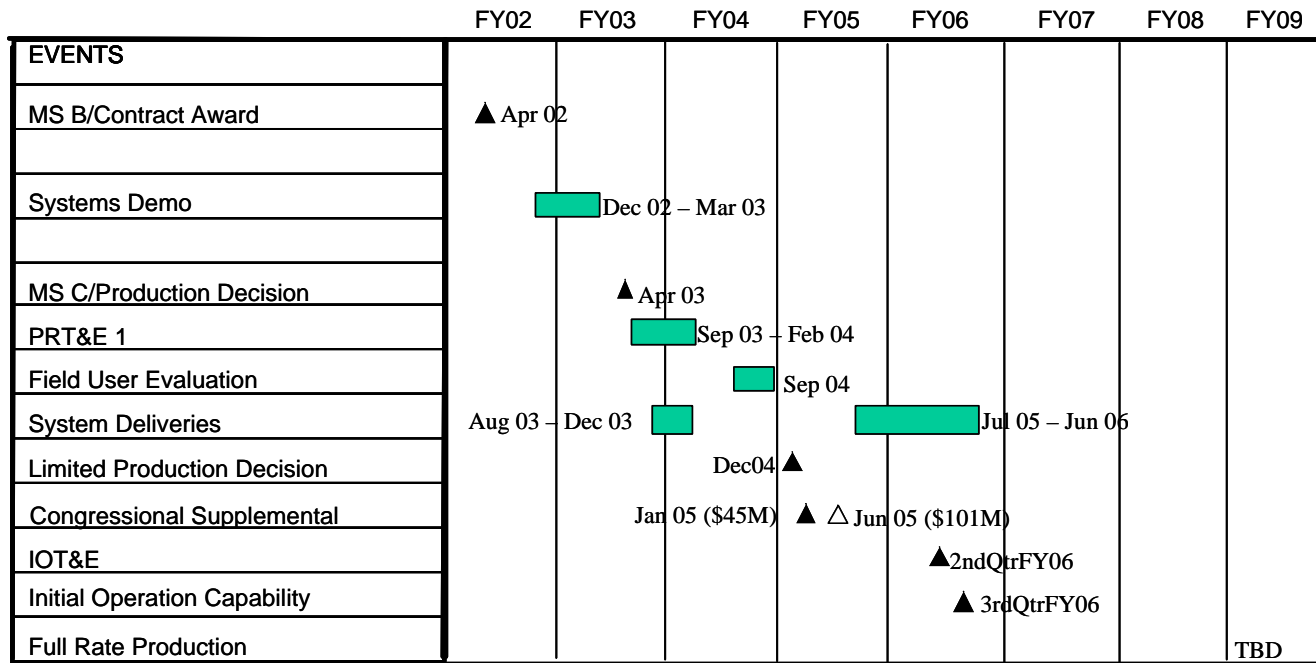
DATE: February 2006

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

PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2273 Air Operations C2 Systems

# UOC Program Schedule



**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N, C2273, UOC	13.479	3.617	3.763	2.645	1.446	1.087	1.146	Cont	Cont
(U) PMC, BLI #419000, UOC	180.253	0.902	7.574	2.088	8.608	8.998	9.451	Cont	Cont

**Exhibit R-4/4a Schedule Profile/Detail**

DATE: February 2006

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

PROGRAM ELEMENT  
**0206313M Marine Corps Communications Sys**

PROJECT NUMBER AND NAME  
**C2273 Air Operations C2 Systems**

<b>UOC SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B (2nd Qtr FY 02)								
System Development and Demonstration	2nd Qtr							
IOT&E			2nd Qtr					
Milestone C	3rd Qtr							
LRIP Deliveries	2nd Qtr							
IOC			3rd Qtr					
Full Rate Production						TBD		
Production Deliveries			3rd Qtr+++++					
Hardware/Software Development		3rd Qtr +++++						
Engineering Support Services		3rd Qtr +++++						

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>			<b>C2274 Command &amp; Control Warfare Systems</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>14.937</b>	<b>5.896</b>	<b>3.847</b>	<b>3.616</b>	<b>4.189</b>	<b>4.720</b>	<b>3.734</b>	
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(U) Command and Control (C2) Warfare Project includes the following tactical electronic intercept, direction finding, and electronic attack systems:</p> <p><b>Tactical Electronic Reconnaissance Processing and Evaluation System (TERPES)</b> is used to process, sort, analyze, display and correlate electronic surveillance and electronic attack data collected by EA-6B aircraft and maintains the Tactical Electronic Orders of Battle.</p> <p><b>Mobile Electronic Warfare Support System, Product Improvement Program (MEWSS-PIP)</b> will be used to collect and process communication and non-communication signals and provide electronic attack capability from a mobile ground platform.</p> <p><b>Radio Reconnaissance Equipment Program (RREP)</b> provides the Radio Battalions, Radio Reconnaissance Platoons (RRP) with mission unique Signals Intelligence/Ground Electronic Warfare (SIGINT/EW) Equipment suites. Continuing with an evolutionary acquisition approach, the third suite RREP-SS-2 will provide the RRP with the capability to conduct SIGINT/EW operations in support of Marine Air Ground Task Force (MAGTF) Commanders during advance force special operations, and other special purpose missions where the use of conventional Radio Battalion assets are not feasible. RREP-SS-2 is a ruggedized, modular; man packable system specifically designed utilizing emerging NDI/COTS/GOTS technology for RRP operations, particularly those conducted under the most austere conditions. The RREP SS-3 will be fielded in the 4th Qtr FY04. It will have the added capability to intercept advanced wireless targets identified by the NSA to be operated from remoted positions. SS-3 will extend its life cycle to six years and product improvements will focus on new software and DSP technologies which may be incorporated into the existing system. This approach allows the program to utilize the major components for the entire life-cycle while still keeping pace with emerging Threats and technologies.</p> <p><b>Communication Emmitter Sensing and Attacking System (CESAS)/(FLAMES)</b> a system of COTS/GOTS designed to support the MAGTF Commander in conducting operations. It provides the capability to effectively sense/detect and attack, through the use of electromagnetic energy, the enemy's communication systems in support of the Commander's Command and Control Warfare plan. The system will replace for the existing AN/ULQ-19 and will assume the mission of sensing and denying the enemy the use of the electromagnetic spectrum, thereby disrupting his command and control system. Though primarily HMMWV-mounted, CESAS will also be capable of both seaborne and airborne deployment and employment, enhancing the Radio Battalion's ability to support Expeditionary Maneuver Warfare. The CESAS operate within the bandwidth of 20 to 1500 MHz (Threshold) 2MHz to 2500 MHz (Objective) against enemy emitters that use modern modulation schemes.</p>								
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM</b>								
COST (\$ in Millions)	FY 2005		FY 2006		FY 2007			
Accomplishment/Effort Subtotal Cost	align="right"> <b>2.794</b>		align="right"> <b>0.030</b>		align="right"> <b>0.000</b>			
RDT&E Articles Qty								
CESAS - Perform integration efforts of AN/USQ-146(V) 5 and Spiral Development.								
COST (\$ in Millions)	FY 2005		FY 2006		FY 2007			
Accomplishment/Effort Subtotal Cost	align="right"> <b>0.900</b>		align="right"> <b>0.250</b>		align="right"> <b>0.080</b>			
RDT&E Articles Qty								
CESAS - Research and Development Directed Energy and Directional Attack Antennas.								

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification		DATE:		
		February 2006		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2274 Command &amp; Control Warfare Systems</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.700</b>	<b>0.400</b>	<b>0.500</b>
RDT&E Articles Qty				
CESAS - Research and Development of techniques, tactics and procedures.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.395</b>	<b>0.650</b>	<b>0.250</b>
RDT&E Articles Qty				
CESAS - MCOTEA Testing Support				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.880</b>	<b>0.174</b>	<b>0.196</b>
RDT&E Articles Qty				
CESAS - Testing for CESAS and Radio Threads				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.520</b>	<b>0.030</b>	<b>0.023</b>
RDT&E Articles Qty				
CESAS - Program Management Support.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.808</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
CESAS - TTP Development and Operational Analysis.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.060</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
MEWSS PIP: System software enhancements and Pre-Planned Product Improvement (P3I).				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
MEWSS PIP: ELINT System enhancements.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.300</b>	<b>0.461</b>	<b>0.000</b>
RDT&E Articles Qty				
MEWSS PIP: Operational Readiness enhancements.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.113</b>	<b>1.200</b>	<b>0.722</b>
RDT&E Articles Qty				
TERPES: Research for TERPES software applications, hardware and software integration research, investment for R&D equipment and facilities; work to integrate the newer integrated broadcast receivers (IBR)s and Joint Tactical Terminal (JTT).				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2274 Command &amp; Control Warfare Systems</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.510</b>	<b>1.945</b>	<b>1.050</b>
RDT&E Articles Qty				
<b>TERPES:</b> Research TERPES software to provide improvements in the interfaces and interoperability with the EA-6B Improved Capabilities (ICAP) II and III aircraft, (TEPP/TSP application); improve overall system performance (Tactical Data Correlation).				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.336</b>	<b>0.362</b>	<b>0.252</b>
RDT&E Articles Qty				
<b>TERPES:</b> Program Management Support.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.102</b>	<b>0.394</b>	<b>0.774</b>
RDT&E Articles Qty				
<b>RREP:</b> Research and development of the RREP SS-3 PIP to include integration of EA.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.171</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>RREP:</b> MCOTEA, Development Testing.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>3.348</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>Next Generation Mobile Elect:</b> MCOTEA, Development Testing.				
<b>(U) Total \$</b>		<b><u>14.937</u></b>	<b><u>5.896</u></b>	<b><u>3.847</u></b>
<b>(U) PROJECT CHANGE SUMMARY:</b>		<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
<b>(U) FY 2006 President's Budget:</b>		<b>11.358</b>	<b>5.989</b>	<b>3.829</b>
<b>(U) Adjustments from the President's Budget:</b>				
(U) Congressional/OSD Program Reductions				
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings		3.585		
(U) SBIR/STTR Transfer				
(U) Minor Affordability Adjustments		-0.006	-0.093	0.018
<b>(U) FY 2007 President's Budget:</b>		<b>14.937</b>	<b>5.896</b>	<b>3.847</b>
<b>CHANGE SUMMARY EXPLANATION:</b>				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2274 Command & Control Warfare Systems								
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>To Compl</b>	<b>Total Cost</b>	
(U) PMC BLI 463600 Modification Kits MEWSS	2.665	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.665
(U) PMC BLI 465200 Modification Kits MEWSS	0.000	1.332	0.209	0.000	0.000	0.000	0.000	0.000	0.000	1.541
(U) PMC BLI 474700 Intell Suppt Eq RREP	1.940	3.992	3.816	1.019	5.191	0.100	1.294	0.000	0.000	17.352
(U) PMC BLI 474900 Mod Kits INTEL TERPES	0.820	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.82
(U) PMC BLI 465200 Mod Kit TERPES	0.000	2.982	0.000	3.182	0.000	0.000	0.000	0.000	0.000	6.164
(U) PMC BLI 463600 FLAMES (CESAS)	2.642	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.642
(U) PMC BLI 465200 Mod Kit FLAMES (CESAS)	0.000	5.315	4.421	0.149	1.356	0.000	0.000	0.000	0.000	11.241
<b>(U) Related RDT&amp;E:</b>										
(U) (U) PE 0305885G (Tactical Cryptologic Program)										
<b>(U) D. ACQUISITION STRATEGY:</b>										
<p><b>TERPES:</b> The acquisition of components for the TERPES upgrade refreshes will maximize the use of existing equipment, NDI/COTS/GOTS/GFE equipment and software. The integration effort for TERPES hardware and software will be accomplished through the TERPES System Support Activity, Naval Air Warfare Center - Weapons Division, Pt. Mugu, CA. These efforts are directed by the Program Manager for Intelligence Systems, MAGTF C4ISR Product Group, Marine Corps Systems Command. This strategy accomplishes several goals: standardization of equipment and software; use equipment that can be acquired and fielded quickly, reduction of logistics requirements, and reduce cost of software maintenance.</p>										
<p><b>MEWSS PIP:</b> The MEWSS PIP provides an Electronic Warfare support system that leverages from the Army CECOM Intelligence Electronic Warfare Common Sensor (IEWCS) program. Developmental and fielding efforts of the block upgrades focus on incorporating technology enhancements into the fielded system and providing specified block capabilities to the fleet as they become available. The MEWSS PIP leverages, when available COTS/GOTS/NDI solutions to obsolescence, operational readiness and supportability.</p>										
<p><b>RREP:</b> The RREP will incorporate and integrate cutting edge technologies through the use of Commercial off the Shelf (COTS) components to include Marine Corps Common Hardware components and Government off the Shelf (GOTS) DII COE compliant software. Contract is Cost Plus Fixed Fee (CPFF).</p>										
<p><b>CESAS:</b> Acceleration of the CESAS effort and designation of CESAS as a Program of Record was undertaken as part of the Defense Emergency Response Funding initiative (DERF). Funds were applied to the program in FY-2 and together with FY03 DERF funds, an initial AN/ULQ-19 replacement capability was provided to the fleet in the Feb 04 for filed user evaluation purposes. Three (3) AN/USQ-146(V) 3 units were procured from Rockwell Collins and integrated into the HMMWV platforms. SSCC performed the integration effort. Two (2) prototypes were used for DT in Aug 03 with assistance from MCOTEA. OA was conducted in Dec 03 with a success rate. Upon completion of OA, SSCC incorporated ECP and modifications identified during OA in the prototype units. Two (2) prototypes were provided to 3rd RADBN in Feb 04 for FUE, production will begin in FY05 meeting the IOC and FOC in FY07.</p>										



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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Sys</b>	PROJECT NUMBER AND NAME <b>C2274 Command &amp; Control Warfare Systems</b>
<b>(U) E. MAJOR PERFORMERS:</b>		
<b>MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM, PRODUCT IMPROVEMENT PROGRAM (MEWSS-PIP)</b>		
FY05 LOCKHEED MARTIN, Owego NY Provide funds for software enhancements and P3I support. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Legacy MEWSS readiness enhancements. NSMA, MTC, Stafford, VA. Provide funding for system engineering and program management support. SPAWAR, Charleston, SC. Provide funding for block upgrade research, development, and integration efforts.		
FY06 LOCKHEED MARTIN, Owego NY Continue to provide funds for software enhancements and P3I support. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Legacy MEWSS readiness enhancements. NSMA, MTC, Stafford, VA. Continue to provide funding for system engineering and program management support. SPAWAR, Charleston, SC. Continue to provide funding for block upgrade research, development, and integration efforts.		
<b>TACTICAL ELECTRONIC RECONNAISSANCE PROCESSING AND EVALUATION (TERPES)</b>		
FY05 NAVAL AIR WARFARE CENTER (NAWC), Pt Mugu CA. Provide funds for hardware, software and integration research. LOCKHEED MARTIN, Denver CO. Provide funds for research on TERPES software applications to provide improvement in the interfaces and interoperability with the EA-6B and mission planning systems. MARCORSYSCOM, (GEOSS), Titan Corporation, Reston, VA. Provide funds for software integration and testing. NSMA, (MTC), ITsFAC, Stafford, VA. Provide integration facility and program management support.		
FY06 NAVAL AIR WARFARE CENTER (NAWC), Pt Mugu CA. Continue to provide funds for hardware, software and integration research. LOCKHEED MARTIN, Denver CO. Provide funds for research on TERPES software applications to provide improvement in the interfaces and interoperability with the EA-6B and mission planning systems. MARCORSYSCOM, (GEOSS), Titan Corporation, Reston, VA. Continue to provide funds for software integration and testing. NSMA, (MTC), ITsFAC, Stafford, VA. Continue to provide integration facility and program management support.		
FY07 NAVAL AIR WARFARE CENTER (NAWC), Pt Mugu CA. Continue to provide funds for hardware, software and integration research. LOCKHEED MARTIN, Denver CO. Continue to provide funds for research on TERPES software applications to provide improvement in the interfaces and interoperability with the EA-6B and mission planning systems. MARCORSYSCOM, (GEOSS), Titan Corporation, Reston, VA. Continue to provide funds for software integration and testing. NSMA, (MTC), ITsFAC, Stafford, VA. Continue to provide integration facility and program management support.		
<b>RADIO RECONNAISSANCE EQUIPMENT PROGRAM (RREP)</b>		
FY05 NSMA, (MTC), ITsFAC, Stafford, VA. Provide integration facility and program management support.		
FY06 NSMA, (MTC), ITsFAC, Stafford, VA. Continue to provide integration facility and program management support.		
FY07 NSMA, (MTC), ITsFAC, Stafford, VA. Continue to provide integration facility and program management support.		

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Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication			C2274 Command & Control Warfare Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
MEWSS	RCP	NSMA (MTC)	16.061	0.514	11/04					Cont	Cont	
MEWSS	WR	SPAWAR, S.C	2.241	0.301		0.461	11/05			Cont	Cont	
Next Gen Mobile Elect	RCP	MCLB	0.000	3.348	01/05							
TERPES	RCP	Lockheed Martin	3.349	0.900	01/05	1.133	12/05	0.763	12/06	Cont	Cont	
TERPES	WR	NAWC, Pt. Mugu CA	4.418	0.290	10/04	0.500	10/05	0.300	10/06	Cont	Cont	
TERPES	RCP	NAWC, Pt. Mugu CA	0.000	0.320	02/05	0.000	01/00	0.000	01/00	Cont	Cont	
TERPES	RCP	NCMA (MTC)	0.000	0.650	12/04	1.200	12/05	0.509	12/06	Cont	Cont	
TERPES	RCP	NSMA (AIES)	0.000	0.463	11/04	0.312	11/05	0.200	11/06	Cont	Cont	
RREP	RCP	NSWC, Crane	0.756			0.394	01/06	0.774	01/07	Cont	Cont	
RREP	RCP	NSMA (MTC)	0.000	0.102	02/05							
CESAS	RCP	SPAWARSYSCEN	0.500	2.794	12/04	0.030	12/05			Cont	Cont	
CESAS	CPFF	CTI	0.000	0.395	12/04	0.650	12/05	0.250	12/06	Cont	Cont	
CESAS	RCP	MCLB	0.060	0.900	12/04	0.250	12/05	0.080	12/06	Cont	Cont	
CESAS	MPR	NAVAIR	0.400	0.700	12/04	0.400	12/05	0.500	12/06	Cont	Cont	
Subtotal Product Development			27.785	11.677		5.330		3.376		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
TERPES	RCP	NSMA (MTC)	0.526	0.336	11/04	0.362	11/05	0.252	11/06	Cont	Cont	
CESAS	RCP	NSMA (MTC)	0.350	0.880	10/04	0.174	11/05	0.196	11/06	Cont	Cont	
CESAS	RCP	MCSC	0.322	0.520	10/04					Cont	Cont	
MEWSS	RCP	NSMA (MTC)	0.000	0.545	11/04							
Subtotal Support			1.198	2.281		0.536		0.448		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
RREP	REALIGN	MCOTEA	0.000	0.171	11/04							
Subtotal T&E			0.000	0.171		0.000		0.000		0.000	0.171	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
CESAS	RC	MCSC	0.000	0.808	11/04	0.030	12/04	0.023	12/05	Cont	Cont	
Subtotal Management			0.000	0.808		0.030		0.023		Cont	Cont	
Remarks:												
Total Cost			28.983	14.937		5.896		3.847		Cont	Cont	

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME:  
C2274 Command & Control Warfare Systems

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# MEWSS Schedule



	FY03	FY04	FY05	FY06	FY07	FY08	FY09
IOT&E Deficiency Analysis	████████						
IOT&E Fixes	██████████						
DT	████████						
Delivery & Training	████						
MEWSS PIP Op Assessment	████						
QA Quicklook Report	▲						
Production Decision (MS-C)	▲						
Contractor Logistics Support		████████████████████					
Basing & Fielding Decision		▲					
MEWSS PIP IOC		▲					
MEWSS PIP FOC		▲					
Legacy Repairs & CLS	████████████████████						
Legacy Upgrades	████████████████████						

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**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	1.360	0.461	0.000	0.000	0.000	0.000	0.000	0.000	1.821
(U) PMC BLI 463600 Modification Kits MEWSS	2.665	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.665
(U) PMC BLI 465200 Modification Kits MEWSS	0.000	1.332	0.209	0.000	0.000	0.000	0.000	0.000	1.541

**Exhibit 4/4a Schedule Profile/Detail**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME:

**RDT&E, N /BA 7 Operational Sys Dev**

**0206313M Marine Corps Communication Systems**

**C2274 Command & Control Warfare Systems**

<b>MEWSS SCHEDULE DETAIL</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Developmental Testing	4Q	1Q/2Q						
Operational Assessment		2Q/3Q						
MS C			2Q					
Field System MEWSS PIP 1-3			4Q					
Contractor Logistics Support (CLS)			2Q					
IOC MEWSS PIP			4Q					
MEWSS Legacy Block 0 and 1 Production			2Q					
MEWSS Legacy Block 0 and 1 Fielding			4Q					
FOC MEWSS PIP			4Q					
MEWSS Legacy Block 2 and 3 Production			3Q/4Q					
MEWSS Legacy Block 2 and 3 Fielding				1Q 3Q				

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME:

RDT&E, N /BA 7 Operational Sys Dev

0206313M Marine Corps Communication Systems

C2274 Command & Control Warfare Systems

RREP MILESTONE SCHEDULE

EVENT	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10
SS-3 MS-B	3Q								
SS-3 MS-C		4Q							
SS-3 IOC/FOC				2/3Q	1Q				
SS-3 PIP IOC/FOC						1Q			
SS-4 MS B						2Q			
SS-4 MS C							2Q		
SS-4 IOC/FOC									1Q

**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E,N

(U) PMC BLI 474700 INTELLIGENCE SUP EQUIP RREP

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N	0.273	0.394	0.774	0.734	0.910	0.733	0.832	0.000	4.650
(U) PMC BLI 474700 INTELLIGENCE SUP EQUIP RREP	1.940	3.992	0.034	1.019	5.191	0.100	1.294	0.000	13.57



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EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>			<b>C2275 Joint Tactical Radio Systems</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>9.812</b>	<b>7.838</b>	<b>14.612</b>	<b>13.870</b>	<b>12.158</b>	<b>8.872</b>	<b>8.087</b>	
RDT&E Articles Qty								
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p><b>(U) Joint Tactical Radio System - JTRS</b> is a Family of Joint Multi-Channel/Multi-Mode, Software-Defined, Reprogrammable Tactical Radio Systems. JTRS provides a high capacity line of sight (LOS) and beyond line of sight (BLOS) plain and secure voice, data, and video while operating in frequency bands from 2 MHz to 2 GHz. It also provides network connectivity across the radio frequency (RF) spectrum and providing the means for required tactical digital information exchanges.</p> <p>Block 1: Interim Handheld/Manpack and Data Radios. Includes 3 radio systems: the High Frequency Man-pack Radio (HFMR), the Tactical Handheld Radio (THHR), and software upgrades/maintenance for Enhanced Position Location Reporting System (EPLRS) radios.</p> <p>Block 2: Ground Vehicular/Rotary Wing, scaleable to 6 Channels (US Army – Cluster 1): Expeditionary Maneuver Warfare Air Ground Over the Horizon (EMW A/G OTH) Communications Vehicle (initially replacing systems beyond lifecycle: AN/MRC-138, AN/VRC-83), and C2 platforms that require multiple channels in multiple bands (LAV-C2 (Light Armored Vehicle Command and Control Variant, Unit Operations Center (UOC), and EFV (Expeditionary Fighting Vehicle) formerly AAAV.</p> <p>Block 3: Handheld/Man-pack, 1 or 2 Channels (USSOCOM – Cluster 2): Multipurpose Handheld and Manpacks (initially replacing systems beyond lifecycle: AN/PRC-68, PRC-104, PRC-113). These radios should be available in FY06-FY07.</p> <p>Tactical Elevated Antenna Mast System (TEAMS) is a single HMMWV mounted 100' telescoping antenna mast replacing the two AN/MRC- 142 50' antennas. TEAMS provides a safer more efficient mast to allow up to twice the current height capability to overcome obstructions caused by over head canopy and obstructing ridges which eliminates the need to set up additional relay sites. TEAMS will be employed with AN/MRC-2 then JTRS when the AN/MRC-142 is replaced by JTRS.</p> <p><b>(U) Integrated Intra-Squad Radio Systems (IISR)</b> - Integrated Intra-Squad Radio is a short-range radio that utilizes advanced wireless LAN technology and spread spectrum techniques to provide a hands free intercommunication capability while ensuring a low probability of interception and detection. The IISR consists of a small radio unit powered by 2 AA batteries, a wireless PTT switch, a lightweight headset compatible with the current combat helmet, and a heavy-duty nylon pouch. The dual version integrates with the AN/PRC-148 using an additional Push-to-talk (PTT) switch to provide the user control of two radios with one headset/microphone.</p> <p><b>(U) Tactical Satellite Comm Terminal - LIGHTWEIGHT MULTIBAND STATELLITE TERMINAL (LMST)/GROUND MOBILE FORCES (GMF)</b> is a tri-band Super High Frequency (SHF) satellite terminal mounted in transit cases and transported by HMMWVs. They will augment the existing Ground Mobile Force (GMF) satellite terminals. Additionally, across the FYDP, in accordance with the LMST Acquisition Strategy and Baseline, a quantity of 21 existing GMF terminals (TSC-93) will be upgraded and refurbished with enhanced components in order to extend their useful life. The GMF upgrades will occur concurrent with additional LMST transit case terminal procurements.</p> <p><b>(U) Legacy Communications/Electronics Modifications and Sustainment</b> 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.</p> <p>Networks: The following systems require SLEP/supportability upgrades: The Unit Level Circuit Switch (ULCS), which consists of the TTC-42, SB-3865 and SB-3614 require sustainment and modifications to continue the operating forces networking/switching capability until TSM is fielded. The AN/TSQ-227 Digital Technical Control (DTC) upgrades are driven by DoD mandated interoperability and security requirements, which includes technology insertion and evolutionary equipment improvements.</p> <p><b>(U) Wireless:</b> The following systems require SLEP/supportability upgrades: These are the AN/TRC-170 Tropospheric Scatter Microwave Radio Terminal and the AN/PSC-5 "ShadowFire" upgrade. The AN/TRC-170 provides secure digital trunking between major nodes of the TRI-TAC communications network with a range of over 100 miles and will reach its end of service life in FY05. The FY05 upgrade allows for the fielded AN/PSC-5 to support past FY04.</p>								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2275 Joint Tactical Radio Systems</b>	
<p>(U) <b>Command &amp; Control On-the-move Network, Digital Over-the-horizon Relay - (CONDOR)</b> is a direct result of after action reports from Operations Iraqi Freedom and Enduring Freedom. The equipment suite will enable and provide on-the-move (OTM), over-the-horizon (OTH) connectivity between Tactical Data Radio networks (such as EPLRS networks). A CONDOR GW equipment suite consists primarily of a SATCOM modem, a mobile SATCOM antenna, a router, LAN encryption equipment, and a shock-mounted transit case. No vehicles are being procured. The CONDOR GW equipment suite will be installed on existing vehicles.</p> <p>(U) <b>SHF Wideband Replacement (HC3)</b> will be the Marine Air Ground Task Force (MAGTF) commanders primary 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.</p> <p>(U) <b>Wireless Cable Replacement - WCR</b> - The Wireless Cable Replacement (WCR) Initiative will procure a line of sight, unattended repeater capable of data rates ranging from 4.6 Mb/s to 155 Mb/s. This repeater will wirelessly remote data and telephone services from command and control centers to transmission systems such as the AN/MRC-142 and the AN/TRC-170. OIF Lessons-Learned revealed that fiber optic cables were highly susceptible to damage, leading to loss of service to the supported commander and staff. The WCR initiative fulfills the WCR Requirement within the Digital Wideband Transmission System (DWTS) Required Operational Capability (ROC) CCC 256.1.2, change 6 dated 28 Jan 04. The subject and purpose of the DWTS ROC is the official requirement for the AN/TRC-170, AN/MRC-142(A&amp;B), and the WCR in the Marine Corps.</p> <p>(U) <b>MILSTAR Advanced Satellite Terminal (SECURE MOBILE ANTI-JAM RELIABLE TACTICAL TERMINAL (SMART-T))</b> - This terminal operates with MILSTAR compatible communications payloads and transmits and extremely high frequency (EHF) uplink signal and receives a super high frequency (SHF) downlink signal to provide the MAGTF commander with robust, low probability of intercept, jam resistant communications.</p>			
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.115</b>
RDT&E Articles Qty			
<b>JTRS: Migration/Integration Studies and Analysis. Manpack/Handheld JTRS.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.998</b>	<b>0.000</b>	<b>0.775</b>
RDT&E Articles Qty			
<b>JTRS: Program Support and Management.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>2.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>JTRS/CONDOR: IMMARSAT connection fees.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.592</b>
RDT&E Articles Qty			
<b>JTRS: Gnd Vehicular (Cluster 1) Early Operational Assessment (EOA), Developmental and Operational Testing (DT/OT).</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>2.261</b>	<b>0.014</b>	<b>0.577</b>
RDT&E Articles Qty			
<b>JTRS: Technical and Engineering Support.</b>			



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N/BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2275 Joint Tactical Radio Systems</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.570</b>
RDT&E Articles Qty			
<b>JTRS: Contract Advisory and Assistance Services.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.100</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>IISR: Concept and Technical Development</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.100</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>IISR: Operational Test and Evaluation</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.366</b>	<b>1.853</b>
RDT&E Articles Qty			
<b>SHF Wideband Replacement (HC3): USMC integration efforts.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.100</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>TSCT (LMST): Ka-Band Upgrade Effort.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.125</b>	<b>0.000</b>	<b>0.500</b>
RDT&E Articles Qty			
<b>TSCT (LMST): LMST load test</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.200</b>	<b>0.200</b>
RDT&E Articles Qty			
<b>TSCT (LMST): Contract support costs.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.240</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>UCIM (LMST): Integration support</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.123</b>	<b>1.670</b>
RDT&E Articles Qty			
<b>Legacy Comm/Elec (Networks): Develop and test component upgrades for integration into legacy network equipment (ULCS/DTC)</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.381</b>	<b>0.123</b>
RDT&E Articles Qty			
<b>Legacy Comm/Elec (Wireless): Develop and test component upgrades for integration into legacy radio systems (TRC-170 / PSC-5)</b>			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2275 Joint Tactical Radio Systems</b>	
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.042</b>	<b>0.195</b>
RDT&E Articles Qty			
<b>CONDOR: Spiral Development Studies and Integration Development</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.747</b>	<b>0.789</b>
RDT&E Articles Qty			
<b>CONDOR: Program Support, Logistics Support &amp; Management.</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.500</b>
RDT&E Articles Qty			
<b>CONDOR: Point of Presence Vehicle (PoP-V) Engineering Development Model (EDM) Manufacturing</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.500</b>
RDT&E Articles Qty			
<b>CONDOR: Jump Command and Control Vehicle (JC<sup>2</sup>-V) EDM Manufacturing</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.215</b>	<b>0.253</b>
RDT&E Articles Qty			
<b>CONDOR: Technical, Engineering Support and Contract Advisory, Assistance Services</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.300</b>	<b>0.538</b>
RDT&E Articles Qty			
<b>CONDOR: Gateway OT</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>1.060</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>CONDOR: Integration of Condor Gateway capability into ITVs.</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.753</b>
RDT&E Articles Qty			
<b>CONDOR: Point of Presence Vehicle (PoP-V) DT/OT</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.578</b>
RDT&E Articles Qty			
<b>CONDOR: Jump Command and Control Vehicle (JC<sup>2</sup>-V) DT/OT</b>			
COST (\$ in Millions)	FY2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost	<b>1.506</b>	<b>0.000</b>	<b>0.263</b>
RDT&E Articles Qty			
<b>CONDOR: Integration, update support documentation and contract support costs.</b>			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C2275 Joint Tactical Radio Systems</b>		
COST (\$ in Millions)	FY2005	FY2006	FY2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.150</b>	<b>0.158</b>	
RDT&E Articles Qty				
<b>CONDOR: MCTSSA interoperability/DISA on-orbit tests.</b>				
COST (\$ in Millions)	FY2005	FY2006	FY2007	
Accomplishment/Effort Subtotal Cost	<b>0.214</b>	<b>0.000</b>	<b>0.000</b>	
RDT&E Articles Qty				
<b>CONDOR: KU VSAT Research and Development in support of Condor</b>				
COST (\$ in Millions)				
Accomplishment/Effort Subtotal Cost	<b>0.118</b>	<b>0.000</b>	<b>0.810</b>	
RDT&E Articles Qty				
<b>WCR: Contractor Support</b>				
COST (\$ in Millions)	FY2005	FY2006	FY2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	
RDT&E Articles Qty				
<b>WCR: Operational Testing, MCOTEA</b>				
COST (\$ in Millions)	FY2005	FY2006	FY2007	
Accomplishment/Effort Subtotal Cost	<b>0.040</b>	<b>0.000</b>	<b>0.050</b>	
RDT&E Articles Qty				
<b>WCR: MCTSSA Integration Testing</b>				
(U) Total \$		<u><b>9.812</b></u>	<u><b>7.838</b></u>	<u><b>14.612</b></u>
(U) PROJECT CHANGE SUMMARY:	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>	
(U) <b>FY 2006 President's Budget:</b>	<b>8.536</b>	<b>15.640</b>	<b>14.542</b>	
(U) Adjustments from the NAVCOMPT Budget:				
(U) Congressional/OSD Program Reductions				
(U) Congressional Rescissions		-4.100		
(U) Congressional Increases				
(U) Reprogrammings	1.348			
(U) SBIR/STTR Transfer	-0.067			
(U) Minor Affordability Adjustment	-0.005	-3.702	0.070	
(U) <b>FY 2007 President's Budget:</b>	<b>9.812</b>	<b>7.838</b>	<b>14.612</b>	
CHANGE SUMMARY EXPLANATION:				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206313M Marine Corps Communication Systems</b>					<b>C2275 Joint Tactical Radio Systems</b>			
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI# 464300 Jt Tactical Radio Sys	23.349	7.049	0.000	0.000	0.000	0.000	17.851	Cont	Cont
(U) PMC BLI# 463300 Radio Systems (LMST)	16.938	4.106	11.236	4.870	1.310	1.149	1.400	0.000	41.009
(U) PMC BLI# 463300 LEGACY RADIO SYS	2.354	6.858	17.197	13.674	14.644	6.140	2.078	0.000	62.945
(U) PMC BLI# 463300 CONDOR	0.000	3.649	8.425	8.489	8.303	5.951	0.000	0.000	34.817
(U) PMC BLI# 463300 Wireless Cable Replacement	0.000	0.000	0.004	4.075	3.086	0.000	0.000	0.000	7.165
<b>(U) Related RDT&amp;E: Not Applicable</b>									
<b>(U) D. ACQUISITION STRATEGY:</b>									
<b>(U) LEGACY COMM ELECTRONICS MOD:</b>									
<b>(U) Wireless:</b> Provide continous sustainment support to fielded equipment and implemented Service Life Extention Programs for equipment reaching its end of life/supportability.									
<b>(U) Tactical Satellite Comm Terminal - LMST-</b> Due to funding constraints, the acquisition strategy for the Lightweight Multiband Satellite Terminal and GMF terminals is to procure the minimum amount of LMST terminals for the FMF to satisfy the need for a modern tri-band satellite terminal in the USMC inventory while simulteaneously upgrading the legacy GMF TSC-93 terminals with enhanced components. Upgrading the GMF terminals is in accordance with the LMST acquisition strategy and will attempt to fill the gap in USMC SATCOM capability since funding will not allow for meeting the LMST AAO completely. The LMST upgrade program leverages off the current efforts and integrates the full duplex Ka-band capabilites into existing terminals.									
<b>(U) SHF Wideband Replacement (HC3)</b> is the long-term Development of multi-band replacement terminals synchronized with Tranformational Communications (TC) satellite availability across the DoD. The USMC RDTE funding is for pre-milestone B activities & partnering with industry with Initial studies and transfer of technology between services. And, it will bring capability to test incrementally as selected technologies mature. The early efforts will ensure USMC interests are given equal weight to that of other services as this terminal will replace (approx. 2010/2012) all other DoD SATCOM terminals.									
<b>(U) JTRS - JTRS</b> is the next generation radio systems to provide required transformational capabilities while leveraging modern technologies to resolve interoperability and lifecycle computer-based command and control systems. These radios will also support Marine Corps requirements for high-capacity, dynamic, mobile, networked, communicatians as the Marine Corps continues to automate its processes. Integration of these radios into C2 platforms, and begin procurement of Ground Vehicular JTRS to replace aging HF Over the Horizon (OTH) (AN/MRC-138) and UHF Air/Ground (AN/VRC-83) radio systems. The integration of JTRS into the EFV will increase its C4I capability and eliminate the cost of retrofitting the EFV for JTRS Life Cycle Cost Reduction. JTRS will reduce development costs for enhancements to future radio system implementations, reduce maintenance support costs by reducing the number of types of radio systems in the inventory, and reduce operating costs through the employment of multi-function radio systems.									

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0206313M Marine Corps Communication Systems</b>	<b>PROJECT NUMBER AND NAME</b> <b>C2275 Joint Tactical Radio Systems</b>
<p><b>(U) INTEGRATED INTRA-SQUAD RADIO - IISR</b> - Integrated Intra-Squad Radio is a short-range radio that utilizes advanced wireless LAN technology and spread spectrum techniques to provide a hands-free intercommunication capability while ensuring a low probability of interception and detection. The IISR consists of a small radio unit powered by 2 AA batteries, a wireless PTT switch, a lightweight headset compatible with the current combat helmet, and a heavy-duty nylon pouch. The dual version integrates with the AN/PRC-148 using an additional Push-to-talk (PTT) switch to provide the user control of two radios with one headset/microphone.</p> <p><b>(U) Command &amp; Control On-the-move Network, Digital Over-the-horizon Relay - CONDOR-</b> -- CONDOR was approved as an ACAT Level III program. Commanding Officer MCSC will be the MDA. The MCSC CONDOR project office will pursue a Milestone B decision during 1st QTR FY05 and a Mileston C decision during 1st QTR FY06. The CONDOR GW concept has been developed over the past 12 months by the cooperative efforts of MCSC and ONR (Littoral Combat, Future Naval Capabilities). Having achieved advocate endorsement at the CEAB in August 2003, CONDOR GW is drafting a Technology Transition Agreement (TTA) with ONR for transition to a Program of Record (POR).</p> <p><b>(U) Wireless Cable Replacement - WCR</b> - The acquisition strategy for WCR involves the testing and procurement of a fully developed and mature COTS product. MCSC WCR will select from 3 or more manufacturers. The final selection will be based on capability, price, and Marine Corps test results.</p> <p><b>(U) E. MAJOR PERFORMERS:</b></p> <p>FY06 TSCT (LMST) HARRIS COMM SYS, MELBOURNE, FL KA-BAND INTEGRATION &amp; UPGRADE, JAN - 06.</p> <p>FY06 SHF WIDEBAND REPLACEMENT (HC3): PM WIN-T CECOM, FT. MONMOUTH NJ</p> <p>FY05 JTRS: MITRE PROGRAM SUPPORT, OCT 04.</p> <p>FY06 JTRS: MITRE PROGRAM SUPPORT, OCT 05.</p> <p>FY05 JTRS: BOEING, ANAHEIM, CA ,MAJOR H/W SUB, HARRIS, ROCHESTER, NY ,BAE, WAYNE NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT 04.</p> <p>FY06 JTRS: BOEING, ANAHEIM, CA, MAJOR H/W SUB, HARRIS, ROCHESTER, NY, BAE, WAYNE, NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT 05.</p> <p>FY07 JTRS: BOEING, ANAHEIM, CA, MAJOR H/W SUB, HARRIS, ROCHESTER, NY, BAE, WAYNE, NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT 06.</p> <p>FY06 LEGACY: TBD</p> <p>FY07 LEGACY: TBD</p> <p>FY06 SHF WIDEBAND</p> <p>FY07 SHF WIDEBAND</p> <p>FY06 CONDOR: TBD</p> <p>FY07 WCR: TBD</p>		

Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			Systems			C2275 Joint Tactical Radio Systems						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 7.838 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LMST Ka-Band Upgrade	FFP	Harris Corp, Florida	0.000	0.000		1.100	01/06	0.000		0.000	1.100	
LMST Technical Upgrades	FFP	Harris Corp, Florida	0.045	0.000				0.500	TBD	Cont	Cont	
SHF Wideband Replacement	MIPR	PM WIN-T, CECOM	0.000	0.125	04/05	1.366	TBD	1.853	TBD	Cont	Cont	
IISR Concept and Technical Develop	CPAF	TBD	0.000	0.000		0.100	12/05	0.000		Cont	Cont	
LCE (Networks) Development	FFP	TBD	0.000	0.000		2.103	01/06	1.650	01/07	Cont	Cont	
LCE (Wireless) Development	FFP	TBD	0.000	0.000		0.371	01/06	0.113	01/07	Cont	Cont	
CONDOR Integ GW ITV's	FFP	SPAWARS Charleston	0.000	1.060						0.000	1.060	
CONDOR KU VSAT Develop	FFP	Cecom Ft Monmouth	0.000	0.214						0.000	0.214	
CONDOR PoP-V EDM Manufacturing	TBD	TBD	0.000	0.000		0.000		0.675	11/06	Cont	Cont	
CONDOR JC2-V EDM Manufacturing	TBD	TBD	0.000	0.000		0.000		1.500	11/06	Cont	Cont	
Studies and Integration Development	TBD	TBD	0.000	0.000		1.042	11/05	0.222	11/06	Cont	Cont	
Condor Immarsat Fees	FFP	Scott AFB, IL	0.000	2.000	03/05	0.000		0.000		Cont	Cont	
UCIM Demo	FFP	Naval Research Lab	0.000	0.240	05/05	0.000		0.000		Cont	Cont	
<b>Subtotal Product Development</b>			<b>0.045</b>	<b>3.639</b>		<b>6.082</b>		<b>6.513</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTRS TRAVEL	Allot	MARCORSYSCOM	0.060	0.000	10/04	0.000	10/05	0.040	10/06	Cont	Cont	
JTRS Integration/Migration	FFP	Titan, Stafford, VA	1.520	1.998	10/05	0.000	12/05	0.115	12/06	Cont	Cont	
JTRS Tech & Eng Support	FFP	OSEC, Stafford, VA	0.752	2.261	10/04	0.000	10/05	0.577	10/06	Cont	Cont	
CONDOR Program travel	Allot	MARCORSYSCOM	0.000	0.150	10/04	0.040	10/05	0.040	11/06	Cont	Cont	
CONDOR Technical Support	FFP	Titan, Stafford, VA	0.000	0.000		0.175	10/05	0.184	10/06	Cont	Cont	
CONDOR Integration and update Support documentation, Contract support costs	TBD	TBD	0.000	1.506	08/05	0.000	11/05	0.263	11/06	Cont	Cont	
LMST Contractor Support	FFP	NGIT, Stafford, VA	0.000	0.000		0.200	10/05	0.200	10/06	Cont	Cont	
WCR Program Support	FFP	NGIT, Stafford, VA	0.000	0.118	03/05	0.000		0.440	10/06	Cont	Cont	
WCR Contract Adv & Asst	FFP	Titan, Stafford, VA	0.000	0.000		0.000		0.370	10/06	Cont	Cont	
CONDOR Phase 1 IDA Support	FFP	OASD	0.000	0.100	05/05	0.000		0.000		0.000	0.100	
<b>Subtotal Support</b>			<b>2.332</b>	<b>6.133</b>		<b>0.415</b>		<b>2.229</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			Systems			C2275 Joint Tactical Radio Systems						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTRS Gnd Veh EOA/DT/OT	WR	MCOTEA	0.150	0.040	10/04	0.000	10/05	0.150	10/06	Cont	Cont	
JTRS Gnd Veh EOA/DT/OT	MIPR	PM WIN-T, CECOM	1.575	0.000	10/04	0.000	10/05	1.442	10/06	Cont	Cont	
IISR Operational T&E	MIPR	TBD	0.000	0.000		0.100	12/05	0.000		Cont	Cont	
LCE (Networks) Integration Tests	WR	MCTSSA	0.000	0.000		0.020	12/05	0.020	12/06	Cont	Cont	
LCE (Wireless) Integration Tests	WR	TBD	0.000	0.000		0.010	12/05	0.010	12/06	Cont	Cont	
CONDOR Integration Tests	WR	TBD	0.000	0.000		0.150	11/05	0.158	11/06	Cont	Cont	
CONDOR Gateway OT, JC2-V OT, and PoP-V OT	WR	TBD	0.000	0.000		0.300	11/05	1.694	11/06	Cont	Cont	
WCR Integration Testing	FFP	MCTSSA, CA/TBD	0.000	0.000		0.000		0.050	11/06	Cont	Cont	
WCR MOT&E	FFP	MCOTEA	0.000	0.000		0.000		0.250	01/07	Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>1.725</b>	<b>0.040</b>		<b>0.580</b>		<b>3.774</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTRS Program Support	FFP	NGIT,Stafford, VA	0.866	0	10/04	0	10/05	0.735	10/06	Cont	Cont	
JTRS Contract Adv & Assist	FFP	TITAN VA	0.325	0	10/04	0.014	10/05	0.570	10/06	Cont	Cont	
CONDOR Program Support, Contract Adv & Asst	FFP	Titan, Stafford, VA	0.000	0.000		0.747	10/05	0.633	10/06	Cont	Cont	
CONDOR Logistics Support	FFP	NGIT,Stafford, VA	0.000	0.000		0	10/05	0.158	10/06	Cont	Cont	
<b>Subtotal Management</b>			<b>1.191</b>	<b>0.000</b>		<b>0.761</b>		<b>2.096</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>5.293</b>	<b>9.812</b>		<b>7.838</b>		<b>14.612</b>		<b>Cont</b>	<b>Cont</b>	

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Exhibit 4/4a, Schedule Profile/Detail

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

**JOINT TACTICAL RADIO SYSTEM (JTRS)**

FISCAL YEARS	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	To Complete
<b>BLOCK 1 (Interim)</b>									
MANPACK HFMR			207	531	32				
MANPACK MBMMR			26	58	104				
HANDHELD THHR			620	1285	597				
HANDHELD IISR					4000	2500			
TEAMS					15	112			
Milestone			▲ MS 'C'						
<b>BLOCK 2 (JTRS Cluster 1 Vehicular)</b>				<b>EMD</b>			<b>LRIP</b>	<b>LRIP</b>	
Milestones	▲ MS 'B'			14	0	0	499	788	Cont
Contract Award	▲						MS C ▲		
Operation Capability 1ST QTR FY10									
<b>BLOCK 3 (JTRS Manpack/Handheld/SFF)</b>					<b>EMD</b>	<b>LRIP</b>	<b>LRIP</b>	<b>FRP</b>	
<b>Cluster 2 - Handheld</b>									
Milestones				▲ MS 'C'					
Contract Award					▲ USMC Proc.				
<b>Cluster 5 - Handheld/Manpack.SFF</b>									
Milestones			MS 'B' ▲				▲ MS 'C'		
Contract Award (Tentative)								▲ LRIP (tent.)	

**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	9.812	0.014	3.629	1.457	1.509	1.526	1.547	Cont	Cont
(U) PMC BLI# 464300 JTRS	23.349	7.049	0.000	0.000	0.000	0.000	17.851	Cont	Cont
(U) PMC BLI# 463300	0.000	0.000	0.000	8.527	69.376	49.329	67.239	Cont	Cont

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Exhibit R-4/4a, Schedule Profile/Detail  
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Exhibit 4/4a, Schedule Profile/Detail

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2275 Joint Tactical Radio Systems</b>
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<b>JTRS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone 'B' (Block 2 Gnd Veh)						
Contract Award (Block 2 Gnd Veh)						
SRR (Block 2 Gnd Veh)						
PDR (Block 2 Gnd Veh)						
CDR (Block 2 Gnd Veh)						
Early Operational Assessment (Block 2 Gnd Veh)		1Q				
DT/OT (Block 2 Gnd Veh)			1Q			
Milestone 'C' (Block 2 Gnd Veh)					2Q	
Block 3 Cluster 2 PDR						
Block 3 Cluster 2 CDR	1Q					
Block 3 Cluster 2 EOA	3Q					
Block 3 Cluster 2 DT/OT		1Q				
Block 3 Cluster 2 MS 'III'		2Q				
Block 3 Cluster 5 Events TBD (Awaiting Contract Award)						

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Exhibit 4/4a, Schedule Profile/Detail

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

**TACTICAL SATELLITE COMMUNICATION TERMINAL (LMST)**

Fiscal Year	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
Milestone III (procurement)			◆								
Contract ECP Award		◆									
Terminal Deliveries/Fielding			▬								
IOC			◆								
FOC					◆						
Ka-band development						▬					
Integration Fielding Ka-Band Upgrades							▬				
IOC							◆				
FOC								◆			

**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E,N

(U) PMC BLI# 463300 Radio Systems (LMST)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.000	1.300	0.700	0.200	0.202	0.300	0.302	Cont	Cont
(U) PMC BLI# 463300 Radio Systems (LMST)	16.938	4.106	11.236	4.870	1.310	1.149	1.400	Cont	Cont

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

<b>LMST SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Terminal Deliveries						
IOC						
FOC		2ndQtr				
Ka-band Development			1st-4th Qtr			
Ka-band Integration						
IOC			4th Qtr			
FOC					4th Qtr	

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Exhibit 4/4a, Schedule Profile/Detail

DATE:

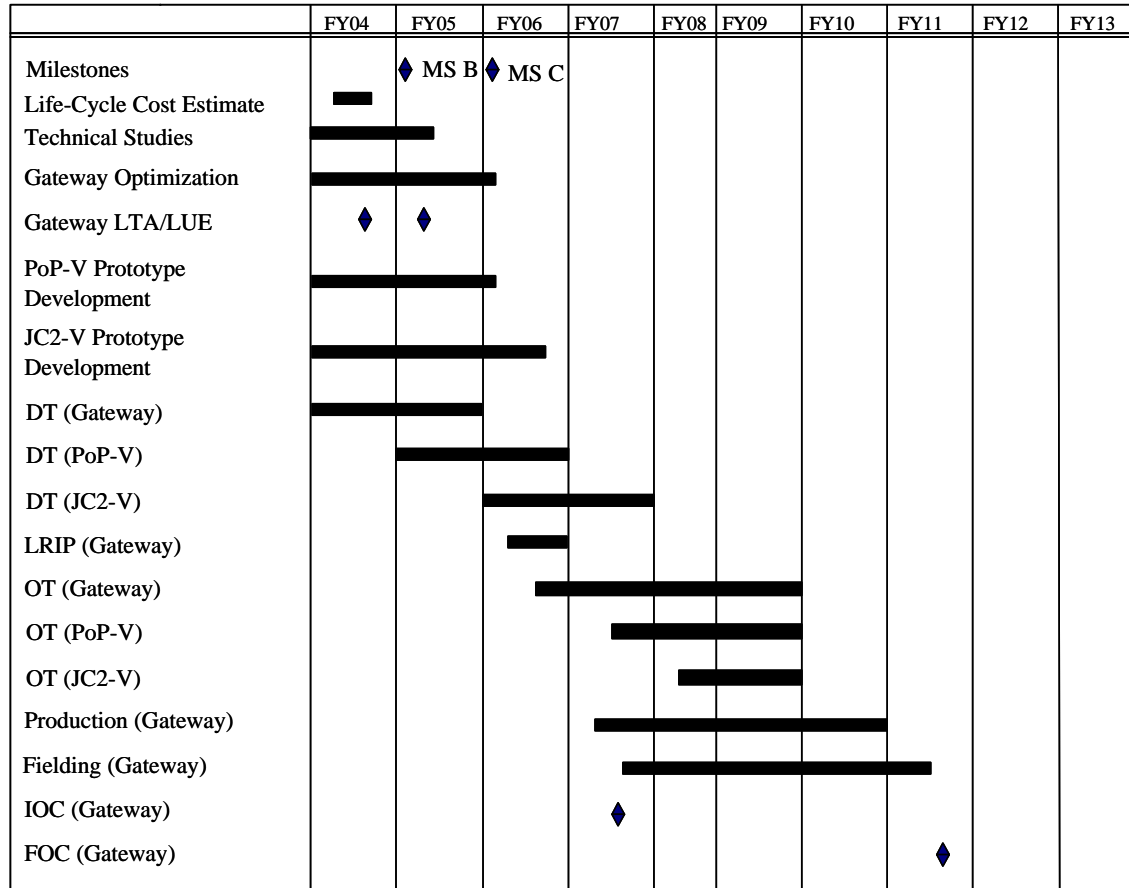
February 2006

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

**Command & Control On-the-move Network, Digital Over-the-horizon Relay (CONDOR)**



**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.000	2.454	5.527	7.611	6.374	1.766	0.910	0.000	24.642
(U) PMC BLI# 463300 CONDOR	0.000	3.649	8.425	8.489	8.303	5.951	0.000	0.000	34.817

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Exhibit 4/4a, Schedule Profile/Detail

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

<b>CONDOR SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Milestones (B) and ©		1st Qtr	1st Qtr						
Life Cycle Cost Estimate	2-3rd Qtr								
Technical Studies	1Q	2Q							
Gateway Optimization	1Q	-----	1stQ						
Gateway LUE	3rd Qtr	2Q							
PoP-V Prototype Development	1Q	-----	1Q						
JC2-V Prototype Development	1Q	-----	3Q						
DT (Gateway)	1Q	4Q							
DT (PoP-V)		1Q	4Q						
DT (JC2-V)			1Q	4Q					
LRIP Gateway			2-4th Qtr						
OT Gateway			3Q	-----	-----	4Q			
OT (PoP-V)				3Q	-----	4Q			
OT (JC2-V)					3Q	4Q			
Production (Gateway)				1Qtr	-----	-----	4Q		
Fielding (Gateway)				3Q	-----	-----	-----	2Q	
IOC Gateway				2Q					
FOC Gateway								3Q	

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT  
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME  
C2275 Joint Tactical Radio Systems

## Wireless Cable Replacement (WCR)

FISCAL YEARS	FY06	FY07	FY08	FY09	FY10	FY11	To Complete
<b>Testing</b>							
MOT&E, MCOTEA		▲					
DT/OT, MCTSSA		▲					
<b>Procurement</b>							
LRIP Purchase		10	0	0	0		10
End Item Procurement			40	86	36	26	188
<b>Total Procurement</b>							198
<b>Milestones</b>							
Milestone B Decision	▲ MS 'B'	LRIP					
LRIP Decision		▲					
Milestone C/FRP Decision		▲	MS 'C'				
Fielding Decision (FD)		FD ▲					
<b>Operational Capability</b>							
Initial Operational Capability (IOC)			IOC ▲				
Full Operational Capability				FOC ▲			

**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.000	0.000	1.110	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) PMC BLI#463300 Wireless Cable Replacement	0.000	0.000	0.004	4.075	3.086	0.000	0.000	Continuing	Continuing

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Exhibit 4/4a, Schedule Profile/Detail

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2275 Joint Tactical Radio Systems

WCR SCHEDULE DETAIL	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY Total
Milestone 'B' Decision	2Q						
DT/OT 1		1Q					
MOT&E		2Q					
LRIP Decision		2Q					
LRIP Procurement-10 Systems		2Q					
Milestone C/FRP Decision		3Q					
Procurement 40 Systems		4Q	1Q				
Procurement 86 Systems				1Q			
Procurement 36 Systems					1Q		
Procurement 26 Systems						1Q	

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EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>			<b>C2276 Communications Switching &amp; Control Systems</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>3.331</b>	<b>6.127</b>	<b>4.494</b>	<b>4.298</b>	<b>3.499</b>	<b>0.841</b>	<b>0.880</b>	
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(U) <b>The Network Planning and Mangement (NPM)</b> is a portfolio of communications planning and Network Management System (NMS) applications for use throughout the Marine Air Ground Task Force (MAGTF). NPM includes JNMS and the Systems Planning Engineering and Evaluation Device (SPEED). JNMS provides the MARFOR component planners with the Joint mandated software needed to conduct high-level planning; detailed planning and engineering; monitoring; control and reconfiguration; spectrum planning and management; and security in support of Combatant Commander (COCOM) and Commander, Joint Task Force (CJTF) operations. SPEED is software used for Radio Frequency (RF) communications analysis by JNMS, other Services and for System Planning and Engineering (SPE) throughout the MAGTF. SPEED provides High Frequency (HF) predictions, Line of Site (LOS) propogation, Radio Coverage Analysis (RCA) and related communicatons network planning and management.</p> <p>(U) <b>The Transition Switch Module (TSM)</b> will 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 will maintain USMC joint interoperability as all Services transition to COTS switching technologies.</p> <p>(U) <b>The Tactical Data Network (TDN)</b> 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 PIP provides a smaller and more mobile variant DDS for the Battalion, Secure Wireless LAN capability for enhanced mobility, integrates security interdiction products into the Gateway; and provides critical refresh of non-MCHS network components such as routers, switches, converters, and tactical peripherals.</p> <p>(U) <b>The Expeditionary Command and Control Suite (ECCS)</b> is a transit case solution that provides SIPRNET email and web access, secure VTC, C2PC/COP and collaborative planning (DCTS) DISA Standard to initial response teams to communicate with higher HQ until larger C2 systems are established. This is an On-The-Move/Enroute capability.</p> <p>(U) <b>The First In Command and Control System (FICCS)</b> is an integrated, processor-controlled communications and management system, housed in a S-788/G Lightweight Multipurpose Shelter (LMS), providing secure and non-secure voice and data communications, switching functions, network routing and management, and global broadcast functions. The S-788/G LMS is mounted on a Heavy-variant High Mobility Multipurpose Wheeled Vehicle (H-HMMWV) and can be connected to a quick-erect general purpose tent.</p>								
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007					
Accomplishment/Effort Subtotal Cost	<b>0.441</b>	<b>0.000</b>	<b>0.000</b>					
RDT&E Articles Qty								
<b>JNMS: Program Management and Support</b>								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007					
Accomplishment/Effort Subtotal Cost	<b>0.499</b>	<b>0.843</b>	<b>1.820</b>					
RDT&E Articles Qty								
<b>NPM: Develop unique USMC models for JNMS and Developmental work for SPEED Net Centric enhancements.</b>								



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2276 Communications Switching &amp; Control Systems</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.989</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TSM: Intergration Testing and Training Device Engineering</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.090</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TSM: Program Support</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.625</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TSM: Development of cellular telephone and Voice over IP (VoIP) capability for integration into TSM EDMs and test for interoperability/operational suitability.</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.500</b>	<b>1.500</b>
RDT&E Articles Qty				
<b>ECCS: Develop and test miniaturized components that provide DISN services while On-The-Move/Enroute.</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.034</b>	<b>1.174</b>
RDT&E Articles Qty				
<b>FICCS: Continue Development of miniaturization of hardware solutions, collaborate with MCTSSA SIE and conduct Interoperability Testing at JITC/Gigabite Ethernet, and Wireless Telephone Technology into the FICCS Platform.</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.312</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>FICCS: Development of SPEED Mobile Training</b>				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.125</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TDN: Test and Evaluate integrated software requirements.</b>				
<b>(U) Total \$</b>		<b><u>3.331</u></b>	<b><u>6.127</u></b>	<b><u>4.494</u></b>

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EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>			<b>C2276 Communications Switching &amp; Control Systems</b>					
<b>(U) PROJECT CHANGE SUMMARY:</b>									
	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>						
<b>(U) FY 2006 President's Budget:</b>	<b>3.720</b>	<b>6.220</b>	<b>7.642</b>						
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings									
	-0.207								
(U) SBIR/STTR Transfer									
	-0.180								
(U) Minor Affordability Adjustment									
	-0.002	-0.093	-3.148						
<b>(U) FY 2007 President's Budget:</b>	<b>3.331</b>	<b>6.127</b>	<b>4.494</b>						
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See Above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U)PMC BLI 463400 Communications Switching and Control Systems									
NPM (JNMS)	2.989	6.528	0.000	2.232	0.000	0.000	0.000	0.000	11.749
ECCS	0.000	0.000	0.000	0.000	3.705	3.528	0.645	0.000	7.878
FICCS	3.438	10.859	0.000	0.768	0.846	0.000	0.000	0.000	15.911
TSM	0.000	27.540	19.813	12.892	16.904	8.719	2.106	0.000	89.814
(U)PMC BLI 468800 Transition Switch Module (TSM)	1.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.84
<b>(U) Related RDT&amp;E: Not Applicable.</b>									

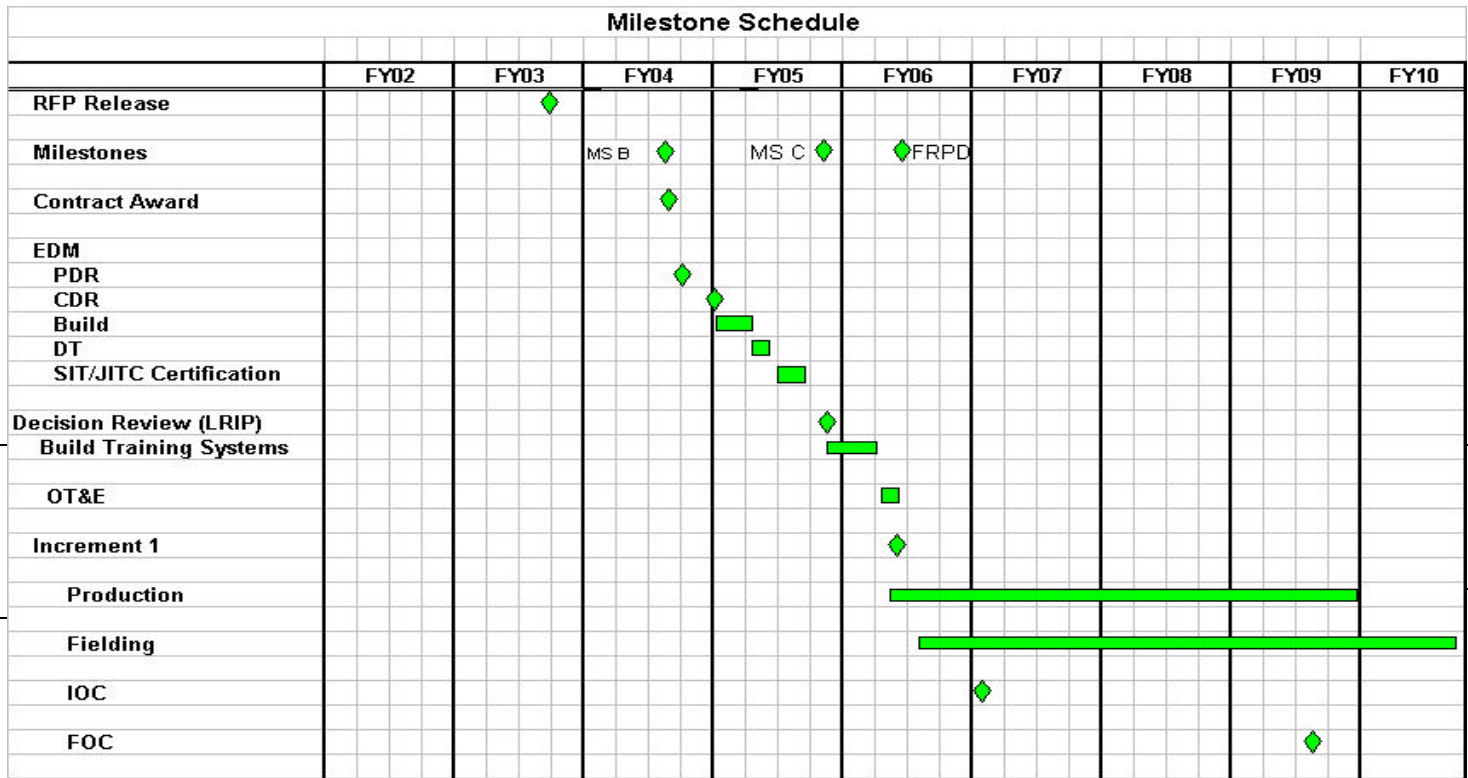
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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b>	<b>PROJECT NUMBER AND NAME</b>
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications Sys</b>	<b>C2276 Communications Switching &amp; Control Systems</b>
<p><b>(U) D. ACQUISITION STRATEGY NPM:</b> NPM uses the Joint Army-led acquisition strategy for JNMS. This is an evolutionary strategy with an initial Build to include all KPP and Threshold requirements. It is followed by pre-planned Builds to incorporate Objective requirements. The JNMS contract method is competitive with a Cost Plus contract for development that is centrally funded by the Army, except for any unique Service requirements. Services are responsible for procurement, fielding and support costs. The production contract is Fixed Price and and the fielding and support is Time and Material (T&amp;M). The JNMS acquisition strategy emphasizes the use of Commercial Off The Shelf (COTS) and Government-off-the-Shelf (GOTS) products. The SPEED acquisition strategy is for spiral development. The SPEED contract method is through a sole source Basic Purchase Agreement (BPA) using Fixed Price Task Orders based on the developers GSA schedule for manhours.</p> <p><b>(U) D. ACQUISITION STRATEGY TSM:</b> The TSM acquisition strategy calls for use of FY04 and FY05 R&amp;D to develop and demonstrate a system of sufficient maturity for production. There will be a single contract award for Low Rate Initial Production (LRIP), testing and full-rate production after successful completion of test. FY06 and FY07 R&amp;D will be used to develop potential cellular telephone and Voice over IP (VoIP) technology for insertion into the TSM Engineering Development Models (EDMs). They will then be tested prior to incorporating them into the TSM production systems.</p> <p><b>(U) D. ACQUISITION STRATEGY ECCS:</b> 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&amp;D effort will focus on developing and integrating "miniaturized" version of existing components. Emerging technologies such as VoIP and Secure Wireless will also be addressed in the out year R&amp;D effort.</p> <p><b>(U) D. ACQUISITION STRATEGY FICCS:</b> FICCS will use the evolutionary acquisition strategy with the Block I variant consisting of the initial three JECCS systems. These systems are to be fielded during FY-04, with over \$1M of proposed Office of Naval Research Science and Technology (ONR S&amp;T) and \$80K Extended Littoral Battlespace Advanced Concept Technology Demonstration (ELB ACTD) (Wireless) efforts, FICCS Block II will consist of eleven (11) JECCS production units, which will include upgrades to emerging hardware/software. Exploring the Block II/III R&amp;D effort, FICCS Block III will incorporate emerging technologies such as VoIP, Secure Wireless, and possible ATM. into TDN equipment. RDTE funding in FY06 and FY07 are to be used to test and evaluate Commercial Of The Shelf (COTS) items which will be integrated into TDN Gateways and Data Distribution Systems (DDS) to fulfill ORD requirements.</p> <p><b>(U) E. Major Performers:</b></p> <p>FY05 - (NPM) NGIT, Winterpark, FL. SPEED enhancements; CECOM, Momouth, NJ. USMC JNMS adapters, MCOTEA, Quantico, VA, and FMF IOT&amp;E support, JAN 05</p> <p>FY06 - (NPM) NGIT, Winterpark, FL. SPEED enhancements; CECOM, Momouth, NJ. USMC JNMS adapters, JAN 06</p> <p>FY04/05 - (TSM) TBD, Prime Contractor, TSM prototype design/build/test, Jun 04</p> <p>FY 06/07 - (TSM) TBD, Prime Contractor, Integration and test of VoIP and Wireless technology</p> <p>FY06 - (ECCS) - Contractor TBD. Develop and test miniaturized components that provide DISN services while On-The-Move/Enroute.</p> <p>FY07(ECCS) - Contractor TBD. Develop and test miniaturized components that provide DISN services while On-The-Move/Enroute.</p> <p>FY05 - (FICCS) Darlington, Inc., Wando, SC. Hardware miniaturization and colaboration/testing with MCTSSA SIE &amp; JITC, OCT 05</p> <p>FY06 - (FICCS) EDO/Darlington, Inc., Wando, SC. Integration of VoIP, Secure Wireless, and ATM Technolgoies, OCT 06</p> <p>FY07 (FICCS) - EDO/Darlington, Inc., Wando, SC. Integration of VoIP, Secure Wireless, and ATM Technologies, OCT 07</p> <p>FY06 (TDN) - TBD</p> <p>FY07 (TDN) - TBD</p>		

Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev		0206313M Marine Corps Communications Sys			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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
NPM (JNMS)	CP	CECOM, Monmouth, NJ	0.265	0.000		0.000		0.550	01/07	Cont	Cont	
NPM (SPEED)	FP	MCSC, Quantico, Va	1.405	0.593	06/05	0.500	01/06	0.850	01/07	Cont	Cont	
ECCS	FFP	MCSC, Quantico, Va	0.000	0.000		0.900	11/05	0.600	11/06	Cont	Cont	
FICCS	CPFF	EDO/Darlington, Inc.	0.000	0.000		0.614	02/06	0.735	02/07	Cont	Cont	
FICCS	FFP	MCSC, Quantico, Va	0.000	0.312	03/05	0.000		0.000		0.000	0.312	
TSM	FFP	MCSC, Quantico, Va	4.477	1.989	10/04	1.625	10/05	0.000	10/06	Cont	Cont	
TSM	FFP	MCSC, Quantico, Va	0.000	0.090		0.000		0.000		0.000	0.090	
<b>Subtotal Product Dev</b>			<b>6.147</b>	<b>2.984</b>		<b>3.639</b>		<b>2.735</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
NPM (Program Support)	WR	MCSC/MCTSSA	0.314	0.000	10/04	0.143	10/05	0.150	10/06	Cont	Cont	
NPM (Support Contractor)	FP	OSEC, Stafford, Va	0.684	0.347	10/04	0.200	10/05	0.271	10/06	Cont	Cont	
ECCS	FFP	Support Contractor	0.000	0.000		0.600	11/05	0.600	11/06	Cont	Cont	
FICCS	CPFF	Support Contractor	0.450	0.000	10/04	0.300	11/05	0.418	11/06	Cont	Cont	
TDN	FFP	NGIT, Aquia, VA	0.000	0.000		0.225	11/05	0.000	11/06	Cont	Cont	
<b>Subtotal Support</b>			<b>1.448</b>	<b>0.347</b>		<b>1.468</b>		<b>1.439</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
ECCS	WR	MCOTEA	0.000	0.000		0.000		0.300	12/06	Cont	Cont	
FICCS	WR	MCTSSA	0.257	0.000		0.020	11/05	0.020	11/06	Cont	Cont	
FICCS	WR	JITC	0.000	0.000		0.100	03/06	0.000		0.000	0.100	
TDN	FFP	TBD				0.900	11/05	0.000	11/06	Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>0.257</b>	<b>0.000</b>		<b>1.020</b>		<b>0.320</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
<b>Subtotal Management</b>			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>0.000</b>	
Remarks:												
<b>Total Cost</b>			<b>7.852</b>	<b>3.331</b>		<b>6.127</b>		<b>4.494</b>		<b>Cont</b>	<b>Cont</b>	

Exhibit R-4/4a Schedule Profile/Detail		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems

## TRANSITION SWITCH MODULE



**Program Funding Summary**

(APPN, BLI #,

(U) RDT&E,N

(U) PMC BLI# 468800 Transition Switch Module (TSM)

(U) PMC BLI# 463400 Comm Switch & Control Sys

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	2.079	1.625	0.000	0.925	0.934	0.305	0.320	0.000	6.188
(U) PMC BLI# 468800 Transition Switch Module (TSM)	1.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.840
(U) PMC BLI# 463400 Comm Switch & Control Sys	0.000	27.540	19.813	12.892	16.904	8.719	2.106	0.000	87.974

Exhibit R-4/4a Schedule Profile/Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA 7 Operational Sys Dev

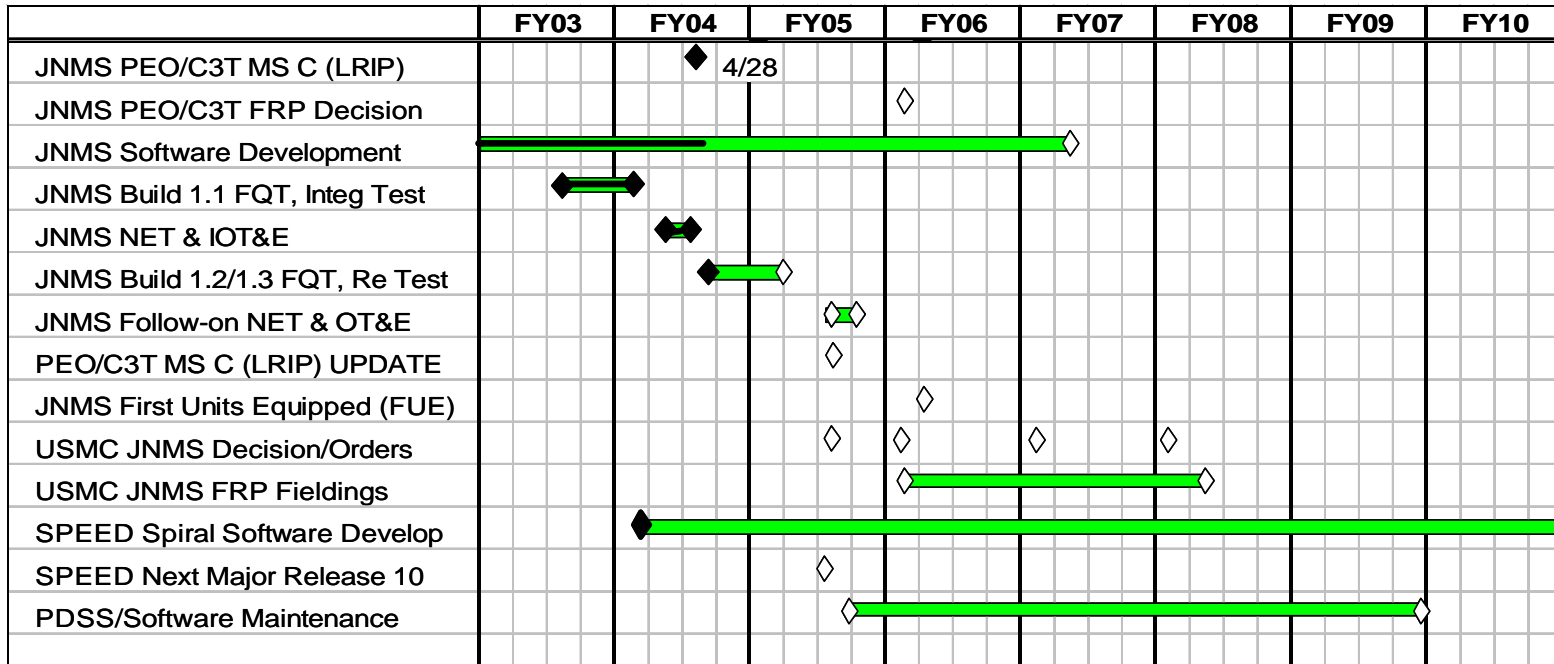
PROGRAM ELEMENT  
0206313M Marine Corps Communications Sys

PROJECT NUMBER AND NAME  
C2276 Communications Switching & Control Systems

TSM SCHEDULE DETAIL	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award	3Q							
Engineering Development Model Delivery (Qty 6)	4Q	3Q						
Operational Test/Joint Interoperability Certification			2Q					
Milestone C		3Q						
Production Option Award			2Q					
Fielding Begins			3Q					
Initial Operational Capability				1Q				
Fielding Ends/Full Operational Capability						3Q		

Exhibit R-4/4a Schedule Profile/Detail		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems

NPM (JNMS)



**Program Funding Summary**

(APPN, BLI #, NOMEN)

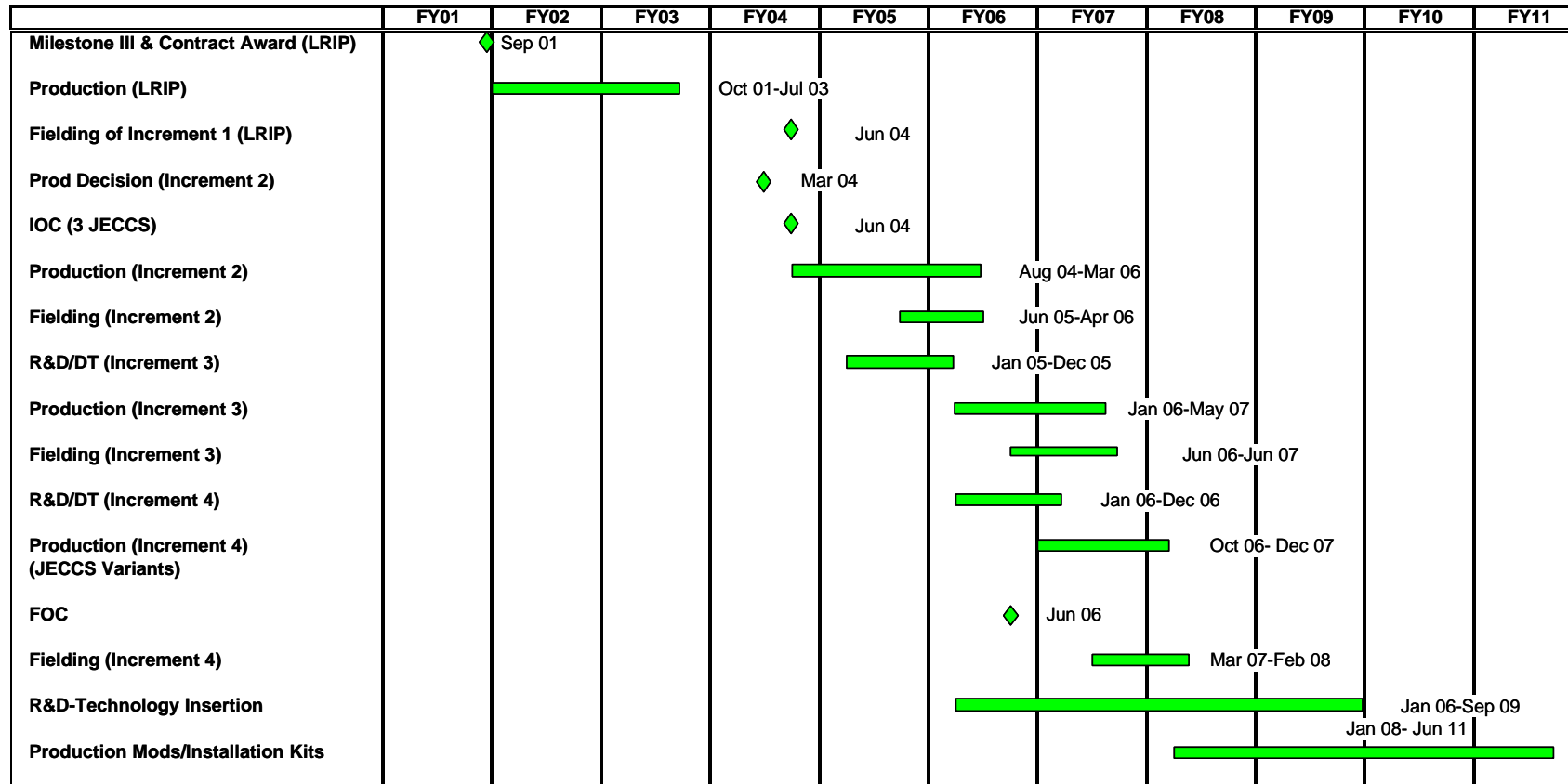
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.940	0.843	1.820	2.176	0.000	0.000	0.000	Cont	Cont
(U) PMC BLI# 463400 CommSwitch& Ctl Sys -NPM (JNMS)	2.989	6.528	0.000	2.232	0.000	0.000	0.000	0.000	11.749

<b>NPM (JNMS) SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MDA Full Rate Production (FRP) Decision			1Q					
JNMS Initial Build 1.2 Post IOT&E Assessment		1Q						
JNMS Enhanced Initial Build 1.3 OT&E		3Q						
MDA Updates MS C (LRIP) Decision		3Q						
JNMS First Units Equipped (FUE)			2Q					
USMC JNMS Orders		3Q	1stQ	1stQ	1stQ			
USMC JNMS FRP Fielding			1stQ	-----	2ndQ			
SPEED Next Major Release 10.0		3Q						
SPEED Spiral Software Development	1Q-----							
PDSS/Software/Subsequent Releases		3Q-----				4Q		



Exhibit R-4/4a Schedule Profile/Detail		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems

**FICCS**  
**Milestone Schedule / Total Resource Summary**



**Program Funding Summary**

**(APPN, BLI #, NOMEN)**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N	0.312	1.034	1.174	1.046	1.945	0.536	0.560	0.000	6.607
(U) PMC BLI# 463400 Comm Switch & Ctrl Sys - FICCS	3.438	10.859	0.000	0.768	0.846	0.000	0.000	0.000	15.911

Exhibit R-4/4a Schedule Profile/Detail		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N /BA 7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206313M Marine Corps Communications Sys</b>	PROJECT NUMBER AND NAME <b>C2276 Communications Switching &amp; Control Systems</b>

<b>FICCS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Fielding Decision - Increment 1 (LRIP)	3rdQ							
Production Decision - Increment II	2ndQ							
Full Rate Production of Increment II	4Q-----		2Q					
Fielding Decision - Block II		3Q	4Q					
Increment III R&D		2Q 05---	1Q					
Increment III Production			2Q	3Q				
Increment III Fielding			3Q	3Q				
R&D/DT Increment 4			2Q	1Q				
Production Increment 4 (JECCS Variant)				1Q	1Q			
FOC			3Q					
Fielding Increment 4				2Q	2Q			





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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev		0206313M Marine Corps Communications System		C2277 Systems Engineering & Integration				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		8.088	9.537	8.919	9.237	9.417	9.741	9.967
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
(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 across programs.								
<b>Joint Distributed Engineering Plant (JDEP)</b> is a DoD mandated program to evaluate the interoperability of the Federation of Systems (FedOS) C4ISR configurations that support joint forces, evaluate the interoperability of new acquisition system, and provide an environment for engineering analysis to correct systems deficiencies and develop new capabilities.								
<b>Joint Interoperability of Tactical Command and Control Systems (JINTACCS)</b> is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of data links under the direction of the Defense Information Systems Agency (DIAS).								
<b>Coalition Warrior Interoperability Demonstration (CWID)</b> (a.k.a. Joint Warrior InterOperability Demonstration (JWID)) is a Joint Chiefs-of-Staff (JCS) and a Chairman of the Joint 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.								
<b>Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, Coordination. (MAGTF C4I SEI&amp;C)</b> is a non-acquisition effort which provides centralized planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies and manages the configuration of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It is also used to conduct annual Federation-of-Systems (FEDOS) testing to determine the performance of critical Marine Corps systems-of-systems, directly supporting the Marine Corps Operating Forces.								
<b>(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:</b>								
COST (\$ in Millions)		FY 2005		FY 2006		FY 2007		
Accomplishment/Effort Subtotal Cost		1.385		1.417		1.465		
RDT&E Articles Qty								
<b>JDEP:</b> DoD mandated program to evaluate the interoperability of the Federation of Systems (FoS) C4ISR configurations that support joint forces, evaluate the interoperability of new acquisition systems, and provide an environment for engineering.								
COST (\$ in Millions)		FY 2005		FY 2006		FY 2007		
Accomplishment/Effort Subtotal Cost		1.636		1.461		1.542		
RDT&E Articles Qty								
<b>JINTACCS:</b> Joint development, implementation, and testing of data links under the direction of the Joint Interoperability Engineering Organization (JIEO).								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications System</b>	PROJECT NUMBER AND NAME <b>C2277 Systems Engineering &amp; Integration</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.097</b>	<b>1.178</b>	<b>1.251</b>
RDT&E Articles Qty				
<b>CWID:</b> to deter, prevent, and defeat threats and aggressions aimed at the US.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>3.970</b>	<b>5.481</b>	<b>4.661</b>
RDT&E Articles Qty				
<b>MAGTF SEI&amp;C:</b> Engineering and technical support for configuration management of MAGTF C4I systems and its migration to the DII COE. Assist Program Group Managers in meeting C4I Support Plans (KPPs). Maintain MSTAR system as technical roadmap to MAGTF C4				
<b>(U) Total \$</b>		<b><u>8.088</u></b>	<b><u>9.537</u></b>	<b><u>8.919</u></b>
<b>(U) PROJECT CHANGE SUMMARY:</b>	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>	
<b>(U) FY 2006 President's Budget:</b>	<b>7.787</b>	<b>9.697</b>	<b>8.877</b>	
(U) Adjustments from the President's Budget:				
(U) Congressional Program Reductions				
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings	0.393			
(U) SBIR/STTR Transfer	-0.088			
(U) Minor Affordability Adjustment	-0.004	-0.160	0.042	
<b>(U) FY 2007 President's Budget:</b>	<b>8.088</b>	<b>9.537</b>	<b>8.919</b>	
CHANGE SUMMARY EXPLANATION:				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A</b>				
<b>(U) Related RDT&amp;E:</b>				
(U) PE 0206623M, Marine Corps Ground Combat/Supporting Arms Systems				
<b>(U) D. ACQUISITION STRATEGY:</b>				
JDEP, JINTACCS, CWID, & MAGTF SE&IC: N/A as these are non-acquisition programs.				
<b>(U) E. Major Performers:</b> FY02-FY05 Northrup Grumman, Stafford VA - Level of effort contract for logistics support, engineering, analytical, acquisition and program management for C4I programs in the areas of systems architectures, configuration management, interoperability and integration.				

Exhibit R-3 Cost Analysis				DATE: February 2006								
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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CWID	MIPR	NSWC Dahlgren	2.483	0.740	12/04	0.755	12/06	0.752	12/06	Cont	Cont	
CWID	WR	MCSC Quantico, VA	0.116	0.020	10/04	0.013	12/06	0.032	12/06	Cont	Cont	
CWID	MIPR	JTIC -INDIAN HEAD	0.116	0.040	10/04	0.033	12/06	0.045	12/06	Cont	Cont	
<b>Subtotal Product Dev</b>			<b>2.715</b>	<b>0.800</b>		<b>0.801</b>		<b>0.829</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
			1.385			5.481					4.661	
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CWID	C/FFP	NGIT, Stafford VA	1.724	0.297	10/04	0.377	12/05	0.422	12/06	Cont	Cont	
MAGTF SEI&C	C/FFP	NGIT, Stafford VA	4.416	2.431	10/04	2.673	10/05	1.695	10/06	Cont	Cont	
MAGTF SEI&C	WR	MCSC, Quantico, VA	0.768	0.078	10/04	0.094	10/05	0.145	10/06	Cont	Cont	
MAGTF SEI&C	WR	MCTSSA, Cp Pndltn, CA	0.561	0.862	10/04	1.042	10/05	1.083	10/06	Cont	Cont	
JDEP	T&M	SENSIS Syracuse NY	0.593	0.069	05/05	0.052	05/06	0.072	05/07	Cont	Cont	
JDEP	MPR	NSWC - Crane	0.324	0.140	02/05	0.307	02/06	0.329	05/07	Cont	Cont	
JINTACCS	C/FFP	NGIT, Stafford VA	0.593	0.672	10/04	0.861	10/05	0.901	10/06	Cont	Cont	
JINTACCS	WR	MCTSSA, Cp Pndltn, CA	0.561	0.964	10/04	0.600	10/05	0.641	10/06	Cont	Cont	
<b>Subtotal Support</b>			<b>9.540</b>	<b>5.513</b>		<b>6.006</b>		<b>5.288</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JDEP	WR	MCTSSA, Cp Pndltn, CA	0.656	1.176	10/04	1.058	10/05	1.064	10/06	Cont	Cont	
MAGTF SEI&C	MIPR	MITRE	3.119	0.270	10/04	1.339	10/05	1.381	10/06	Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>3.775</b>	<b>1.446</b>		<b>2.397</b>		<b>2.445</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MAGTF SEI&C	C/FFP	NGIT, Stafford VA	0.404	0.329	10/04	0.333	10/05	0.357	10/06	Cont	Cont	
<b>Subtotal Management</b>			<b>0.404</b>	<b>0.329</b>		<b>0.333</b>		<b>0.357</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>16.434</b>	<b>8.088</b>		<b>9.537</b>		<b>8.919</b>		<b>Cont</b>	<b>Cont</b>	

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EXHIBIT R-2a, RDT&E Project Justification				DATE:				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>				PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications System</b>			PROJECT NUMBER AND NAME <b>C2278 Air Defense Weapons Systems</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>20.247</b>	<b>16.001*</b>	<b>6.423</b>	<b>10.940</b>	<b>6.374</b>	<b>5.490</b>	<b>5.071</b>	
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
(U) This project encompasses two sub-element programs which are part of the Integrated Air Defense System for the Marine Corps.								
<p><b>1. The Complementary Low Altitude Weapons System (CLAWS)</b> is a mobile ground based air defense missile system designed to defeat threat cruise missiles, unmanned aerial vehicles, rotary wing and fixed wing aircraft. CLAWS shall provide a rapidly deployable, mobile, high firepower, all-weather, standoff air defense system to defend Marine Expeditionary Forces and Naval Forces from attack by cruise missiles, aircraft and UAVs. It will complement existing Short Range Air Defense (SHORAD) capabilities and will interface with current and proposed Marine Command and Control Systems, sensors, and data paths. CLAWS Increment-0 will provide the initial capability. CLAWS Increment-1 will align with and become the launcher for Army Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) Increment-1 program. The Marine Corps relies on the Army SLAMRAAM Increment-1 program to develop the final threshold capability with the CLAWS Increment-1 launcher.</p> <p><b>2. Ground Based Air Defense Transformation (GBAD-T):</b> Based upon the deployment of the Low Altitude Air Defense (LAAD) Battalion 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 four 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) replaces the Remote Terminal Unit, an effort that replaces an 18 pound laptop computer that provides Situational Awareness and Command and Control to the Stinger and A-MANPAD teams. Replacement will interface with and be capable of receiving a Common Aviation Command and Control Systems (CAC2S) broadcasted link; and 4) Replaces the unsupportable and obsolete Stinger Missile Night Sight with the PAS-13 Thermal Sight. R&amp;D is required to incorporate the Stinger Missile reticule and hardware interface and execute developmental testing. The PAS-13 provides twice the</p> <p><b>3. Mounted Cooperative Target ID System (MCTIS)</b> (formerly known as Combat Identification (CID)) - 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 Vehicle (EFVs), Light Amphibious Vehicles (LAVs), and MIA1s; 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.</p> <p><b>4. The Joint Combat Identification Evaluation Team (JCIET)</b> is a superb 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.)</p>								
* <b>\$3.7M of FY 2006 funds will be used to forward finance FY 2007</b>								



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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications System</b>	PROJECT NUMBER AND NAME <b>C2278 Air Defense Weapons Systems</b>	
<b>(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.903</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>CLAWS:</b> Development, design, test and integration issues related to the six Production Representative Systems.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>11.457</b>	<b>0.791</b>	<b>1.073</b>
RDT&E Articles Qty			
<b>CLAWS:</b> Complete Increment 0 Developmental Testing (DT), Operational Testing (OT), and develop a capability with the CLAWS Increment I launcher.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.720</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>CLAWS:</b> Interim Contract Support for Pre-Fielding Increment I assets.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>3.932</b>	<b>1.514</b>	<b>1.369</b>
RDT&E Articles Qty			
<b>CLAWS:</b> Program Management Support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.076</b>
RDT&E Articles Qty			
<b>JCIET:</b> Logistics support for JCIET exercise. Funding prior to FY07 is found in Project C2273 within this PE.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.760</b>
RDT&E Articles Qty			
<b>JCIET:</b> Data and analysis for exercise. Funding prior to FY07 is found in Project C2273 within this PE.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.025</b>
RDT&E Articles Qty			
<b>JCIET:</b> Program management support Funding prior to FY07 is found in Project C2273 within this PE.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.121</b>	<b>1.799</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GBAD TRANSFORMATION:</b> Program Management Services			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.772</b>	<b>3.700</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GBAD TRANSFORMATION:</b> Product Development (CLAWS /CAC2S Integration)			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GBAD TRANSFORMATION:</b> Product Development (Remote Terminal Unit Replacement)			

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communications System</b>	<b>C2278 Air Defense Weapons Systems</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.065</b>	<b>1.100</b>	<b>0.620</b>
RDT&E Articles Qty			
<b>GBAD TRANSFORMATION: Integration development/test ( PAS-13 Integration)</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.985</b>	<b>0.440</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>GBAD TRANSFORMATION: Support Costs (MCTSSA/MCCDC/Crane support)</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.812</b>	<b>1.000</b>	<b>1.000</b>
RDT&E Articles Qty			
<b>MCTIS: Program management support.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.500</b>	<b>1.000</b>	<b>0.500</b>
RDT&E Articles Qty			
<b>MCTIS: Test and evaluation as part of the coalition CID ACTD analysis.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.300</b>	<b>1.137</b>	<b>0.700</b>
RDT&E Articles Qty			
<b>MCTIS: Engineer Design Model.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.150</b>	<b>0.300</b>	<b>0.100</b>
RDT&E Articles Qty			
<b>MCTIS: Risk reduction.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.500</b>	<b>0.200</b>
RDT&E Articles Qty			
<b>MCTIS: Support software development.</b>			
<b>(U) Total \$</b>	<b><u>20.247</u></b>	<b><u>16.001</u></b>	<b><u>6.423</u></b>
<b>(U) PROJECT CHANGE SUMMARY:</b>	<b><u>FY2005</u></b>	<b><u>FY2006</u></b>	<b><u>FY2007</u></b>
<b>(U) FY 2006 President's Budget:</b>	<b>22.535</b>	<b>16.253</b>	<b>15.742</b>
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-1.968		1.351
(U) SBIR/STTR Transfer	-0.303		
(U) Minor Affordability Adjustment	-0.017	-0.252	-10.670
<b>(U) FY 2007 President's Budget:</b>	<b>20.247</b>	<b>16.001</b>	<b>6.423</b>
<b>CHANGE SUMMARY EXPLANATION:</b>			
(U) Funding: See Above.			
(U) Schedule: Not Applicable			
(U) Technical: Not Applicable.			

**UNCLASSIFIED**

**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

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**

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC LINE BLI 489000 CLAWS	6.144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.144
(U) PMC LINE BLI 305100 CLAWS	0.000	0.418	3.155	2.353	33.689	31.056	17.305	Cont	Cont
(U) PMC LINE BLI 300600 GBAD-T	9.758	1.891	3.894	1.975	12.421	11.533	14.353	Cont	Cont

**(U) Related RDT&E:**

PE 0603216C (Ballistic Missile Defense Organization, Theater Missile Defense)

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

**(U) CLAWS:** CLAWS integrates government furnished equipment (GFE), non-developmental items (NDI) and new technology to develop a surfaced launched Anti-Air launcher. CLAWS will utilize the AMRAAM (current inventory DoD missile), existing High Mobility Multi-purpose Wheeled Vehicle (HMMWV) and contractor developed missile launch platform. CLAWS completed Developmental Test (DT) in FY05 and completed Operational Test (OT) during 1st Qtr FY06. IOC will occur no later than 4th Qtr FY06. CLAWS provides a Joint Emergency Operational Capability from FY06-FY09 and provides concept validation and risk mitigation for the SLAMRAAM program. CLAWS Increment I will align with and become the launcher for SLAMRAAM Increment I. The Marine Corps relies on SLAMRAAM Increment I program to develop the final threshold capability with the CLAWS Increment I launcher.

**(U) GBAD- TRANSFORMATION:** 1) GBAD sustainment provides the LAAD Battalions with the equipment required to maintain an Air Defense capability in support of the MAGTF mission. The sustainment program provides lifecycle management functions to support continuous and improved training, obsolescence mitigation through technology and use of commercial or government off-the-shelf equipment, and reduced ownership costs. 2) The Advanced MANPADS is a low risk, low-cost effort that has been designated an Abbreviated Acquisition Program and will enter the acquisition phase at Milestone C, with a fielding decision currently planned for Jan 06. 3) The RTU replacement requires a two year commitment to design, fabricate and test. Following a successful test, out year PMC will support procurement. 4) The PAS-13 Thermal Sight will replace the obsolete and unsupportable Stinger Night Sight (PAS-18). The PAS-13 has been put on contract to support the LAAD units M240B Machine Guns. Using existing DOD contracts with the manufacturer, the Stinger Missile reticule and hardware interfaces are being developed that will double the range and reduce the weight by 50%. This capability will provide a common Thermal Sight for all medium machine guns and the Stinger Missile system.

**(U) MCTIS:** Economy of scales dictate a strategy that highly leverages Joint/coalition evolutionary development efforts. The FY03- FY05 Coalition Combat ID Advanced Concept Technology Demonstration (CCID ACTD) process will evaluate several millimeter wave (mmW) Target Identification systems with the objective of identifying the best system to satisfy the Marine Corps requirement. FY04/05 efforts will focus on unique system integration efforts required on Marine Corps vehicles not already accomplished through similar Joint efforts. It is anticipated system procurement acquisition will be accomplished on a Joint/coalition basis to take advantage of parallel support efforts.

**(U) E. MAJOR PERFORMERS:**

**CLAWS:**

FY05 Raytheon, Tewksbury, MA. System Development & Demonstration; Operational Testing.

FY06 Raytheon, Tewksbury, MA. Fielding/sustainment for CLAWS Increment 0 Launchers. SLAMRAAM Increment I System Development;CLAWS Increment I Launcher DT.

FY07 Raytheon, Tewksbury, MA. System Development and Demonstration; Developmental Test.

**GBAD Transformation:**

FY05 AT&T, Vienna, VA. Modeling and Simulation.

FY06 DRS Palm Bay, FL PAS-13 HW/SW Integration

FY06 Raytheon, Tewksbury, MA RTU Replacement, S/W Integration

FY06 Raytheon, Tewksbury, MA. GBAD/CLAWS Integration.

FY07 NSWC, Crane, IN. Technical Engineering Services.

**MCTIS:**

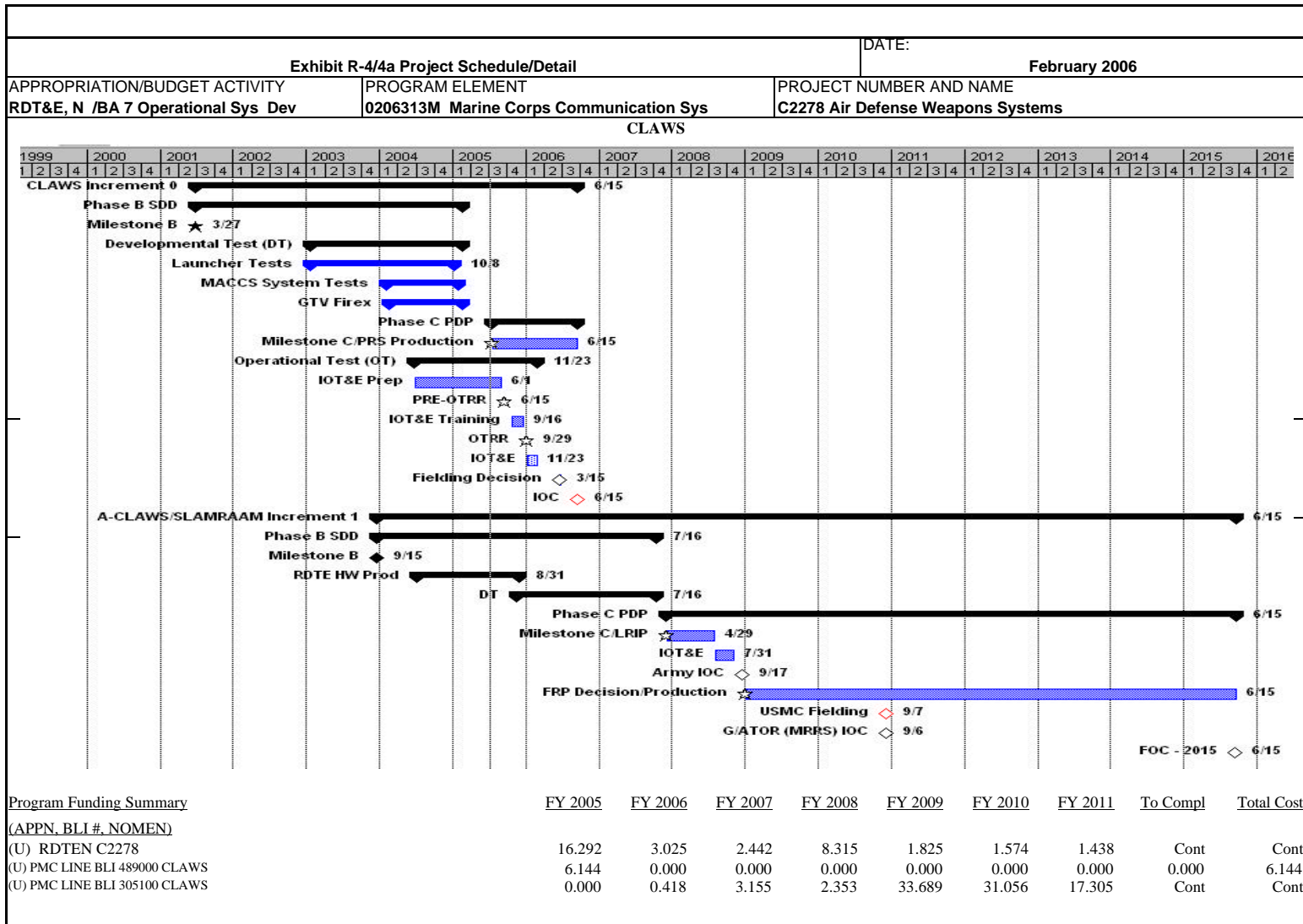
FY05-FY07 NSWC, Crane, IN Engineering Services.

FY05-FY07 MarCorSysCom (PA&E) LCCE Effort. Contractor Techolote

FY05-FY07 MarCorSysCom CEOSS support contract recompeted in Sep 04. Contractor Anteon

Exhibit R-3 Cost Analysis					DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communica		C2278 Air Defense Weapons Systems							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
CLAWS	RCP	Raytheon, Andover, MA	16.840	0.903	03/05	0.157	01/06	0.113	01/07	Cont	Cont	
GBAD TRANSFORMATION	WR	NSWC, Crane, IN(PAS-13 HW)	0.000	0.772	02/05	0.500	06/06			Cont	Cont	
GBAD TRANSFORMATION	RCP	EG&G, Stafford, VA	0.000	0.188	10/04	0.310	12/06			Cont	Cont	
GBAD TRANSFORMATION	RCP	DRS Tech, Palm Bay FL (PAS-13 SW)				0.500	05/06					
GBAD TRANSFORMATION	RCP	Raytheon, Tewksbury, MA (RTU)				1.000	06/06			Cont	Cont	
GBAD TRANSFORMATION	RCP	Raytheon, SanDiego,CA (CAC2S)	0.000			3.700	02/06			0.000	1.500	1.000
GBAD TRANSFORMATION	RCP	MCSC, QUANTICO, VA	0.000			1.314	01/06					
MCTIS (CID)	WR	NSWC, Crane, IN	0.994	0.974	10/04	2.837	02/06	1.900	01/07	Cont	Cont	
JCIET	WR	MCSC, Quantico, VA						0.390	01/07	Cont	Cont	
JCIET	WR	NSWC, Crane, IN						0.335	01/07	Cont	Cont	
JCIET	RCP	Anteon, Stafford, VA						0.111	01/07	Cont	Cont	
JCIET	MIPR	CECOM, Ft Monmouth						0.025	01/07	Cont	Cont	
<b>Subtotal Product Dev</b>			<b>17.834</b>	<b>2.837</b>		<b>10.318</b>		<b>2.874</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
CLAWS	WR	MCSC, Quantico, Va	0.401	0.025	01/05			0.025	01/07	Cont	Cont	
CLAWS	WR	MCCDC, Quantico, VA	0.200	0.090	01/05			0.094	01/07	Cont	Cont	
GBAD TRANSFORMATION	WR	MCTSSA Cp Pendleton CA				0.120	11/05					
GBAD TRANSFORMATION	WR	NSWC, Crane, IN(ADCP GBDL-E)	0.130			0.395	01/06					
GBAD TRANSFORMATION	RCP	MCCDC, Quantico, VA	0.000	0.798	10/04	0.050	10/05			0.000	1.298	1.298
GBAD TRANSFORMATION	RCP	MCCDC, Quantico, VA	0.000			0.050	04/06			0.000	1.298	1.298
<b>Subtotal Support</b>			<b>0.731</b>	<b>0.913</b>		<b>0.615</b>		<b>0.119</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
CLAWS	RCP	Raytheon, Andover, MA	3.999	2.074	06/05	0.171	01/06			Cont	Cont	
CLAWS	RCP	MCSC Quantico, VA	0.646	1.080	01/05					Cont	Cont	
CLAWS	MIPR	White Sands, NM	2.551	1.769	03/05					Cont	Cont	
CLAWS	WR	MCOTE, Quantico, VA	0.725	1.037	01/05	0.620	01/06	0.025	01/07	Cont	Cont	
CLAWS	MIPR	JSPO, Eglin, AFB, FL	3.154	1.728	06/05					Cont	Cont	
CLAWS	MIPR	Pt. Mugu, CA	2.045	0.447	03/05					Cont	Cont	
CLAWS	MIPR	PEO ASMD		1.906	06/05					Cont	Cont	
CLAWS	MIPR	SHORAD		1.274	01/05					Cont	Cont	
CLAWS	MIPR	Aberdeen, Maryland		0.142	03/05							
GBAD TRANSFORMATION	MIPR	WSMR, NM (PAS-13/ RTU Testing)	0.000	0.138	07/05			0.611	03/07	0.000	0.138	
GBAD TRANSFORMATION	MIPR	Aberdeen, MD	0.000	0.047	06/05					0.000	0.047	
<b>Subtotal T&amp;E</b>			<b>13.120</b>	<b>11.642</b>		<b>0.791</b>		<b>0.636</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

Exhibit R-3 Cost Analysis					DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communica		C2278 Air Defense Weapons Systems							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
CLAWS	RCP	NGIT, Stafford, VA	4.204	2.085	02/05	1.600	01/06	1.700	01/07	Cont	Cont	
CLAWS	WR	MCTSSA Cp Pendleton CA	0.024	0.240	01/05			0.060	01/07	Cont	Cont	
CLAWS	WR	NSWC Crane, IN	0.618	0.446	04/05			0.285	01/07	Cont	Cont	
CLAWS	MIPR	AMRDEC Redstone Arsenal, AL	0.598	0.655	01/05	0.477	02/06	0.140	01/07	Cont	Cont	
CLAWS	WR	MCSC, Quantico	0.531	0.391	01/05					Cont	Cont	
GBAD TRAANSFORMATION	WR	MCSC,QUANTICO, VA	0.000			1.100	12/05	0.009	12/06	Cont	Cont	
MCTIS (CID)	RCP	Anteon, Stafford, VA	1.291	0.900	10/04	1.000	01/06	0.500	01/07	Cont	Cont	
MCTIS (CID)	WR	MCSC, Quantico, VA	0.056	0.031	01/05	0.020	10/05	0.030	01/07	Cont	Cont	
MCTIS (CID)	RCP	Tecolote, Goleta, CA	0.000	0.074	01/05	0.080	03/06	0.070	03/07	0.000	0.075	
MCTIS (CID)	RCP	CACI, Chantilly, VA	0.000	0.033	10/04							
<b>Subtotal Management</b>			<b>7.322</b>	<b>4.855</b>		<b>4.277</b>		<b>2.794</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Costs</b>			<b>39.007</b>	<b>20.247</b>		<b>16.001</b>		<b>6.423</b>		<b>Cont</b>	<b>Cont</b>	

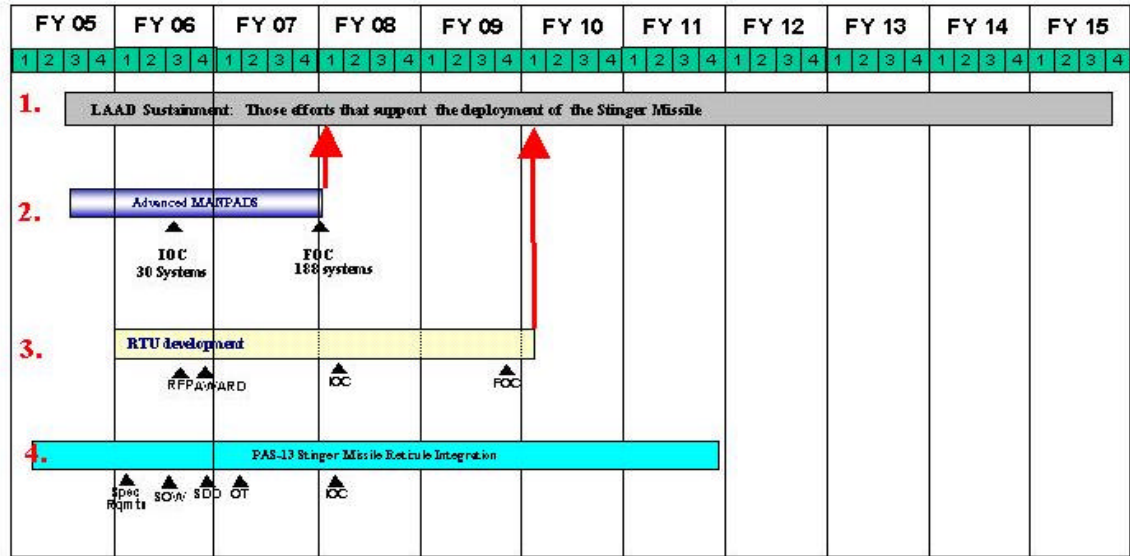


<b>Exhibit R-4/4a Project Schedule/Detail</b>						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>		PROGRAM ELEMENT <b>0206313M Marine Corps Communication Sys</b>			PROJECT NUMBER AND NAME <b>C2278 Air Defense Weapons Systems</b>			
<b>CLAWS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
<b>Increment 0</b>								
Development Testing		2nd Qtr						
LRIP Decision		3rd Qtr						
Operational Testing			1st Qtr					
Fielding Decision			2nd Qtr					
Initial Operational Capability			3rd Qtr					
<b>Increment I</b>								
Development Testing				3rd Qtr				
LRIP Production					2nd Qtr			
Operational Testing					4th Qtr			
Fielding Decision					4th Qtr			
Initial Operational Capability					4th Qtr			



## Acquisition Timeline

### USMC Ground Based Air Defense (GBAD) (T) Transformation



1

1/17/2006

Program Funding Summary

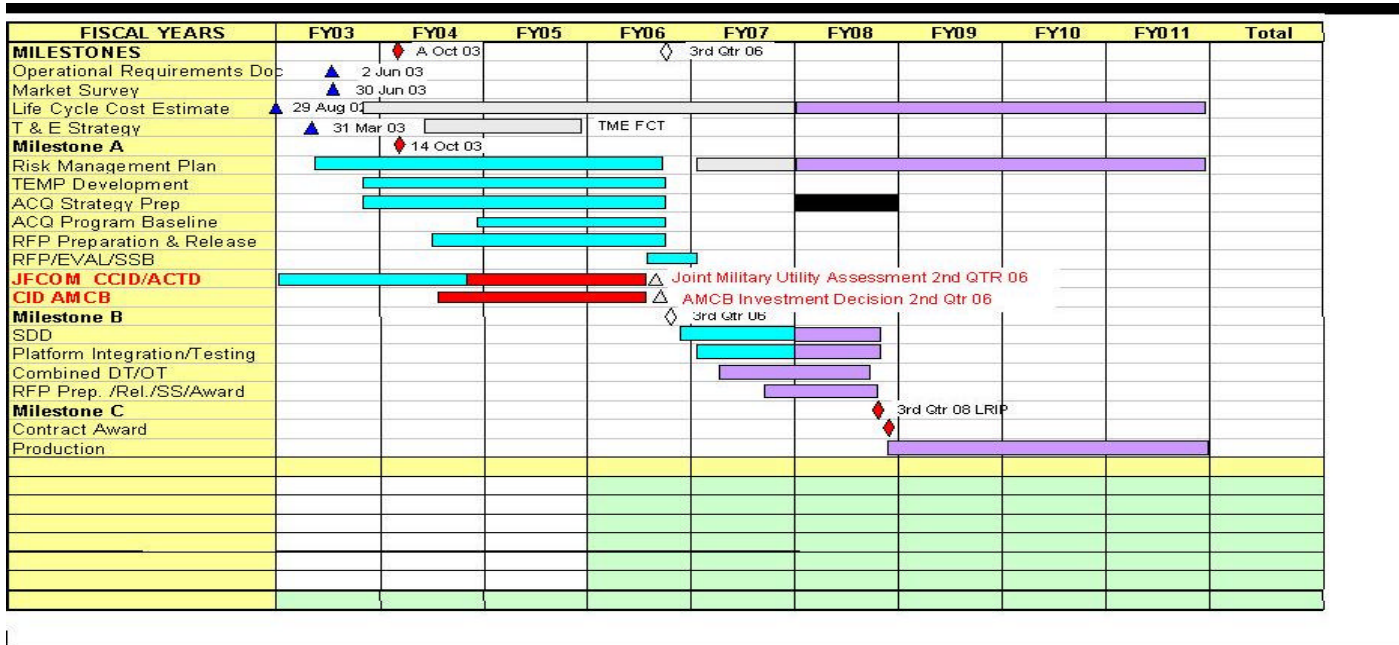
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) RDTEN C2278	1.943	9.039	0.620	4.174	4.392	3.788	4.231	Cont	Cont
(U) PMC LINE BLI 300600 GBAD-T	9.758	1.891	3.894	1.975	12.421	11.533	14.353	Cont	Cont



Exhibit R-4/4a Project Schedule/Detail						DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev	0206313M Marine Corps Communication Sys	C2278 Air Defense Weapons Systems								
GBAD TRANSFORMATION SCHEDULE DETAIL	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
<b>Advanced MANPADS (AAP)</b>										
Milestone C/ Full Rate Production			1st Qtr							
Fielding Decision			2nd Qtr							
IOC			3rd Qtr							
FOC				3rd Qtr						
<b>Remote Terminal Unit (RTU Replacement)</b>										
Design and Interface Requirements (internal)			3rd Qtr							
Command and Control Protocol (CAC2S)			3rd Qtr							
CAC2S Interface (External)				2nd Qtr						
RTU Replacement Testing				2nd Qtr						
RTU Replacement Fielding					2nd Qtr					
<b>PAS-13 Thermal Sight (Stinger Reticule)</b>										
Requirements / Specifications			2nd Qtr							
Request for Proposal			2nd Qtr							
System Development and Demonstration			4th Qtr							
Operational Testing/FUE				1st Qtr						
Fielding					1st Qtr					

Exhibit R-4/4a Project Schedule/Detail		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communication Sys	PROJECT NUMBER AND NAME C2278 Air Defense Weapons Systems

### MCTIS Program Schedule



Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(APPN, BLI #, NOMEN)									
(U) R&D Air Def Weaps Sys (MTIS)	2.012	3.937	2.500	0.000	0.000	0.000	0.000	0.000	8.449

<b>Exhibit R-4/4a Project Schedule/Detail</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206313M Marine Corps Communication Sys</b>	PROJECT NUMBER AND NAME <b>C2278 Air Defense Weapons Systems</b>

MCTIS SCHEDULE DETAIL	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone A	1st Qtr							
Milestone B			3rd Qtr					
Integration Testing				1st Qtr				

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>					DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>			PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		<b>4.173</b>	<b>8.806</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(U) Training simulators supported by this program element include Joint Simulation System (JSIMS), Closed Loop Artillery Simulation System (CLASS), Multiple Integrated Laser Engagement System (MILES 2000), Special Effect Small Arms Marking System (SESAMS), Combined Arms Command &amp; Control Training Upgrade System (CACCTUS), MAGTF Tactical Warfare Simulation (MTWS) Enhancements, Combat Team Decision, and Joint National Training Center (JNTC) Investment. These training systems provide tactical weapons and decision-making skill training from entry level through Marine Air-Ground Task Force (MAGTF) staff level. CLASS integrates Marine Corps training requirements with the Advanced Field Artillery Tactical Data System (AFATDS). 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.</p> <p><b>NOTE: Funding for this project in FY07 and beyond is found in PE 0206623M.</b></p>								
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>								
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost		<b>2.876</b>	<b>5.666</b>	<b>0.000</b>				
RDT&E Articles Qty								
<p><b>CACCTUS:</b> Initial Proto-type installed at 29 Palms, CA for verification and validation testing by Tactical Training Exercise Control Group (TTECG). Transitioning continues from test bed to target simulation engine. Integration of operation C4I systems with sim. Development and integration of sim interfaces and visualization tools.</p>								
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost		<b>0.369</b>	<b>1.582</b>	<b>0.000</b>				
RDT&E Articles Qty								
<p><b>MILES:</b> Develop Dry Fire Trigger capability, develop extended service capability for the Automatic Small Arms Alignment Fixtures (ASAAF), develop Wireless RF Detectors belt, and integrate MK19 40 mm machine gun capability into existing MILES 2000 inventory.</p>								
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost		<b>0.540</b>	<b>1.558</b>	<b>0.000</b>				
RDT&E Articles Qty								
<p><b>MTWS Enhancements:</b> The MTWS support initiative includes software and system development support, training network infrastructure support, and hardware support to include: Develop an HLA interface between MTWS and other simulation models, such as Joint Conflict and Tactical Simulation (JCATS) and other selected models. Develop MTWS-C4I interoperability with Command and Control PC (C2PC), Army Field Artillery Tactical Data System (AFATDS), Theater Battle Management Corps System (TBMCS), and Common Aviation Command and control System (CAC2S). Enhanced man machine interface for efficient exercise generation and execution processes, and reduce the number of exercise operators and controllers. Refresh computer hardware training suites, and supporting training communication network infrastructure. Develop Course of Actions and Analyses (COAA) capability. Rules of Engagement for multi-sided warfare and organizations. Airborne Electronic Warfare and Advanced synthetic natural environment upgrade.</p>								
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost		<b>0.388</b>	<b>0.000</b>	<b>0.000</b>				
RDT&E Articles Qty								
<p><b>Manpower Training Analysis (MTA):</b> Provides MTA support to prioritized collection of Marine Corps System Command (MCSC) sponsored acquisition programs. Provides for development of training plans, conduction of front-end-analysis to assess Total Force Structure impacts and interfacing with TECOM to institutionalize life cycle processes.</p>								
<b>(U) Total \$</b>		<b>4.173</b>	<b>8.806</b>	<b>0.000</b>				

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>							
<b>(U) PROJECT CHANGE SUMMARY:</b>									
	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>						
<b>(U) FY 2006 President's Budget:</b>	<b>4.804</b>	<b>8.941</b>	<b>7.333</b>						
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings									
	-0.511								
(U) SBIR/STTR Transfer									
	-0.117								
(U) Minor Affordability Adjustment									
	-0.003	-0.135	-7.333						
<b>(U) FY 2007 President's Budget:</b>	<b>4.173</b>	<b>8.806</b>	<b>0.000</b>						
(U) Funding: See above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI# 653200 Trng Dev/Sims	96.546	57.581	13.797	30.651	55.935	17.889	18.609	Cont	Cont
<b>(U) Related RDT&amp;E: Not Applicable</b>									
<b>(U) D. ACQUISITION STRATEGY:</b>									
(U) <b>CACCTUS</b> - Competitive Cost plus Fixed Fee contract (CPFF).									
(U) <b>MILES</b> - Competitively award Cost Plus Incentive Fee (CPIF) development contract.									
(U) <b>MTWS Enhancements</b> - Competitively award Cost Plus Incentive Fee (CPIF) development contract.									
(U) <b>Manpower Training Analysis</b> - Competitively award service contract.									
<b>(U) E. MAJOR PERFORMERS:</b>									
Not Applicable for any programs with Training Devices/Simulators, C2315.									

Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N /BA 7 Operational Sys Development			0206313M Marine Corps Communication Systems				C2315 Training Devices/Simulators					
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Dev - MILES	SS/FP	PAE, Deland FL	0.000	0.058	12/04					0.000	0.058	
Product Dev - MILES	SS/FP	Saab, Orlando, FL (Wireless)	0.000	0.000		0.327	02/06			0.000	Cont	
Product Dev - MILES	SS/FP	Unitech, Orlando, FL (DT)	0.000	0.000		0.050	02/06			0.000	0.050	
Product Dev - MILES	SS/FP	Unitech, Orlando, FL (ASAAF)				0.160	02/06			0.000	0.160	
Product Dev - MILES	SS/FP	Unitech, Orlando, FL (MK19)				0.240	02/06			0.000	0.240	
Subtotal Product Dev			0.000	0.058		0.777		0.000		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SW Dev - Miles	SS/FP	Saab, Orlando, FL (Wireless)				0.327	02/06			0.000	0.327	
SW Dev - Miles	SS/FP	Unitech, Orlando, FL (ASAAF)				0.040	02/06			0.000	0.040	
SW Dev - Miles	SS/FP	Unitech, Orlando, FL (MK19)				0.060	02/06					
Software Dev-CACCTUS	CPFF*	PM TRASYS, Orlando, FL	0.000	2.189	04/05	2.801	01/06			0.000	4.990	
Software Dev-CACCTUS	CPFF*	PM TRASYS, Orlando, FL	0.000	0.625		2.473	03/06			0.000	3.098	
SW Dev, CACCTUS	C/DIQ	NAWC, Orlando, FL	1.400	0.062	04/05	0.392	01/06			0.000	1.854	
SW Dev, CACCTUS	MIPR	PEO STRI, Orlando FL	1.954							0.000	1.954	
Dev Support - MTWS	SS/T&M	PM TRASYS, Orlando, FL	0.000	0.540	01/05	1.341	10/05			0.000	1.881	
Subtotal SW Dev Support			3.354	3.416		7.434		0.000		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T & E - MILES	WR	Brooks, AFB, TX	0.000	0.050	01/05						0.050	
T & E - MILES	WR	Crane, IN (Omega 36)	0.000	0.051	01/05						0.051	
T & E - MILES	WR	Dahlgren, VA	0.000	0.010	02/05						0.010	
T & E - MILES	WR	MCSC, Quantico, VA	0.000	0.005	02/05						0.005	
T & E - MILES	WR	Crane, IN	0.000	0.050	10/04						0.050	
Subtotal Dev T&E			0.000	0.166		0.000		0.000		Cont	Cont	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support - MTWS	SS/T&M	MCSC, Quantico, VA	0.000			0.214	10/05				0.214	
Program Support - MTA	C/DIQ	MCSC, Quantico, VA	0.000	0.388	04/05						0.388	
Program Spt - MILES	WR	NAWC, Orlando, FL	0.191	0.145	10/04						0.336	
Subtotal Management Spt			0.191	0.533		0.214		0.000		Cont	Cont	
Remarks:												
Total Cost			3.545	4.173		8.425		0.000		Cont	Cont	

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EXHIBIT R-2a, RDT&E Project Justification					DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Systems Dev</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Systems</b>			PROJECT NUMBER AND NAME <b>C2510 MAGTF CSSE &amp; SE</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost		<b>17.278</b>	<b>17.453</b>	<b>35.311</b>	<b>20.874</b>	<b>26.271</b>	<b>17.047</b>	<b>25.696</b>
RDT&E Articles Qty								
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(U) The MAGTF Combat Service Support Element &amp; Supporting Establishment (CSSE &amp; 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.</p> <p><b>Automated Information Technology (AIT)</b> is the proper mix of a suite of technologies that enables the user to efficiently and effectively capture, aggregate, transfer data and, integrate with Logistics Automated Information Systems (LOG AIS) using the optimum technology. Individual user's data and information will be integrated with DoD-wide systems technologies, software, and encoding formats as well as international commercial applications. AIT will facilitate data collection and flow to other AISs to better achieve Total Asset Visibility (TAV), enhancing and streamlining business processes and warfighting capability. AIT will remain interoperable with current DoD applications and capable of assimilating process and technological advancements.</p> <p><b>Transportation Systems Portfolio</b> (formerly known as TC-AIMS II) funding supports the fielding, maintenance and sustainment of two Joint deployment programs—Integrated Computerized Deployment System (ICODES) and Aircraft Air Load Planning System (AALPS)—as well as the software maintenance and sustainment of our existing legacy systems—MAGTF LOGAIS (MDSS II/TC AIMS), Cargo Movement Operations System (CMOS), and Automated Manifest System – Tactical (AMS-TAC).</p> <ul style="list-style-type: none"> <li>- MDSS II (MAGTF Deployment Support System II) allows planners at the unit level to rapidly create lists of deploying equipment and personnel in response to taskings received from higher headquarters. Unit planners can compare on-hand assets to requirements and assign equipment and personnel to specific carriers for both sea deployments and air embarkations. It also provides the Marine Air Ground Task Force (MAGTF) Commander with the automated ability to plan, coordinate, manage and execute the MAGTF operations relevant to various phases of transportation.</li> <li>- Automated Air Load Planning System (AALPS). Allows military air load planners to quickly and efficiently estimate airlift requirements, plan force packages, and modify aircraft loads.</li> <li>- Integrated Computerized Deployment System (ICODES). Ship load planning software application.</li> </ul> <p><b>Cargo Movement Operations System (CMOS)</b> A combat support system that automates and streamlines installation level cargo movement processes for both peacetime and deployment/contingency cargo. Workstations in ITO/TMO functional areas support one-time data capture for the preparation of documentation for all modes of shipment.</p> <ul style="list-style-type: none"> <li>- Automated Manifest System – Tactical (AMS-TAC). AMS is a transportation tool that utilizes AIT technologies to facilitate In-transit Visibility/ Total Asset Visibility (ITV/TAV) for DLA, the US Army, USN and USMC.</li> <li>-TC-AIMS II provides the hub for the OSD mandated Joint transportation suite of systems that will provide mobility and sustainment capability to all services and bring the Marine Corps into compliance with Department of Defense Reform Initiative 54. TC-AIMS II is a Joint transportation and deployment Automated Information System (AIS) supporting the DOD mission areas of mobility and sustainment.</li> </ul> <p><b>Marine Common Hardware Suite (MCHS)</b> centralizes and standardizes management and acquisition of all Tactical common computer hardware and infrastructure by adopting the Joint Defense Information Infrastructure (DII) Common Operating Environment (COE) with consolidated Integrated Logistics Support. Ensures the environment remains in synchronization with computer hardware technology hardware improvements. The mission supports the Commandant's Planning Guidance and the Marine Corps Master Plan.</p>								

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Systems Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Systems</b>	PROJECT NUMBER AND NAME <b>C2510 MAGTF CSSE &amp; SE</b>
<p><b>Global Combat Support System-Marine Corps (GCSS-MC)</b> is the physical implementation of the enterprise information technology architecture designed to support both improved and enhanced MAGTF Combat Service Support functions and MAGTF Commander and Combatant Commander/Joint Task Force (JTF) combat support information requirements. As such, GCSS-MC is not a single system but a portfolio of information technology capabilities tied to discrete performance measures that support required combat service support mission objectives.</p> <p>The 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 JROC. The GCSS CRD requires an IOC in FY04 and FOC in FY06. Specific ILC objectives are desired by 2004. GCSS-MC is the IT solution to accomplish the transformation and GCSS objectives. GCSS-MC is an integrated set of capabilities. The capabilities will be implemented within a bottoms-up (programs of record) approach within a portfolio of systems. The portfolio of systems contributes to the primary capabilities of GCSS-MC. External portfolios will also contribute secondary to GCSS-MC capabilities through integration strategies. Primary capabilities are supply chain and combat service support oriented.</p> <p>Secondary capabilities and aspects of some of the above are achieved through integration with the Manpower, Acquisition and other portfolios as well as integration with Joint and other Service systems. This integration will migrate the current Shared Data Environment (SDE), Total Force Structure Management System (TFSMS), and Automated Information Technology (AIT) to an integrated Detailed Planning and Current Operations System over the long-term. The capabilities are to be matched against systems remaining after the system realignment and categorization process and then assessed for compliance, alignment and cost effectiveness versus readily available COTS and GOTS products. The GCSS-MC portfolio seeks to most effectively achieve the mandated requirements through provisioning of the capabilities not extending specific systems.</p> <p>GCSS-MC is the IT solution for logistics transformation being developed by the ILC. The ILC Analysis was completed during an 18-week engagement beginning in late October 1998 to early February 1999. This analysis concluded with a high-level Business Case Analysis (BCA). The BCA concluded conservatively that accomplishing the ILC actions (including re-engineered IT among others) would reduce Marine Corps inventories and reduce support requirements allowing the shifting of (2000) Marines from logistics to the battlefield by 2004 (given the current timelines). ILC action will also result in: lighter, more flexible and easier to move MAGTF; Higher CSS responsiveness: reduced stocks and CSS footprint inside the MAGTF; Less equipment for Warfighter to manage; Rapidly scaleable and deployable CSS units that have worldwide inventory visibility. 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. The resulting capability is referred to as a shared data environment.</p> <p><b>Joint Forces Requirement Generation II (JFRG II)</b> The mission of JFRG II is to enhance and increase the ability of Joint Force planners and operators to efficiently task, organize, deploy, and sustain forces during combat operations or operations other than war. The system will decrease the planning and mobilization time and effort necessary to support a Combatant Commander's mission priorities and objectives. JFRG II is a force multiplier, improving service responsiveness for unit assignment to notional operational plans.</p>		
<p>***C2150 \$2.3572M of FY06 Funds will be used to Forward Finance FY07 for GCSS</p>		



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Systems Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Systems</b>	PROJECT NUMBER AND NAME <b>C2510 MAGTF CSSE &amp; SE</b>	
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.990</b>	<b>0.970</b>	<b>0.950</b>
RDT&E Articles Qty			
<b>MCHS:</b> Environmental testing of CISC/RISC workstations.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.405</b>	<b>0.396</b>	<b>0.517</b>
RDT&E Articles Qty			
<b>MCHS:</b> Environmental testing of CISC/RISC servers.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.100</b>	<b>0.250</b>
RDT&E Articles Qty			
<b>AIT:</b> Development of software with AIT capabilities in conjunction with the DOD AIT implementation plan.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>13.728</b>	<b>10.365</b>	<b>27.351</b>
RDT&E Articles Qty			
<b>GCSS-MC Logistics Chain Management:</b> Program/Engineering support, analysis, integration, development, testing, and enhancements for blocks one (1) through three (3).			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>1.439</b>	<b>3.341</b>	<b>4.095</b>
RDT&E Articles Qty			
<b>GCSS-MC Logistics Command and Control:</b> Program/Engineering support, analysis, integration, development, testing, and enhancements for blocks one (1) through three (3).			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.716</b>	<b>0.680</b>	<b>0.488</b>
RDT&E Articles Qty			
<b>Transportation System Portfolio :</b> Conduct operational test and evaluation of TC-AIMS II per JPMO schedule. Supports the development and sustainment of Joint/Multi-Service transportation and distribution systems.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.601</b>	<b>1.660</b>
RDT&E Articles Qty			
<b>Joint Forces Requirement Generation II (JFRG II) :</b> Funds are for software development and integration into GCCS 4.X and legacy systems from all services to pass deployment data to GCCS.			
<b>(U) Total \$</b>	<b>17.278</b>	<b>17.453</b>	<b>35.311</b>

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N/BA-7 Operational Systems Dev	0206313M Marine Corps Communications Systems			C2510 MAGTF CSSE & SE						
<b>(U) PROJECT CHANGE SUMMARY:</b>				<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>				
<b>(U) FY 2006 President's Budget:</b>				17.829	17.724	21.273				
(U) Adjustments from the President's Budget:										
(U) Congressional Program Reductions										
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings				-0.122						
(U) SBIR/STTR Transfer				-0.418						
(U) Minor Affordability Adjustments				-0.011	-0.271	14.038				
<b>(U) FY 2007 President's Budget:</b>				17.278	17.453	35.311				
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above.										
(U) Schedule: GCSS-MC Schedule Slip.										
(U) Technical: Not Applicable.										
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>	
PMC BLI 464100 MAGTF CSSE & SE: TSP	1.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.340	
PMC BLI 463000 CCR: MCHS Svrs/Wkstns	57.927	39.542	57.380	67.386	87.131	72.175	60.787	Cont	Cont	
PMC BLI 461400 GCSS: GCSS	1.488	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.488	
PMC BLI 461700 COMBAT SPT SYS: GCSS	0.000	12.161	0.000	8.336	3.286	4.001	7.624	Cont	Cont	
PMC BLI 461400 GCSS: AIT	3.584	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.584	
PMC BLI 461700 COMBAT SPT SYS: AIT	0.000	7.539	9.736	12.865	13.280	9.171	10.226	Cont	Cont	
<b>(U) Related RDT&amp;E:</b> Not Applicable.										

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Systems Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communications Systems</b>	PROJECT NUMBER AND NAME <b>C2510 MAGTF CSSE &amp; SE</b>
<p><b>(U) D. ACQUISITION STRATEGY:</b></p> <p><b>Transportation Systems Portfolio:</b> Support the development and sustainment of Joint/Multi-Service transportation and distribution systems.</p> <p><b>Marine Corps Hardware Suites (MCHS):</b> To insure computer hardware in the operating forces keeps pace with industry computer hardware technical improvements.</p> <p><b>GCSS-MC</b> is a portfolio of systems. The approach is to enable Marine Corps Logistics Modernization through two main programs, Logistics Chain Management (LCM) and Logistics Command and Control (Log C2). Each program will pursue an evolutionary acquisition (EA) strategy in order to field operationally suitable and supportable capabilities in the shortest time possible. 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 for each program will be to deliver capabilities in Blocks. Each Block 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. Blocks will include eme Each Block will repeat the complete acquisition program cycle starting with MS A for the first Block for LCM and Milestone B thereafter going through a Milestone C/FRPDR for each Block. LCM is an ACAT 1AM program and Log C2 is an ACAT III or IV. LCM has passed MS A. The tentative date are for LCM MS B is during the 3rd quarter FY05 and MS C during the 4th quarter FY06, with fielding to begin in the latter part of FY06 with continued block upgrades thereafter. FOC is validated when all Marine Corps ground components are using capabilities provided by GCSS-MC LCM to include formal schools, and selected Marine Reserve Components and the following systems are no longer used operationally: SASSY, ATLASS II+, ATLASS I, MIMMS, and PC MIMMS.</p> <p><b>Joint Forces Requirement Generation II (JFRG II) :</b> JFRG II develops to requirements provided by all services as it becomes necessary. Software is tested for functionality with service users then passed on to DISA for security &amp; interoperability testing and release as a GCCS mission application. This is conducted based on a 6-month release schedule of GCCS, with a 6-month lead time for each JFRG II version release.</p> <p><b>(U) E. MAJOR PERFORMERS:</b></p> <p><b>Transportation Systems Portfolio</b></p> <p>FY06 - NWSC, Crane, IN, Conduct IOT&amp;E - supporting MCOTEA. Stanley Associates (MDSS II), Army (AALPS), SDDC (ICODES), ANTEON (AMS-TAC and CMOS) Dec 05</p> <p>FY07 - NWSC, Crane, IN, Conduct IOT&amp;E - supporting MCOTEA. Stanley Associates (MDSS II), Army (AALPS), SDDC (ICODES), ANTEON (AMS-TAC and CMOS), Dec 06</p> <p><b>MCHS</b></p> <p>FY05 - NWSC, Crane, IN, Environment testing of servers and workstations, Jan 2005.</p> <p>FY06 - Spawar, Charleston, SC Environmental testing of servers and workstations Jan 2006.</p> <p>FY07 - SpaWar, Charleston, SC Environmental testing of servers and workstations Jan 2007</p> <p><b>GCSS</b></p> <p>FY05 - Contracting information will be determined at a later date.</p> <p><b>Joint Forces Requirement Generation II (JFRG II) :</b></p> <p>FY06 CSC/BBN Tech (Software Developers). Oct 05</p> <p>FY07 CSC/BBN Tech (Software Developers). Oct 06</p> <p><b>Automated Information Technology (AIT)</b></p> <p>FY06 - Contracting information will be determined at a later date.</p> <p>FY07 - Contracting information will be determined at a later date.</p>		

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Exhibit R-3 Cost Analysis					DATE: February 2006							
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 S&E							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
Transportation System Portfolio	C/FFP	MCSC, Quantico, VA	0.000	0.516	01/05	0.185	12/05	0.340	12/06	Cont	Cont	
GCSS Logistics Chain Man	FFP/C	MCSC, Quantico, VA	10.465	8.128	12/04	6.365	03/06	21.786	01/07	Cont	Cont	
GCSS Log C2 Systems	TBD	TBD	1.200	0.862	12/04	2.004	03/06	2.457	01/07	Cont	Cont	
JFRG II	RCP	MCSC, Quantico, VA	0.000	0.000		1.601	10/05	1.660	10/06	Cont	Cont	
<b>Subtotal Product Dev</b>			<b>11.665</b>	<b>9.506</b>		<b>10.155</b>		<b>26.243</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
GCSS Logistics Chain Man	TBD	Various	0.000	0.000	01/05					0.000	0.000	
GCSS Log C2 Systems	TBD	TBD	0.000	0.000						0.000	0.000	
AIT	TBD	TBD	0.000	0.000		0.100	01/06	0.250	01/07	Cont	Cont	
<b>Subtotal Support</b>			<b>0.000</b>	<b>0.000</b>		<b>0.100</b>		<b>0.250</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
MCHS	WR	NSWC, Crane Indiana	1.586	1.395	01/05	1.366	01/06	1.467	01/07	Cont	Cont	
Transportation System Portfolio	WR	MCPD	0.200	0.100	01/05	0.205	12/05			0.000	0.505	
Transportation System Portfolio	WR	MCPD	0.100	0.100	01/05	0.150	12/05			0.000	0.350	
Transportation System Portfolio	RCP	ANTEON	0.131			0.140	12/05	0.148	12/06	0.000	0.419	
GCSS Logistics Chain Man			0.000	4.200	01/05	3.000	02/06	4.200	01/07		11.400	
GCSS Log C2 Systems			0.000	0.433	01/05	1.003	03/06	1.228	01/07		2.664	
<b>Subtotal T&amp;E</b>			<b>2.017</b>	<b>6.228</b>		<b>5.864</b>		<b>7.043</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
GCSS Logistics Chain Man			0.000	1.400	01/05	1.000	01/06	1.365	01/07		3.765	
GCSS Log C2 Systems			0.000	0.144	01/05	0.334	01/06	0.410	01/07		0.888	
<b>Subtotal Management</b>			<b>0.000</b>	<b>1.544</b>		<b>1.334</b>		<b>1.775</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>13.682</b>	<b>17.278</b>		<b>17.453</b>		<b>35.311</b>		<b>Cont</b>	<b>Cont</b>	



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Exhibit R-4-4a Project Schedule/Detail						DATE:		
APPROPRIATION/BUDGET ACTIVITY						February 2006		
PROGRAM ELEMENT		PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communications Systems				C2510 GCSS-MC Modernization		
GCSS-MC (Logistics Chain Mgmt, Log C2)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
LCM Block 1 - "Lights Out"					2nd Qtr			
MS A Plan	3rd Qtr							
Implementation	1st Qtr ++++++							
DT&E			4th Qtr+++++					
Milestone C - Block 1				3rd Qtr				
II MEF LCM Block 1 Transition/Cutover					1st Qtr			
III MEF "Lights Out"					2nd Qtr			
III MEF "Lights Out"					2nd Qtr			
LCM Block 1 - "Lights Out"/Transition Complete					2nd Qtr			
LCM Block 2 - Enhancements, New Capabilities						4th Qtr		
LCM Block 3							4th Qtr	
Log C2		2nd Qtr ++++++						
Block 1 - Log C2 - CLC2S		2nd Qtr ++++++						
Block 2 - Logistics Forecasting/Planning			1st Qtr ++++++					
Block 3 - Future Log C2 Capability				4th Qtr ++++++				

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EXHIBIT R-2a, RDT&E Project Justification				DATE:						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>				PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>		PROJECT NUMBER AND NAME <b>C3099 RADAR SYSTEMS</b>				
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost				<b>29.761</b>	<b>26.818</b>	<b>55.746</b>	<b>56.418</b>	<b>169.604</b>	<b>66.900</b>	<b>64.338</b>
RDT&E Articles Qty										
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>										
<p>1. <b>The Aviation Radar (AN/TPS-59(V)3)</b> is a national asset. It is the only fielded ground-based sensor which can detect and track long range Air Breathing Targets (ABT) within 300 nautical miles, as well as Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles for 360 degrees and up to one million feet in elevation. Highly Expeditionary Long Range Air Surveillance Radar (HELRSR) is the modernization initiative to replace the AN-TPS 59 Radar.</p> <p>2. <b>Ground Weapons Locating Radar (GWLR):</b> The GWLR 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 functions 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.</p> <p>3. <b>The Multi-Role Radar System (MRRS) is also known programmatically as Ground/Air Task Oriented Radar (G/ATOR).</b> G/ATOR is a single material solution to fill the MRRS's and Ground Weapon Locating Radar's (GWLR) (End State) requirements. It is an Evolutionary Acquisition/Incremental Development Program designed to reduce the Total Ownership Costs associated with the MRRS and GWLR systems. Increment I will fill the MRRS's Short Range Air Defense (SHORAD) mission and medium range Air Surveillance mission. Increment II will fill the GWLR's Counter Fire/Counter Battery missions. Increment III will develop tactical enhancements to Increment I's design. Lastly, Increment IV will fill the Air Traffic Control mission. Programmatically, MRRS and GWLR will merge into a single requirement (G/ATOR) as the requirement documents transition from the Op Requirement Document (ORD) format to the Capability Development Document (CDD) format.</p> <p>4. <b>The Short/Medium Range Air Defense Radar AN/TPS-63B</b> 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.</p>										
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>										
COST (\$ in Millions)				<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>				
Accomplishment/Effort Subtotal Cost				<b>4.405</b>	<b>1.709</b>	<b>7.832</b>				
RDT&E Articles Qty										
<b>AN/TPS-59 (Sustainment):</b> Develop Engineering Change Proposals for software improvements and Diminishing Manufacturing Sources issues.										
COST (\$ in Millions)				<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>				
Accomplishment/Effort Subtotal Cost				<b>0.850</b>	<b>0.750</b>	<b>0.750</b>				
RDT&E Articles Qty										
<b>AN/TPS-59 (Sustainment):</b> Contractor service support.										
COST (\$ in Millions)				<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>				
Accomplishment/Effort Subtotal Cost				<b>0.180</b>	<b>0.000</b>	<b>0.224</b>				
RDT&E Articles Qty										
<b>HELRSR (Modernization):</b> Perform Risk Mitigation analysis.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C3099 RADAR SYSTEMS</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>1.010</b>	<b>0.150</b>	<b>0.400</b>	
RDT&E Articles Qty				
<b>HELRSR (Modernization):</b> Develop Life Cycle Cost Estimate, System Test Plan..				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.501</b>	<b>0.100</b>	<b>2.800</b>	
RDT&E Articles Qty				
<b>HELRSR (Modernization):</b> Acquisition Support.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.843</b>	<b>3.250</b>	<b>0.100</b>	
RDT&E Articles Qty				
<b>HELRSR (Modernization):</b> System development and demonstration for Risk Mitigation.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>1.328</b>	<b>2.153</b>	<b>0.774</b>	
RDT&E Articles Qty				
<b>GWLR:</b> Radar Processor Redesign.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.548</b>	<b>0.389</b>	<b>1.207</b>	
RDT&E Articles Qty				
<b>GWLR:</b> AN/TPQ-46A Re-cap/Up-grade.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.060</b>	<b>0.050</b>	<b>0.050</b>	
RDT&E Articles Qty				
<b>GWLR:</b> Program office management/travel.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.107</b>	<b>0.200</b>	<b>0.100</b>	
RDT&E Articles Qty				
<b>G/ATOR:</b> Contractor Technical, Programmatic, Engineering and Logistics Support				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>4.048</b>	<b>4.000</b>	<b>4.200</b>	
RDT&E Articles Qty				
<b>G/ATOR:</b> Logistics and increment II Studies & Analysis				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.200</b>	<b>0.200</b>	<b>0.900</b>	
RDT&E Articles Qty				
<b>G/ATOR:</b> Modeling and Simulation (V & V)				



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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C3099 RADAR SYSTEMS</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.180</b>	<b>0.000</b>	<b>1.000</b>	
RDT&E Articles Qty				
<b>G/ATOR: Capabilities Development</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.130</b>	<b>0.400</b>	<b>0.400</b>	
RDT&E Articles Qty				
<b>G/ATOR: Risk Management</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.220</b>	<b>0.000</b>	<b>0.000</b>	
RDT&E Articles Qty				
<b>G/ATOR: In-house Program Management (Govt Salaries)</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.225</b>	<b>1.250</b>	<b>1.250</b>	
RDT&E Articles Qty				
<b>G/ATOR: Program Office Manangement &amp; Travel Costs</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.141</b>	<b>0.150</b>	<b>0.150</b>	
RDT&E Articles Qty				
<b>G/ATOR: RFP Development/Tech. Support</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.350</b>	<b>0.350</b>	<b>0.350</b>	
RDT&E Articles Qty				
<b>G/ATOR: Radar Engineer SME ISO</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.520</b>	<b>0.200</b>	<b>0.200</b>	
RDT&E Articles Qty				
<b>G/ATOR: Government Furnished Equipment (GFE)</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.800</b>	<b>0.000</b>	
RDT&E Articles Qty				
<b>G/ATOR: Development Engineering/EDM Hardware Production</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>13.212</b>	<b>7.264</b>	<b>17.700</b>	
RDT&E Articles Qty				
<b>G/ATOR: Software Requirement Engineering and Development</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>3.100</b>	<b>15.105</b>	
RDT&E Articles Qty				
<b>G/ATOR Testing Evaluation</b>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C3099 RADAR SYSTEMS</b>	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.120</b>	<b>0.125</b>	<b>0.134</b>
RDT&E Articles Qty			
<b>SHORT/MEDIUM RANGE AIR DEFENSE RADAR:</b> Program Management Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.083</b>	<b>0.028</b>	<b>0.120</b>
RDT&E Articles Qty			
<b>SHORT/MEDIUM RANGE AIR DEFENSE RADAR:</b> Engineering and technical support.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>SHORT/MEDIUM RANGE AIR DEFENSE RADAR:</b> Feasibility study for the Multi-Level Power Supply.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.200</b>	<b>0.000</b>
RDT&E Articles Qty			
<b>SHORT/MEDIUM RANGE AIR DEFENSE RADAR:</b> Feasibility study for the Frequency Generator.			
<b>(U) Total \$ (C3099 Radar Systems)</b>	<b>29.761</b>	<b>26.818</b>	<b>55.746</b>
<b>(U) PROJECT CHANGE SUMMARY:</b>			
	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>
<b>(U) FY 2006 President's Budget:</b>			
(U) Adjustments from the President's Budget:	<b>51.055</b>	<b>23.741</b>	<b>42.380</b>
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-20.057		9.600
(U) SBIR/STTR Transfer	-1.198		
(U) Minor Affordability Adjustment	-0.039	3.077	3.766
<b>(U) FY 2007 President's Budget:</b>	<b>29.761</b>	<b>26.818</b>	<b>55.746</b>
CHANGE SUMMARY EXPLANATION:			
(U) Funding: See Above.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N /BA-7 OPERATIONAL SYS DEV		0206313M Marine Corps Communication Systems				C3099 RADAR SYSTEMS			
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI#465100, AN/TPS-59 Sustainment	27.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.277
(U) PMC, BLI#465000, AN/TPS-59 Sustainment	0.000	5.306	4.576	6.261	6.458	4.887	2.823	Cont	Cont
(U) PMC, BLI#464200, Grnd Weapon Locator Radar	0.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.832
(U) PMC, BLI#465000, Grnd Weapons Locating Radar	0.000	5.689	9.784	9.247	2.134	2.548	2.853	Cont	Cont
(U) PMC, BLI#464200, Short/Med Range Radar	1.427	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.427
(U) PMC, BLI#464200, AN/TPQ-46A	6.850	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.850
(U) PMC, BLI#464200, AN/TPQ-63B	1.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.200
(U) PMC, BLI#465000, Short/Medium Range Radar	0.000	0.526	0.436	0.448	0.453	0.407	0.340	Cont	Cont
(U) PMC, BLI#465000, Title IX Radar Set, Firefinder	0.000	18.000	0.000	0.000	0.000	0.000	0.000	0.000	18.000
(U) PMC, BLI#465000, Grnd/Air Task Oriented Radar	0.000	0.000	0.000	0.000	44.706	104.453	113.826	Cont	Cont
(U) PMC, BLI#465100, HELRASR (Modernization)	7.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.500
(U) PMC, BLI#465100, Long Range Radars	16.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.185
<b>(U) Related RDT&amp;E:</b>									
(U) PE 0206313M (Marine Corps Communication Systems), Project C2278, Project C2273, and Project C9276.									
(U) PMC, BLI#464200, Short/Med Range Radar									
<b>(U) D. ACQUISITION STRATEGY:</b>									
<b>(U) Highly Expeditionary Long Range Air Surveillance Radar (HELTRASR):</b> The modernization initiative will encompass all 11 AN/TPS-59 radar systems within the Marine Corps inventory. Due to technological advances, evolving threats, mobility issues, changes in employment concepts (Operational Maneuver from the Sea (OMFTS) and Expeditionary Maneuver Warfare (EMW)), interface requirements imposed by developing systems (CAC2S, CEC/CTN and CLAWS) and requirements outlined in the Capstone Requirements Documents (CID, TAMD, GIG, and IDM), the AN/TPS-59(V)3 must undergo modernization. The Acquisition Strategy is based on the recommendations from the Business Case Analysis and two independent modernization studies. The program office started R&D efforts that will incorporate the 3-D Expeditionary Long Range Radar ORD requirements into the current 11 fielded AN/TPS-59(V)3 radars. It is anticipated that this effort will require 9 years of R&D with a separate Development Test (DT)/Operational Test (OT). Forecasted IOC is FY13 with FOC for 11 systems occurring in FY18.									
<b>(U) AN/TPS-59 Radar Sustainment:</b> The Program Office intends to address Diminishing Manufacturing Sources (DMS) issues by continuing with the Post Production Support Program (PPSP) started in POM 02 initiative, and they will also begin R&D efforts that will modernize the radar with advanced technology and performance capabilities. A Business Case Analysis (BCA) was completed which incorporated two independent obsolescence/DMS studies that identified critical components which will severely impact the system performance and readiness by FY07. Based upon the BCA, the program office intends to sustain systems. The refurbishing and sustaining of systems will enable 3 active units and 2 reserve units to have a system with current technology, extend system life cycle and lower the radars' overall operating cost and maintain the supporting establishment.									
<b>(U) Ground Weapons Locating Radar (GWLR):</b> The GWLR is an upgrade to 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). ECPs will be conducted by the equipment PICA (Army PM Firefinder) with USMC participation. Joint procurement of hardware will realize economy of scale savings and insure 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.									

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206313M Marine Corps Communication Systems</b>	PROJECT NUMBER AND NAME <b>C3099 RADAR SYSTEMS</b>
<p><b>(U) G/ATOR:</b> The Ground/Air Task Oriented Radar, formerly known as MRRS, is an Evolutionary Acquisition / Incremental Development Program. G/ATOR is comprised of four Increments which will fill the MRRS' and GWLR's requirements. Four legacy systems (TPS-63, MPQ-62, TPS-73/79 &amp; TPQ-46A ) will be replaced by a single material design that offers an opportunity to reduce development cost and combine training &amp; logistics assets. MRRS' Authorized Acquisition Objective (AAO) is 41 systems replacing the TPS-63, MPQ-62 and TPS-73/79 systems as well as additional systems in support of the SHORAD mission (CLAWS weapon cue); GWLR's AAO is 22 systems, a one for one replacement of the TPQ-46A. The Increments' System Development &amp; Demonstration (SDD) phases are staggered to allow for technology insertion due to obsolescence &amp; technology growth issues. Early Increment I builds will be back fitted to current then year technology as required. As they become available, Increment III Tactical Enhancements will parallel field to then year Increment I builds and back fitted to earlier builds. A single Eng Development Model (EDM) will be developed during Increment I's SDD phase and flowed down to support later increments.</p> <p><b>(U) SHORT/MEDIUM RANGE AIR DEFENSE RADAR:</b> This effort requires R&amp;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. Efforts are underway to award a sole source Engineering Services and procurement contract with 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.</p> <p><b>(U) E. MAJOR PERFORMERS:</b></p> <p>(U) Lockheed Martin Corp, Syracuse, NY. Contract awarded in April 04 for AN/TPS-59 to develop ECPs for software improvements and DMS issues. FY05, FY06, and FY07 project contract with LMC in Jan of each year to develop ECPs for software improvements.</p> <p>(U) Contract with Sensis Corp Projected to be put on contract July 05 to support the HELRASR (AN/TPS-59 system development risk mitigation).</p>		

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Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>			<b>0206313M Marine Corps Communication</b>			<b>C3099 RADAR SYSTEMS</b>						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Compl	Total Cost	Target Value of Contract
AN/TPS-59 Sustainment	C/CPFF	Lockheed, Syracuse NY	4.666	4.405	01/05	1.709	01/06	7.832	01/07	Cont	Cont	
HELRSR (Modernization)	RCP	Sensis Corp	0.000	1.010	07/05	3.250	N/A	0.124	N/A	Cont	Cont	
SHORT/MEDIUM RANGE	RCP	Northrop Grumman	0.584	0.500	01/05	0.200	01/06	0.000	N/A	Cont	Cont	
G/ATOR	CPIF	Contractor TBD		13.388	09/05	10.264	04/06	32.700	10/06	Cont	Cont	
G/ATOR (GFE)	MIPR	TBD	0.000	0.000	N/A	0.800	04/06	0.000	N/A	Cont	Cont	
<b>Subtotal Product Dev</b>			<b>5.250</b>	<b>19.303</b>		<b>16.223</b>		<b>40.656</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
GWLR	WR	NSWC, Dahlgren, VA	0.550	1.328	11/04	1.121	11/05	0.305	11/06	Cont	Cont	
GWLR	MIPR	US Army CECOM	0.717	0.195	11/04	0.782	11/05	0.774	11/06	Cont	Cont	
GWLR	WR	MCLB Barstow	0.160	0.138	02/05	0.389	11/05	0.902	11/06	Cont	Cont	
GWLR	WR	NSCW, Crane, IN	0.000	0.215	02/05	0.250	N/A	0.000	N/A	Cont	Cont	
HELRSR (Modernization)	RCP	MCR Federal, MCSC	0.000	0.000	01/00	0.050	04/06	0.000	N/A	0.000	0.050	
HELRSR (Modernization)	WR	MCOTEA, Quantico, VA	0.000	0.000	N/A	0.100	04/06	0.000	N/A	0.000	0.100	
SHORT/MEDIUM RANGE	WR	NSWC, Crane, IN	0.206	0.083	01/05	0.028	01/06	0.120	01/07	Cont	Cont	
G/ATOR (PBL)	C/FFP	EG&G Tech Svc, Dumfries, VA	0.200	0.200	01/05	0.200	01/06	0.900	N/A	Cont	Cont	
G/ATOR (RADAR ENGINEER)	WR	NRL, Washington, DC	0.000	0.424	10/04	0.200	10/05	0.200	10/06	Cont	Cont	
G/ATOR	MIPR	MITRE, Boston, MA	0.000	0.350	10/04	0.350	10/05	0.350	11/06	Cont	Cont	
G/ATOR (RADAR ENGINEER)	WR	NAVAIR-John Lee	0.000	0.105	11/04	0.200	10/05	0.200	10/06	Cont	Cont	
G/ATOR	RCP	MCR Federal, MCSC	0.000	0.007	11/04	0.200	12/05	0.100	10/06	Cont	Cont	
G/ATOR	WR	NSWC-CRANE	0.000	0.520	01/05	0.200	10/05	0.200	10/06	Cont	Cont	
G/ATOR	C/FFP	TBD (Models & Sym)	3.550	0.000		0.000		1.000	10/06	Cont	Cont	
G/ATOR	C/FFP	TBD (RFP DEV)	4.006	0.000		0.000		0.200	10/06	Cont	Cont	
<b>Subtotal Support</b>			<b>9.389</b>	<b>3.565</b>		<b>4.070</b>		<b>5.251</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
G/ATOR	MIPR	MCOTEA, Quantico, VA	0.000	0.000		0.325	01/06	0.330	01/07	Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>0.000</b>	<b>0.000</b>		<b>0.325</b>		<b>0.330</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

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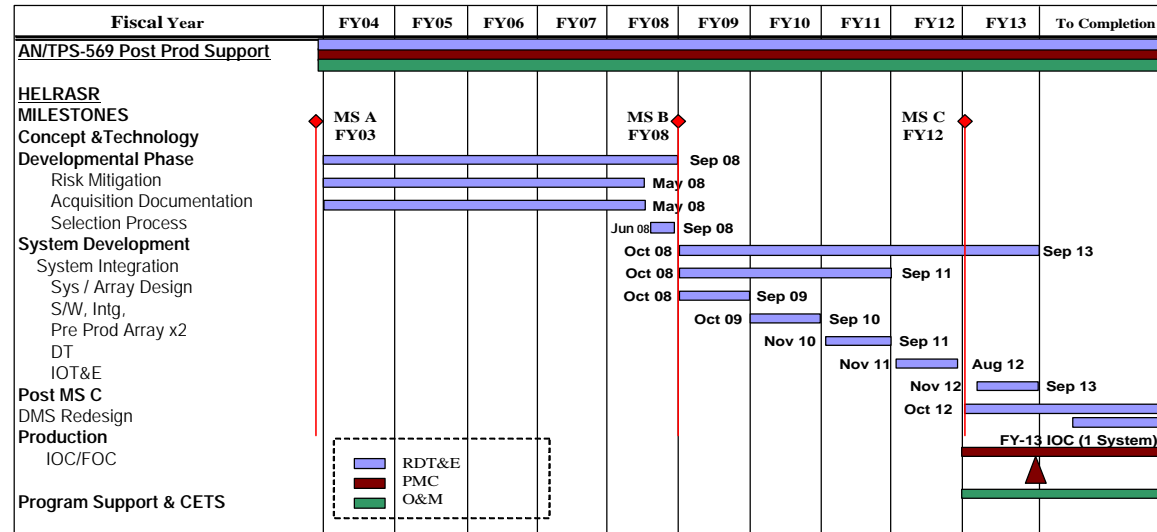
Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 OPERATIONAL SYS DEV			0206313M Marine Corps Communication			C3099 RADAR SYSTEMS						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AN/TPS-59 Sustainment	C/CPFF	Anteon, Stafford, VA	3.091	0.850	01/05	0.750	01/06	0.750	01/07	Cont	Cont	
HELRASR (Modernization)	C/CPFF	Anteon, Stafford, VA	0.353	0.501	01/05	0.000	N/A	0.600	N/A	Cont	Cont	
HELRASR (Modernization)	WR	MCSC, Quantico, VA	1.072	1.023	01/05	0.100	09/06	2.800	N/A	Cont	Cont	
SHORT/MEDIUM RANGE	C/CPFF	Anteon, Stafford, VA	0.097	0.105	10/04	0.105	10/05	0.110	10/06	Cont	Cont	
SHORT/MEDIUM RANGE	WR	MCSC, Quantico, VA	0.015	0.015	12/04	0.020	12/05	0.024	12/06	Cont	Cont	
GWLR	WR	MCSC, Quantico, VA	0.126	0.060	10/04	0.050	10/05	0.050	10/06	Cont	Cont	
G/ATOR	RCP	Anteon, Stafford, VA	0.000	3.848	10/04	4.000	10/05	4.000	10/06	Cont	Cont	
G/ATOR (CAPDEV)	RCP	MCCDC, Quantico, VA	0.000	0.130	11/04	0.200	02/06	0.200	10/06	Cont	Cont	
G/ATOR (SALARIES)	MIPR	MCSC, Quantico, VA	0.000	0.220	10/04	0.625	01/06	0.625	01/07	Cont	Cont	
G/ATOR (TAD)	RCP	MCSC, Quantico, VA	0.000	0.141	10/04	0.150	10/05	0.150	10/06	Cont	Cont	
G/ATOR	C/CPFF	TBD (Risk Management)	0.000	0.000	N/A	0.200	03/06	0.200	10/06	Cont	Cont	
<b>Subtotal Management</b>			<b>4.754</b>	<b>6.893</b>		<b>6.200</b>		<b>9.509</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>19.393</b>	<b>29.761</b>		<b>26.818</b>		<b>55.746</b>		<b>Cont</b>	<b>Cont</b>	

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<b>Exhibit R-4-4a Project Schedule/Detail</b>		DATE: <b>February 2006</b>
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



**Milestone Schedule  
AN/TPS-59(V)3 & HELRASR**



**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	To Completion	Compl	Total Cost
(U) RDT&E,N, C2273 AN/TPS-59 Sustainment	2.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.518
(U) RDT&E,N, C3099 AN/TPS-59 (Sustainment)	5.255	2.459	8.582	5.180	5.128	5.529	2.314					Cont	Cont
(U) RDT&E,N, C3099 HELRASR (Modernization)	2.534	3.500	3.524	7.731	37.123	28.080	20.520					Cont	Cont
(U) PMC, BLI#465100, AN/TPS-59 (Sustainment)	27.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.277
(U) PMC, BLI#465100, AN/TPS-59 (v)3 GWOT	7.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.500
(U) PMC, BLI#465100, LONG RANGE RADARS	16.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.185
(U) PMC, BLI#465000, AN/TPS-59 Sustainment	0.000	5.306	4.576	6.261	6.458	4.887	2.823					Cont	Cont

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<b>Exhibit R-4-4a Project Schedule/Detail</b>			DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C3099 RADAR SYSTEMS</b>	

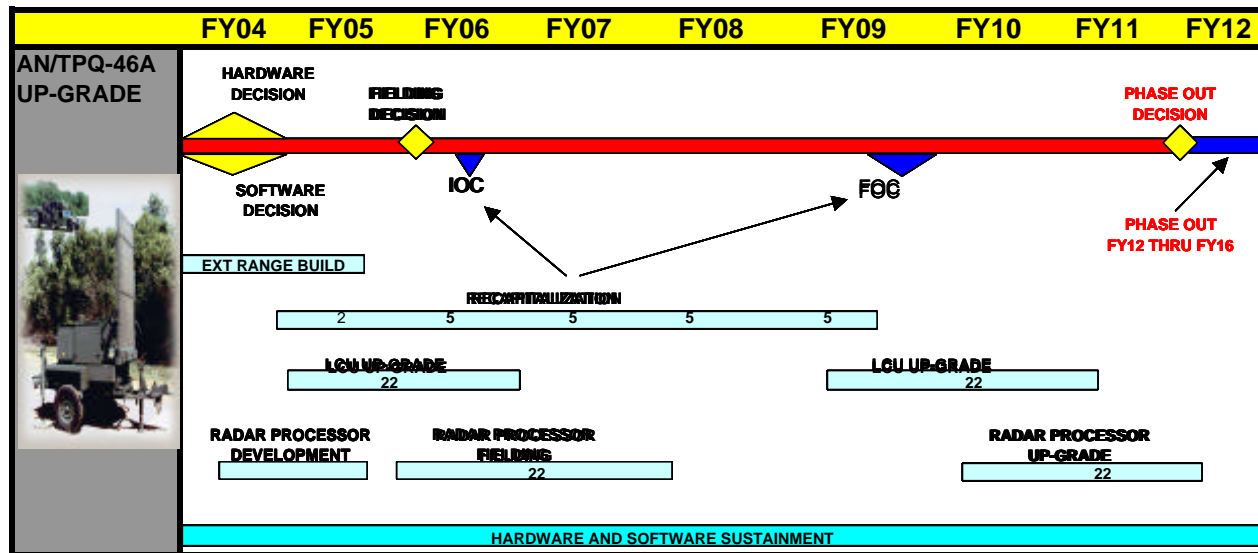
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
<b>AN/TPS-59 Sustainment Schedule</b>	FY 02-----							
<b>HELTRASR (AN/TPS-59 Modernization) Schedule</b>								
Milestone A	FY 03							
Concept & Technology Developmental Phase	FY 03-----4th Q	1st Q-4th Q	1st Q-4th Q	1st Q-4th Q				
Acquisition Documentation		1st Q	1st Q-4th Q	1st Q-3rd Q				
Selection Process		2ND Q	1st Q-4th Q	3rd Q--4th Q				
Milestone B						1st Q		
System Development						1st Q-----		
System Integration						1st Q-----4th Q		
DT								FY 12
IOT&E								FY 13
Milestone C								FY 12
Production								FY 13
IOC								FY 13
FOC								FY 18
Program Support	3rd Q-----							



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Exhibit R-4-4a Project Schedule/Detail		DATE: February 2006
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

**GROUND WEAPONS LOCATING RADAR SCHEDULE PROFILE**



<u>Program Funding Summary</u> <u>(APPN, BLI #, NOMEN)</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N, C3099, GWLR	1.936	2.592	2.031	1.791	1.789	1.832	1.877	Cont	Cont
(U) PMC, BLI#465000, GWLR	0.000	5.689	9.784	9.247	2.134	2.548	2.853	Cont	Cont
(U) PMC, BLI#465000,AN/TPS 63B	1.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(U) PMC, BLI#464200, GWLR	0.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	<b>0.832</b>

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<b>Exhibit R-4-4a Project Schedule/Detail</b>		DATE: <b>February 2006</b>
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT</b>	<b>PROJECT NUMBER AND NAME</b>
<b>RDT&amp;E, N /BA-7 OPERATIONAL SYS DEV</b>	<b>0206313M Marine Corps Communication Systems</b>	<b>C3099 RADAR SYSTEMS</b>

<b>GWLR SCHEDULE DETAIL</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Extended Range Software Build		2nd Q-----4th Q							
Re-Cap			3rd Q-----3rd Q						
LCU Replacement			3rd Q-----3rd Q			2nd Q-----2nd Q			
MILTOPE 750M Refresh							1st Q		
Radar Processor ECP		2nd Q-----1st Q							
Radar Processor Refresh							2nd Q		
Software PDSS		4th Q-----							
IOC Upgrade ECPs				3rd Q					
FOC Upgrade ECPs							3rd Q		

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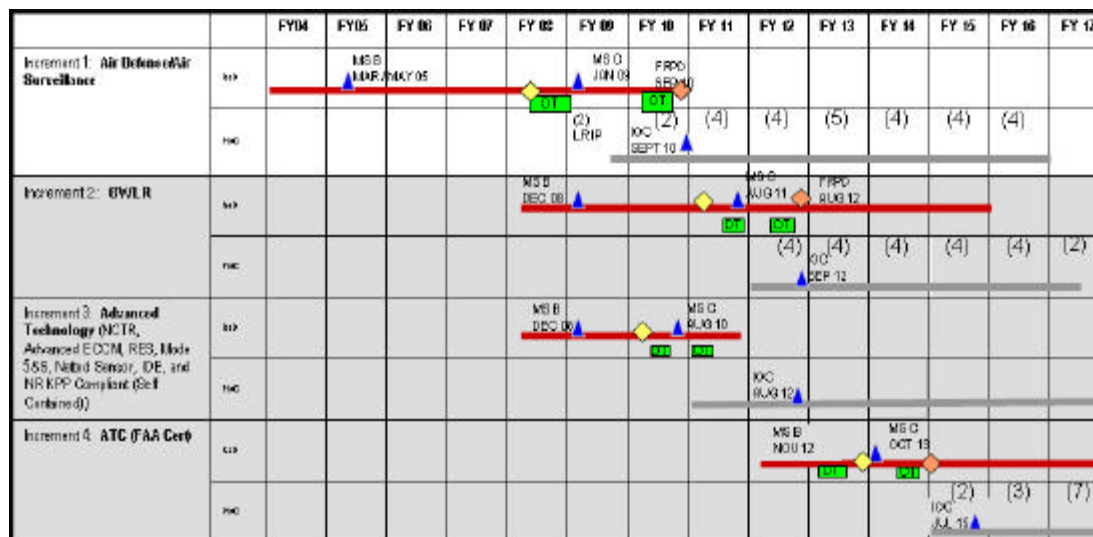
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DATE: February 2006

**Exhibit R-4-4a Project Schedule/Detail**

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

# G/ATOR Overall Program Schedule



- Milestone or IOC
- Design Readiness Rev
- FRPD Decision Pwr
- Dev/Op Testing

**Program Funding Summary**

(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N, C3099, G/ATOR	0.000	19.333	17.914	41.355	41.465	125.331	31.240	39.437	316.075
(U) PMC, BLI#465000, G/ATOR	0.000	0.000	0.000	0.000	44.706	104.453	113.826	Cont	Cont

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Exhibit R-4-4a Project Schedule/Detail								DATE:	
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT	
RDT&E, N /BA-7 OPERATIONAL SYS DEV								0206313M Marine Corps Communication Systems	
PROJECT NUMBER AND NAME								C3099 RADAR SYSTEMS	
G/ATOR SCHEDULE DETAIL		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
<b>Increment I</b>									
Concept & Technology Developmental Phase		-----3rd Q							
Selection Process		3rd Q-----3rd Q							
Milestone B		3rd Q							
System Development and Demonstration Phase		3rd Q-----3rd Q							
System Integration (EDM)		2nd Q-----2nd Q							
System Demonstration (DT)		3rd Q-----2nd Q							
Long Lead Items (EDM, LRIP & Production)		3rd Q-----Cont							
Milestone C		2nd Q							
Production Phase		2nd Q-----Cont							
LRIP		2nd Q-----2nd Q							
IOT&E		2nd--3rd Q							
IOC		4th Q							
Program Support		1st Q-----Cont							
<b>Increment II</b>									
Concept & Technology Developmental Phase		1st Q-----1st Q							
Milestone B		1st Q							
System Development and Demonstration Phase		1st Q-----4th Q							
System Demonstration (DT)		3rd Q-4th Q							
Long Lead Items		4th Q							
Milestone C		4th Q							
<b>Increment III</b>									
Concept & Technology Developmental Phase		1st Q-----1st Q							
Milestone B		1st Q							
System Development and Demonstration Phase		1st Q-----4th Q							
System Demonstration (DT)		2ndQ-3rd Q							
Milestone C		4th Q							
Production Phase		1st Q--Cont							
IOT&E		1st-2ndQ							

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev		0206313M Marine Corps Communication System			C9999 FY06 Congressional Adds						
COST (\$ in Millions)					FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost					0.000	27.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty											
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>											
COST (\$ in Millions)					FY 2005	FY06	FY07				
Accomplishment/Effort Subtotal Cost					0.000	2.700	0.000				
RDT&E Articles Qty											
<p><b>Critical Infrastructure Protection Center C2273C</b> - The CIPC has begun to merge three distinct disciplines to ensure appropriate pre-attack, trans-attack, and post-attack operations: Information Operations; Infrastructure Protection; and Emergency Management. Leveraging the substantial capabilities within each of these disciplines permits significant reduction of risk to terrorist exploitation on vulnerabilities in our critical infrastructure and emergency response. The vital element essential to integrating and coordinating the actions within these disciplines is the establishment of Information Sharing and Analysis Centers (ISAC's). The C4ISR challenges to Defense, as well as other Federal, State and Local authorities are how to fuse appropriate and relevant information from vastly disparate stored in a myriad of systems across a global information environment. The CIPC is establishing architectures, processes, and model systems that can be easily reproduced and adapted by local, state and federal organizations involved in information sharing and analysis, civil infrastructure protection, emergency management, and homeland security. The focus of CIPC is to substantially reduce the real risks associated with terrorism by most effectively applying the limited resources available to do so and ensure appropriate interface between defense and civil capabilities.</p>											
COST (\$ in Millions)					FY 2005	FY06	FY07				
Accomplishment/Effort Subtotal Cost					0.000	1.800	0.000				
RDT&E Articles Qty											
<p><b>Ground//AirTask Oriented Radar G/ATOR C3099C</b> - The G/ATOR program will develop and procure 41 air component radar systems and 22 ground component radar systems. The radar system is a 3-Dimensional, HMMWV-mounted, short to medium range radar designed to detect targets such as cruise missiles, Air Breathing Targets, rockets, mortars and artillery. It is an all-in-one rapidly deployed system that replaces four existing systems with better performance, Combat Identification, reduced logistical footprint, increased mobility and reduces O&amp;M costs through commonality of maintenance concepts and parts. The system will provide supplemental 3-Dimensional radar coverage for those areas out of view of the fielded AN/TPS-59(V)3 Radar system due to terrain masking. The supplemental funding will allow the Marine Corps to begin the development of an additional Engineering Development Model to help mitigate technical risk for Increment II.</p>											
COST (\$ in Millions)					FY 2005	FY06	FY07				
Accomplishment/Effort Subtotal Cost					0.000	3.400	0.000				
RDT&E Articles Qty											
<p><b>Impv Ground Based Transportable Radar C3099C</b> - The Aviation Radar (AN/TPS-59(V)3) is a national asset. It is the only fielded ground-based sensor which can detect and track long range Air Breathing Targets (ABT) within 300 nautical miles, as well as Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles for 360 degrees and up to one million feet in elevation. Supplemental funding will be used to develop an Engineering Change Proposal to incorporate National Systems Cueing to improve TBM detection capability.</p>											
COST (\$ in Millions)					FY 2005	FY06	FY07				
Accomplishment/Effort Subtotal Cost					0.000	2.600	0.000				
RDT&E Articles Qty											
<p><b>MC Composite Tracking Network Eng/Dev 9861N</b> - The MC Composite Tracking Network Eng/Dev Systems funds are required to provide non-personal technical services. The services consist of design engineering, systems integration, program management, logistics, test management, test support, and technical documentation to develop and demonstrate equipment to physically remote a phased array antenna from its associated terminal (radio).</p>											

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication System</b>	<b>C9999 FY06 Congressional Adds</b>		
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>MC DCGS &amp; Net Centric Center 9862N</b> - DCGS-Distributed Common Ground/Surface System – Marine Corps (DCGS), formerly known as Distributed Common Ground/Surface-Integration (DCGS-1), is a collection of Service Systems that will contribute to joint and combined war fighter needs for Intelligence, Surveillances and Reconnaissance (ISR) support, with the global Information Grid (GIG) providing unconstrained communications circa 2010 to support the Department of Defense (DOD), 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 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.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.500</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>USMC Battlefield Fusion</b> - Develop an Electronic Warfare Scenario Simulator (EWSS) to modify and edit Electronic Warfare mission scenarios. The EWSS will be used by CESAS operators to continuously calculate electromagnetic wave emission and propagation, antenna beam shape, scan patterns, and emitter audio. It will provide necessary training in the Techniques, Tactics, and Procedures required to attack, in a realistic training environment, targets of interest.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.500</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>MetaData C9276C</b> - Metadata technology incorporates the first data language. It serves as the "brain" and is the enabling component of the Metadata products.. The technology array solves the above-identified problems by:                      § Commonly defining and modeling data meanings, functions, and relations;                      § Creating an intelligent database with pre-loaded data conditions and automatically merging new real-time data;                      § Enabling all data structures to be stored using a finite set of data relations;                      § Preparing data for a variety of mission specific tool sets;                      § Delivering a database that can search itself; enabling users to access data in a common way; and                      § Providing A single database design for all applications.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Radio Bn Info Ops Training C9863N</b> - Funds will be used to establish training efforts associated with electronic warfare simulators. Funds will be used at Electronic Warfare Associates (EWA) MTC Services Corp. and Chesapeake Technologies Inc. (CTI).</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>6.800</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Recon, Target &amp; Surveillance Veh RST-V C2273 - 9864N</b> - The RST-V is a 4x4 hybrid electric drive vehicle with reconnaissance, surveillance, targeting and C3I (command, control, communications and intelligence) capability coupled with integrated stealth and survivability features. The communications systems include an ITT SINCGARS ASIIP VHF transponder and satellite communications.</p>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	<b>0206313M Marine Corps Communication System</b>	<b>C9999 FY06 Congressional Adds</b>							
COST (\$ in Millions)		FY 2005	FY2006	FY2007					
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.700</b>	<b>0.000</b>					
RDT&E Articles Qty									
<p><b>Remote Tactical Collection &amp; Trans Sys C9865N</b> - The intent is to procure the Swedish system as a gap filler bandwidth provider to the RADBNs. Evaluation of the system will be conducted as a FUE and funding is to support the procurement, bandwidth usage and support structure. RADBN MODS will be assisting in developing a plan of execution. The SWEDISH family of systems comprise a complete suite of VSAT systems and subcomponents that will be used to provide secure, high bandwidth to the Radio Battalions. The initial intent is to provide a 'hub and spoke' delivery concept that will be comprised of a 2.5m system at the Batt HQ and numerous Fly Away, (1.5m system), and Vehicle Based, (.9m system) systems for use during MEU and OIF deployments.</p>									
COST (\$ in Millions)		FY 2005	FY2006	FY2007					
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>3.000</b>	<b>0.000</b>					
RDT&E Articles Qty									
<p><b>TPS-59 HELRASR Sup Ballistic Miss Def C3099C</b> - Highly Expeditionary Long Range Air Surveillance Radar (HELRASR). HELRASR is the modernization effort to replace the AN/TPS-59(V)3. Funding will support a risk mitigation effort to develop Silicon Carbide Transmit Receive Modules.</p>									
(U) Total \$		<b>0.000</b>	<b>27.000</b>	<b>0.000</b>					
<b>(U) PROJECT CHANGE SUMMARY:</b>									
		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>					
<b>(U) FY 2006 President's Budget:</b>		<b>0.000</b>	<b>0.000</b>	<b>0.000</b>					
(U) Adjustments from the President's Budget:									
(U) Congressional Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases			27.000						
(U) POM 06 Core Adjustment									
(U) Reprogrammings									
(U) SBIR/STTR Transfer									
(U) Minor Affordability Adjustment									
<b>(U) FY 2007 President's Budget:</b>		<b>0.000</b>	<b>27.000</b>	<b>0.000</b>					
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>

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EXHIBIT R-2, RDT&E Budget Item Justification				DATE: February 2006			
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 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	56.786	72.982	47.592	50.157	50.233	42.622	42.259
C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)	0.637	0.769	0.807	0.837	0.858	0.883	0.899
C1555 Light Armored Vehicle (LAV) PIP	14.049	11.997	5.508	1.400	1.395	1.426	1.450
C1901 Marine Corps Ground Weaponry PIP	2.625	6.827	6.466	6.676	7.750	7.505	7.094
C2086 Marine Enhanced Program (MEP)	2.446	2.671	2.583	2.686	2.724	2.781	2.833
B2237 Amphibious Vehicle Test Branch (AVTB)	0.790	0.823	0.859	0.889	0.908	0.934	0.952
* C2315 Training Devices/Simulators	0.0	0.0	7.369	15.111	14.034	10.813	10.913
C2503 Family of Combat Equip Support & Services	3.593	7.286	9.424	11.539	13.185	10.546	10.700
C2928 EIFGSWS (HIMARS)	2.725	4.083	6.179	2.388	0.492	0.0	0.0
C3098 Fire Support Systems	19.835	11.470	7.717	7.456	8.719	7.571	7.258
C4002 Family of Raid Reconnaissance	3.216	1.756	0.680	1.175	0.168	0.163	0.160
C9278 Integrated Digital Camera Riflescope	0.976	0.0	0.0	0.0	0.0	0.0	0.0
C9641 LAV Integ Digital & Collaboration Environment	1.938	0.0	0.0	0.0	0.0	0.0	0.0
C9642 Compl Medal Oxide Semiconductor (CMOS)	0.963	0.0	0.0	0.0	0.0	0.0	0.0
C9643 Marine Advanced Combat Suit MACS)	2.030	0.0	0.0	0.0	0.0	0.0	0.0
C9644 Anti-Oxidant Micronutrients Program	0.963	0.0	0.0	0.0	0.0	0.0	0.0
C9999 FY-06 Congressional Adds	0.0	25.300	0.0	0.0	0.0	0.0	0.0
Quantity of RDT&E Articles							



EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational System Development</b>		PROGRAM ELEMENT (PE) NAME AND NO. <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>			
<p>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.</p> <p>This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.</p> <p><b>Note:</b></p> <p>* Funds for Project C2315 were realigned from PE 0206313M starting in FY07.</p>			
<b>B. PROGRAM CHANGE SUMMARY</b>			
	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>
<b>(U) FY 2006 President's Budget:</b>	<b>51.421</b>	<b>48.409</b>	<b>44.130</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	6.299	25.3	5.833
(U) SBIR/STTR Transfer	-0.891		
(U) Minor Affordability Adjustment	-0.042	-0.727	-2.371
<b>(U) FY 2007 President's Budget:</b>	<b>56.787</b>	<b>72.982</b>	<b>47.592</b>
CHANGE SUMMARY EXPLANATION:			
(U) Funding: See Above.			
(U) Schedule:			
(U) Technical: Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification				DATE:						
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev				0206623M Marine Corps Ground Combat/Supporting Arms Systems						
PROJECT NUMBER AND NAME				C1555 Light Armored Vehicle (LAV) PIP						
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost				14.049	11.997	5.508	1.400	1.395	1.426	1.450
RDT&E Articles Qty										
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>										
<p>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 Service Life Extension Program (SLEP) which includes the Improved Thermal Sight System (ITSS), the LAV-Command &amp; Communication (LAV C2) Program, the LAV Lethality Program, and the LAV Reliability, Availability &amp; Maintainability (LAV RAM) Program. These programs will ensure that the LAV FOV will be capable of conducting its assigned missions through FY 2015 by enhancing lethality and survivability; reliability, availability, maintainability and durability; as well as reducing operations and support costs. The LAV Lethality Program will upgrade the LAV 25's M242 gun and associated hardware and software necessary to enable the firing of M919 25mm Armor Piercing, Fin Stabilized, Discarding Sabot (Depleted Uranium) with tracer ammunition.</p>										
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>										
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost				1.811	0.000	0.000				
RDT&E Articles Qty										
LAV SLEP ITSS: Develop ITSS prototypes, PMO & matrix support, PMO travel, Contracted Advisory Assistance Services (CAAS) and DT/OT of ITSS prototypes.										
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost				0.885	1.102	1.353				
RDT&E Articles Qty										
LAV RAM: Research and development of numerous LAV RAM projects to address minor modification, safety, and obsolescence issues.										
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost				11.353	10.895	2.772				
RDT&E Articles Qty										
LAV C2: LAV-C2 prototype development, demonstration and integration efforts, PMO & matrix support, PMO travel, CAAS in support of LAV-C2.										
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007				
Accomplishment/Effort Subtotal Cost				0.000	0.000	1.383				
RDT&E Articles Qty										
LAV LETHALITY: System Development, Demonstration and integration efforts, PMO & matrix support, PMO travel & test ammo procurement in support of the LAV Lethality program.										
<b>(U) Total \$</b>				<b>14.049</b>	<b>11.997</b>	<b>5.508</b>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE:							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	February 2006							
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME							
		C1555 Light Armored Vehicle (LAV) PIP							
<b>(U) PROJECT CHANGE SUMMARY:</b>									
	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>						
<b>(U) FY 2006 President's Budget</b>	<b>15.130</b>	<b>12.179</b>	<b>5.482</b>						
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings									
	-0.745								
(U) SBIR/STTR Transfer									
	-0.327								
(U) Minor Affordability Adjustment									
	-0.009	-0.182	0.026						
<b>(U) FY 2007 NAVCOMPT Budget</b>	<b>14.049</b>	<b>11.997</b>	<b>5.508</b>						
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See Above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, 203800, LAV PIP	579.752	138.529	25.990	29.227	36.670	6.123	5.669	Cont	Cont
(U) PANMC, 138800, LAV LETHALITY	0.000	0.000	9.512	0.000	0.000	0.000	0.000	Cont	Cont
<b>(U) Related RDT&amp;E: C9641 LAV IDE</b>	<b>1.938</b>	<b>2.600</b>							

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C1555 Light Armored Vehicle (LAV) PIP</b>
<p><b>(U) D. ACQUISITION STRATEGY:</b> The LAV Service Life Extension Program (SLEP) which is comprised of the Basic SLEP and the Improved Thermal Sight System, is designed to extend the service life of the LAV Family of Vehicles through 2015, an increase of 12 to 15 years beyond its original projected useful life. This utilizes both developmental and off-the-shelf technologies to enhance survivability, lethality, mobility and sustainability while simultaneously reducing the cost of ownership. The Marine Corps uses multi-disciplined integrated product teams consisting of engineering, logistical, contracting and financial personnel to manage the SLEP. SLEP contracts have been designed using a winner-take-all methodology in order to reduce costs and encourage competition.</p> <p><b>(U) D. ACQUISITION STRATEGY:</b> 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. Two contractors have been selected to fabricate prototypes which will be subjected to a System Demonstration. The results of the demonstration and firm production prices will lead to a down-selection to a single source for the completion of the System Development and Demonstration phase and the Production phase.</p> <p><b>(U) D. ACQUISITION STRATEGY:</b> The LAV RAM project 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 RAM projects. The majority of contracts issued under the RAM line are subject to the competitive acquisition process.</p> <p><b>(U) D. ACQUISITION STRATEGY:</b> The LAV Lethality upgrade will increase the lethality of the LAV 25's M242 machine gun through the use of depleted uranium (DU) ammunition during combat operations. The Bradley Fighting Vehicle (BFV) uses the M242 and currently has the capability to fire DU ammunition. PM, LAV will buy existing standard components for the M242 and have them installed. A sole source contract will be initiated with Raytheon to insert the DU firing tables into the Improved Thermal Sight System utilized by the LAV 25. This contract will also include taking the Army's existing technical manual (TM) data on the upgraded M242 components and incorporate it into the LAV 25 TM data base.</p>		

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C1555 Light Armored Vehicle (LAV) PIP</b>
<b>(U) E. MAJOR PERFORMERS:</b>		
<b>LAV SLEP/ITSS</b>		
FY05	Raytheon Company, McKinney, TX. OT to be conducted/production award. Oct 04.	
	DRS Corporation, Fort Walton Beach, FLA. -complete the installation. Oct 04.	
	MCCDC, Quantico, VA, OT completion. Oct 04.	
	SURVICE Engineering Company, Belcamp, MD. ITSS test support. Oct 04.	
<b>LAV RAM</b>		
FY05	Various	
FY06	Various	
FY07	Various	
<b>LAV C2 Upgrade</b> Program starts in FY 05.		
FY05	Lockheed-Martin Systems Integration, Owego, NY. System development & demonstration. Jun 05.	
	Northrop Grumman Mission Systems, Carson, CA. System development & demonstration. Jun 05.	
FY06	Downselect to one contractor projected for Apr06	
FY07	TBD	
<b>LAV LETHALITY</b> Program starts in FY 07.		
FY07	Raytheon Company, McKinney, TX. Integration of DU firing tables into ITSS. Jan 07.	

Exhibit R-3 Cost Analysis					DATE: February 2006							
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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development (ITSS)	Various	Raytheon, McKinney TX	22.869	0.470	3Q05					0.000	23.339	
Product Development (RAM)	Various	Various	2.258	0.829	Various	0.970	Various	1.123	Various	Cont	Cont	
Product Development (C2-GFE)	Various	TBD	0.000	1.858	2Q05	1.941	1Q06			0.000	3.799	
Product Development (C2)	Various	TBD	0.000	8.100	3Q05	6.242	2Q06	1.081	1Q07	0.000	15.423	
CAAS	MIPR	SURVICE, Bellcamp, MD	0.550	0.143	1Q05	0.145	1Q06			0.000	0.838	
<b>Subtotal Product Dev</b>			<b>25.677</b>	<b>11.400</b>		<b>9.298</b>		<b>2.204</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Support												
Technical Eng Services (C2)	MIPR	TACOM, Warren, MI	0.000	0.233	Various	0.147	1Q06			0.000	0.380	0.590
<b>Subtotal Support</b>			<b>0.000</b>	<b>0.233</b>		<b>0.147</b>		<b>0.000</b>		<b>0.000</b>	<b>0.380</b>	<b>0.590</b>
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation												
Devl/Oper Test & Eval (SLEP/ITSS)	MIPR	Yuma Prv Ground, AZ	8.049	0.384	Various					0.000	8.433	
Devl/Oper Test & Eval (RAM)	MIPR	Aberdeen Proving Ground, MD	2.575	0.056	3Q05					Cont	Cont	
Devl/Oper Test & Eval (SLEP/ITSS)	MIPR	MCOTEA, Quantico, VA	0.922	0.720	Various					0.000	1.642	
Devl/Oper Test & Eval (C2)	MIPR	MCOTEA, Quantico, VA	0.000	0.237	Various	1.691	Various	1.437	1Q07	0.000	3.365	
Devl/Oper Test & Eval (Lethality)	MIPR	TBD	0.000					0.736	3Q07	0.000	0.736	
<b>Subtotal T&amp;E</b>			<b>11.546</b>	<b>1.397</b>		<b>1.691</b>		<b>2.173</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Management												
Program Management	VAR	TACOM, Warren, MI	3.055	0.934	Various	0.711	Various	1.036	Various	Cont	Cont	
Matrix Support	MIPR	TACOM, Warren, MI	1.043	0.085	Various	0.150	Various	0.095	Various	Cont	Cont	
<b>Subtotal Management</b>			<b>4.098</b>	<b>1.019</b>		<b>0.861</b>		<b>1.131</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>41.321</b>	<b>14.049</b>		<b>11.997</b>		<b>5.508</b>		<b>Cont</b>	<b>Cont</b>	

Exhibit R-4/a Schedule Profile/Detail		DATE: February 2006							
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							
<b>(U) D. SCHEDULE PROFILE:</b>									
<u>LAV SLEP</u>									
Milestone 0:	1st Qtr, FY 1998	Milestone III:	2nd Qtr, FY 2002						
Milestone I:	2nd Qtr, FY 1999	Contract Award:	3rd Qtr, FY 2002						
Milestone II:	2nd Qtr, FY 2000	IOC:	2nd Qtr, FY 2004						
DT / OT:	2nd Qtr, FY 2001	FOC:	3rd Qtr, FY 2009						
<u>LAV C2</u>									
Milestone A:	2nd Qtr, FY2000	Contract Award:	3rd Qtr, FY 2007						
Milestone B:	2nd Qtr, FY2005	IOC:	2nd Qtr, FY 2009						
DT / OT:	3rd Qtr, FY 2006	FOC:	4th Qtr, FY 2010						
Milestone C:	3rd Qtr, FY 2007								
<u>LAV LETHALITY</u>									
Milestone A:	Not Required	Contract Award:	4th Qtr, FY 2007						
Milestone B:	1st Qtr, FY 2007	IOC:	4th Qtr, FY 2008						
DT / OT:	3rd Qtr, FY2007	FOC:	2nd Qtr, FY 2010						
Milestone C:	4th Qtr, FY2007								
<b>Program Funding</b>									
<u>(APPN, BLI #, NOMEN)</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(U) RDT&amp;E,N</u>	14.049	11.997	5.508	1.400	1.395	1.426	1.450	Cont	Cont
<u>(U) RDT&amp;E, N #C9641 LAV IDE</u>	1.938	2.600	0.000	0.000	0.000	0.000	0.000	Cont	Cont
<u>(U) PMC, BLI# 203800 LAV</u>	579.752	138.529	25.990	29.227	36.670	6.123	5.669	Cont	Cont
<u>(U) PANMC, 138800, LAV LETHALITY</u>	0.000	0.000	9.512	0.000	0.000	0.000	0.000	Cont	Cont
<b>LAV SCHEDULE DETAIL</b>									
<b>LAV SLEP</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone III:									
Contract Award:									
IOC:		2Q							
FOC:							3Q		
<b>LAV C2</b>									
Milestone A:									
Milestone B:			2Q						
DT / OT:				3Q					
Milestone C:					3Q				
Contract Award:					3Q				
IOC:						2Q			
FOC:								4Q	
<b>LAV LETHALITY</b>									
Milestone A:									
Milestone B:					1Q				
DT / OT:					3Q				
Milestone C:					4Q				
Contract Award:					4Q				
IOC:						4Q			
FOC:								2Q	

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	C1901 Marine Corps Ground Weaponry PIP					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY10	FY11
Project Cost	<b>2.625</b>	<b>6.827</b>	<b>6.466</b>	<b>6.676</b>	<b>7.750</b>	<b>7.505</b>	<b>7.094</b>
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 and artillery technology, improvements for Night Vision Equipment, Rifle Combat Optics, Family of Individual Optics, Thermal Weapons Sight, Small Unit Remote Scouting System (SURSS) and monitors national and international weapons development.

(U) **MARINE CORPS AIR GROUND COMBAT CENTER (MCAGCC) RANGE INSTRUMENTATION:** Converges training occurring at the Marine Air Ground Task Force Training Command (MAGTFTC), Twenty-Nine Palms, CA with training of other forces occurring at participating Joint National Training Center (JNTC) ranges and with the standing Joint Task Force (JTF), Suffolk, VA. The Marine Corps JNTC strategy is to integrate Live, Virtual, and Constructive (L-V-C) training environments currently utilized or being developed. FY04 funds developed architecture and interfaces to integrate range instrumentation and simulation to digitally capture dismounted infantry and weapon system platform operations, to record command and control communications for after action, to provide integrated targetry, battlefield effects and Military Operations in Urban Terrain (MOUT) training environments, and designed the protocol transferring the correlated digital exercise picture to other JNTC recipients and the Joint Training and Simulation Center (JTASC) within the Joint Forces Command.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.600</b>	<b>0.360</b>
RDT&E Articles Qty			
<b>Automatic Rifle:</b> This funding will provide testing and evaluation of test results and program management in support of the program development for the new Marine Corps Infantry Automatic Rifle.			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.424</b>	<b>1.161</b>
RDT&E Articles Qty		8-81mm/6-60mm	8-81mm/6-60mm
<b>Company and Battalion Mortars:</b> 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 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.542</b>
RDT&E Articles Qty			
<b>Family of Individual Optics:</b> 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.			



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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C1901 Marine Corps Ground Weaponry PIP</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.100</b>	<b>0.050</b>
RDT&E Articles Qty				
<b>Rifle Combat Optics:</b> This funding will be predominantly expended during the test and evaluation phase of this program. Samples of potential material solutions will need to be procured to accomplish a limited user evaluation and complete technical and environmental testing.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.661</b>	<b>0.999</b>	<b>0.861</b>
RDT&E Articles Qty				
<b>Infantry Weapons Mods:</b> Joint participation and Marine Corps unique activities for evaluation of safety, lethality, and technology improvements for Marine Corps infantry/reconnaissance individual /crew-served weapons. Past years' efforts have impacted the safety and performance of M2 Machine Guns and M249 Squad Automatic Weapons and have included the new M40A3 Sniper Rifle, the mortar systems, and the current Marine Expeditionary Unit Special Operations Capability (MEU SOC) .45 caliber pistol efforts. Issues particularly related to safety are recurring events from year to year that require immediate attention to maintain an operational readiness posture. Likewise, we will continue to pursue potential technological advances that will significantly enhance the operational utility of both individual and crew-served weapon systems.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.686</b>	<b>1.217</b>	<b>0.480</b>
RDT&E Articles Qty				
<b>Small Unit Remote Scouting System (SURSS):</b> Funds will be used for development, demonstration and testing of product improvements and block upgrades to meet increasingly demanding Operational Requirements Document (ORD) thresholds.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>1.063</b>	<b>2.187</b>	<b>1.704</b>
RDT&E Articles Qty				
<b>Night Vision Mod Line:</b> Joint participation and Marine Corps unique activities for evaluation of safety, lethality and technology improvements for Marine Corps night vision devices. Provides for In-Service Engineering Agent (ISEA) support at Naval Surface Warfare Center (NSWC), Crane, IN. Participate with Army Program Manager (PM) - Night Vision at Ft. Belvoir on new enhancements for Image Intensification (I2) and fused multispectral weapon sight. Travel to support enhanced systems development and review of tests.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.163</b>	<b>0.300</b>	<b>0.308</b>
RDT&E Articles Qty				
<b>Tactical Unmanned Vehicle (TUV):</b> Funds will be used for developmental testing at Redstone Arsenal.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.052</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>Thermal Weapons Sight (TWS)AN/PAS-13:</b> Provided for joint participation in Pre-Planned Product Improvement (P3I) for TWS – remote image transfer, laser range finder, aimport reticle (mechanical, quadrant-style sight), mounting brackets for future small arms weapons, vertical angle measurement, and automated aimport reticle (non-mechanical, non-quadrant style, computer-driven sight).				
<b>(U) Total \$</b>		<b>2.625</b>	<b>0.177</b>	<b>0.166</b>

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

**RDT&E, N /BA-7 Operational Sys Dev**

**0206623M Marine Corps Ground Combat/Supporting Arms Systems**

**C1901 Marine Corps Ground Weaponry PIP**

**(U) PROJECT CHANGE SUMMARY:**

	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>
<b>(U) FY 2006 President's Budget:</b>	<b>3.063</b>	<b>6.932</b>	<b>9.029</b>
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) POM FY06 CORE Adjustment			
(U) Reprogrammings	-0.389		-1.500
(U) Small Business Innovation Research	-0.048		
(U) Minor Affordability Adjustment	-0.001	-0.105	-1.063
<b>(U) FY 2007 President's Budget:</b>	<b>2.625</b>	<b>6.827</b>	<b>6.466</b>

**CHANGE SUMMARY EXPLANATION:**

- (U) Funding: See above.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC (BLI#206100) Mod Kits IWS	0.000	3.264	2.963	2.968	3.040	3.034	3.042	Cont	Cont
(U) PMC (BLI#220900) Mod Kits IWS	2.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.680
(U) PMC (BLI#222000) Under \$5 Million	51.714	99.432	8.959	17.119	28.864	12.962	13.843	Cont	Cont
(U) PMC (BLI#233400) Modular Weapon System	26.978	22.350	0.000	0.000	0.000	0.000	0.000	0.000	49.328
(U) PMC (BLI#493000) Night Vision Equipment	605.520	102.991	13.675	15.247	29.517	29.184	29.079	Cont	Cont
(U) PMC (BLI#473400) SURSS	16.523	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.523
(U) PMC (BLI#474700) INTEL SP EQP SURSS	0.000	8.092	3.817	7.862	14.742	4.771	4.446	Cont	Cont

**(U) Related RDT&E:**

- (U) All Ground Weapons and Ground Ammunition Systems: Army, Navy, Air Force, Coast Guard, and Special Operations Command

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

- (U) These programs range from off-the-shelf modifications to developmental items. Modification covers safety, reliability, and technology up-grades to meet Marine Corps requirements.

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**EXHIBIT R-2a, RDT&E Project Justification**

**DATE:**

**February 2006**

**APPROPRIATION/BUDGET ACTIVITY**

**PROGRAM ELEMENT NUMBER AND NAME**

**RDT&E, N /BA-7 Operational Sys Dev**

**0206623M Marine Corps Ground Combat/Supporting Arms Systems**

**C1901 Marine Corps Ground Weaponry PIP**

**(U) E. MAJOR PERFORMERS:**

1Qtr 05, 1Qtr 06, 1Qtr 07 - NSWC, Crane, IN - Product development.

1Qtr 05, 1Qtr 06, 1Qtr 07 - AeroVironment, Simi Valley, CA - Product development.

2Qtr 05 - Watervliet Arsenal, Watervliet, NY - Test & Evaluation.

1Qtr 05 - Present Office of Naval Research (ONR) with R&D for Company and Battalion Mortars

1Qtr 05-Present - Dynamic Flow Form: Vendor for Mortar Development

1Qtr 06; 2Qtr 06 - L3 Titan Corporation: Contractor Support for Program Manager

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Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT	PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>			<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C1901 Marine Corps Ground Weaponry PIP</b>								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>			<b>SEE BELOW</b>									
Inf Wpns Mods	WR/RCP	MCCDC, Quantico, VA	0.867			0.060	2Q06	0.051	1Q07	Cont	Cont	
Inf Wpns Mods	WR	WTBN, Quantico, VA	0.184			0.220	2Q06	0.225	1Q07	Cont	Cont	
Inf Wpns Mods	MILSTRIP	MCSC, Quantico, VA	0.024			0.229	2Q06	0.290	2Q07	Cont	Cont	
SURSS	RCP	AeroVironment, Simi Valley, CA	0.318	0.298	2/4Q05	0.758	1Q06	0.115	1Q07	Cont	Cont	
SURSS	RCP	MCSC, Quantico, VA	0.030							0	0.030	
SURSS	MIPR	Natick, MA	0.000			0.250	2Q06	0.200	2Q07	0	0.450	
SURSS	WR	NAWCAD, Pax River, MD	0.000	0.020	2Q05						0.020	
Automatic Rifle	RCP	TBD	0.000			0.050	2Q06	0.010	1Q07	Cont	Cont	
Company/Battalion Mortar	RCP	TBD	0.000			0.200	2Q06	0.200	1Q07	Cont	Cont	
Company/Battalion Mortar	Var	TBD, Various	0.000			0.874	2Q06	0.611	1Q07	Cont	Cont	
Family of Individual Optics	WR/RCP	NSWC, Crane, IN	0.000					1.037	1Q07	Cont	Cont	
Nt Vision Mod	WR/RCP	NSWC, Crane, IN	1.198			1.754	1Q06	1.245	1Q07	Cont	Cont	
Nt Vision Mod	MIPR	Night Vision Lab, Ft Belvoir, VA	0.687	0.149	1Q05	0.110	1Q06	0.115	1Q07	Cont	Cont	
TWS	MIPR	Night Vision Lab, Ft Belvoir, VA	0.317							Cont	Cont	
Initial Issue	MIPR	TBD	0.000							0	0.000	
TUV	MIPR	Redstone Arsenal, AL	1.738	0.163	1Q05	0.300	1Q06	0.308	1Q07	Cont	Cont	
MCAGCC Range Inst	RCP(FFP)	SRI Int'l, Menlo Park, CA	3.675								3.675	
<b>Subtotal Product Dev</b>			<b>9.038</b>	<b>0.630</b>		<b>4.805</b>		<b>4.407</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>			<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>		<b>C1901 Marine Corps Ground Weaponry PIP</b>							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PROGRAM SUPPORT</b>			<b>SEE BELOW</b>									
Inf Wpns Mods	WR	MCSC, Quantico, VA	0.765	0.159	1Q05	0.100	1Q06	0.100	1Q07	Cont	Cont	
Inf Wpns Mods	RCP	BAEST, Stafford, VA	0.847	0.100	1Q05	0.000		0.000		Cont	Cont	
Inf Wpns Mods	RCP	CEOSS	0.000	0.000		0.390	2Q06	0.195	1Q07			
Inf Wpns Mods	RCP	MCSC, Quantico, VA	0.136	0.045	1Q05					0.000	0.181	
SURSS	RCP	BAEST, Stafford, VA	0.537	0.000		0.000		0.000		0	0.537	
SURSS	WR	NSWC, Dahlgren, VA (Civ Sal)	0.165	0.155	1Q05	0.165	1Q06	0.165	1Q07	Cont	Cont	
SURSS	WR	MCSC, Quantico, VA	0.041							0.000	0.041	
SURSS	RCP	MCSC, Quantico, VA	0.090								0.090	
SURSS	RCP	AeroVironment, Simi Valley, CA	0.094							0.000	0.094	
SURSS	MIPR	Joint Spectrum Ctr, Annapolis, MD	0.031	0.050	1Q05	0.044	2Q06			0	0.125	
Automatic Rifle	RCP	TBD	0.000			0.200	2Q06	0.200	1Q07	Cont	Cont	
Company/Battalion Mortar	RCP	TBD	0.000			0.100	2Q06	0.100	1Q07	Cont	Cont	
Nt Vision Mod	WR	MCSC, Quantico, VA	0.305	0.177	1Q05	0.148	1Q06	0.159	1Q07	Cont	Cont	
Nt Vision Mod	RCP	BAEST, Stafford, VA	0.350	0.515	2Q05	0.150	1Q06	0.160	1Q07	Cont	Cont	
Family of Individual Optics	WR	MCSC, Quantico, VA	0.000					0.300	1Q07	Cont	Cont	
Nt Vision Mod	WR	MCSC, Quantico, VA	0.000	0.020	1Q05							
TWS	RCP	BAEST, Stafford, VA	0.037							0.000	0.037	
MCAGCC Range Inst	RCP (FFP)	SENSIS Corp., Dewitt, NY	0.556							0.000	0.556	
<b>Subtotal Support</b>			<b>3.954</b>	<b>1.221</b>		<b>1.297</b>		<b>1.379</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												

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Exhibit R-3 Cost Analysis				DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>			<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>		<b>C1901 Marine Corps Ground Weaponry PIP</b>							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>T&amp;E</b>		<b>SEE BELOW</b>										
Inf Wpns Mods	WR	MCOTEA, Quantico, VA	0.140							0.000	0.140	
Inf Wpns Mods	WR	MCCDC, Quantico, VA	0.285							0.000	0.285	
Inf Wpns Mods	MIPR	Watervliet Arsenal, Watervliet, NY	0.000	0.300	2Q05							
Inf Wpns Mods	WR	PM Ammo, Quantico, VA	0.000	0.057	4Q05							
Automatic Rifle	WR	MCOTEA, Quantico, VA	0.000			0.350	2Q06	0.150	1Q07	Cont	Cont	
Company/Battalion Mortar	WR	MCOTEA, Quantico, VA	0.000			0.250	1Q06	0.250	1Q07	Cont	Cont	
SURSS	MIPR	MCOTEA, Quantico, VA	0.000	0.127	3/4Q05					0.000	0.127	
SURSS	WR	NSWC, Carderock, MD	0.000	0.036	1Q05							
Family of Individual Optics	WR	MCOTEA, Quantico, VA	0.000					0.205	1Q07	Cont	Cont	
Rifle Combat Optics	WR	MCOTEA, Quantico, VA	0.000			0.100	2Q06	0.050	2Q07	Cont	Cont	
TWS	RCP	NSWC, Crane, IN	0.000	0.052	2Q05							
Nt Vision Mod	WR	MCOTEA, Quantico, VA	0.150	0.202	4Q05	0.025	2Q06	0.025	2Q07	Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>0.575</b>	<b>0.774</b>		<b>0.725</b>		<b>0.680</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MCAGCC Range Inst	RCP (FFP)	MKI Systems, Orlando, FL	1.491							0.000	1.491	
<b>Subtotal Management</b>			<b>1.491</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>15.058</b>	<b>2.625</b>		<b>6.827</b>		<b>6.466</b>		<b>Cont</b>	<b>Cont</b>	

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

C1901 Marine Corps Ground Weaponry PIP

**FAMILY OF INDIVIDUAL OPTICS**

Fiscal Year	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
<b>Individual Marine Infantry Weapons Sights</b>													
IMIWS MS B (FY06)								█					
IMIWS MS C (FY07 3 <sup>rd</sup> Qtr)									█				
<b>Marine Handheld/Helmet Mounted Optic</b>													
MHHMO MS B (FY07)									█				
MHHMO MS C (FY08 4 <sup>th</sup> Qtr)													





APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

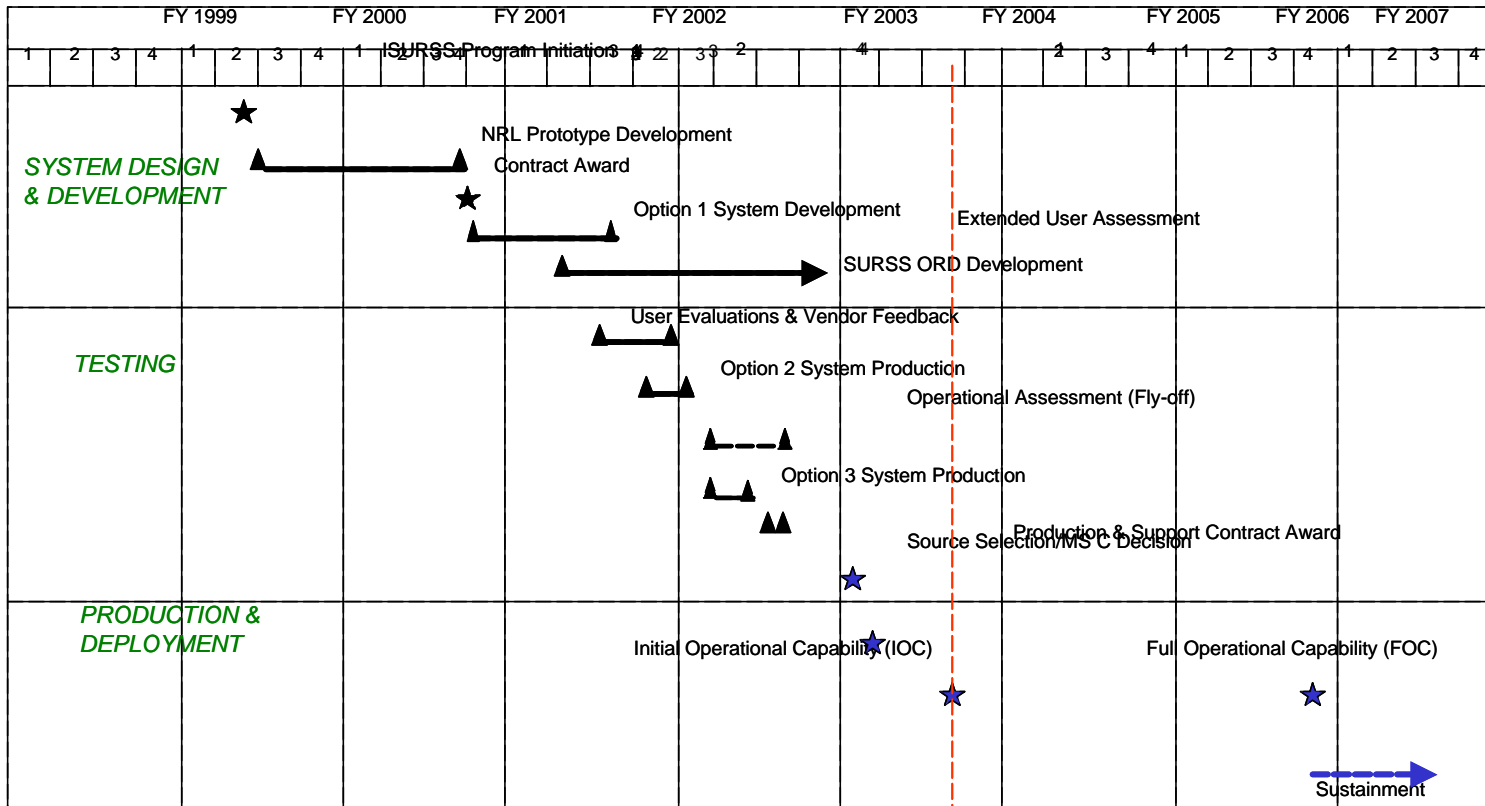
PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys Dev

0206623M Marine Corps Ground Combat/Supporting Arms Systems

C1901 Marine Corps Ground Weaponry PIP

**SMALL UNIT REMOTE SCOUTING SYSTEM**



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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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

C1901 Marine Corps Ground Weaponry PIP

<b>Small Unit Remote Scouting System Schedule Detail</b>				FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Program Initiation				2Q							
NRL Prototype Development				2Q							
Contract Award					4Q						
Option 1 System Development					4Q						
SURSS ORD Development						2Q					
User Evaluations & Vendor Feedback							3Q				
Option 2 System Production						4Q					
Extended User Assessment							1Q				
Option 3 System Production							1Q				
Operational Assessment (Fly-Off)							3Q				
Source Selection / MS C Decision								1Q			
Production & Support Contract Award								2Q			
IOC								3Q			
FOC										4Q	

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

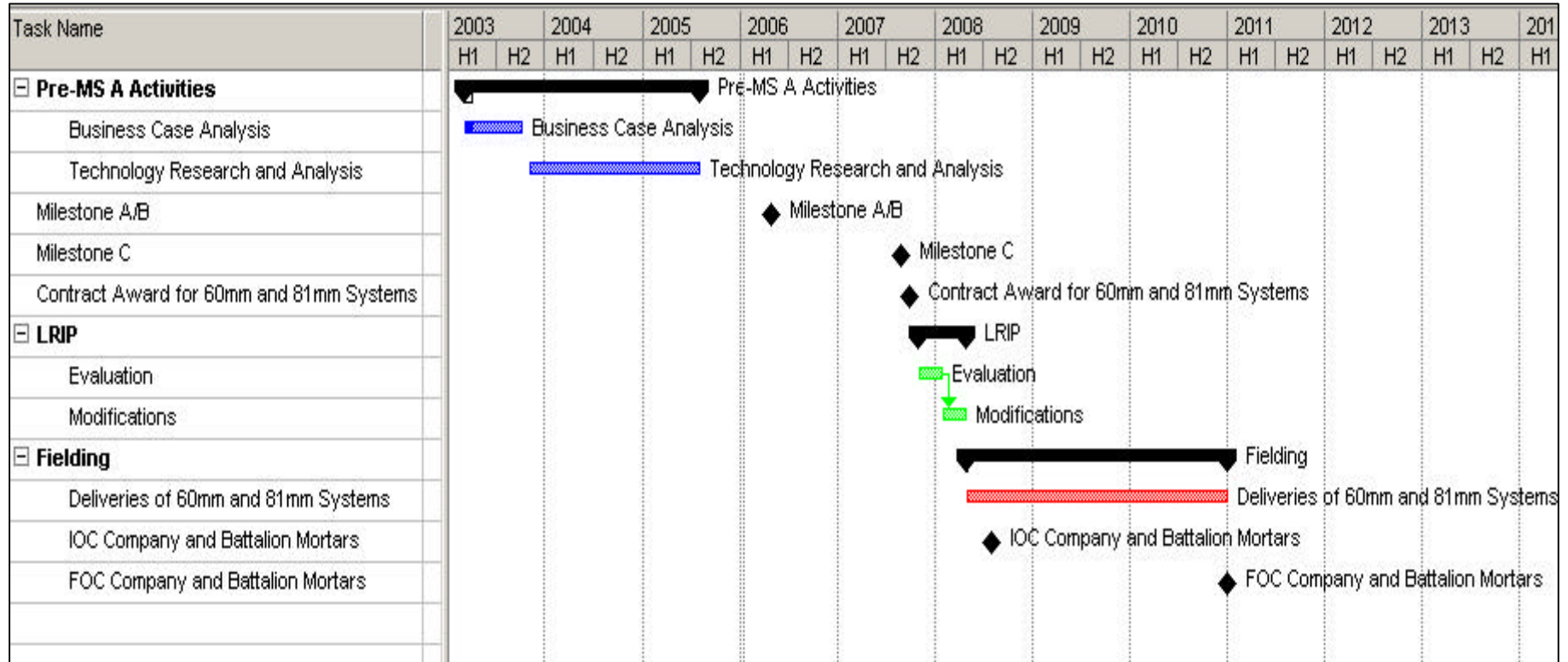
PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys Dev

0206623M Marine Corps Ground Combat/Supporting Arms Systems

C1901 Marine Corps Ground Weaponry PIP

**COMPANY AND BATTALION MORTARS**



**UNCLASSIFIED**

**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA 7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>					<b>C1901 Marine Corps Ground Weaponry PIP</b>				
<b>Company and Battalion Mortars</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Pre Milestone A Activities	2Q									
Business Case Analysis	2Q									
Technology Research and Analysis		1Q		2Q	2Q	2Q	2Q	2Q	2Q	
Milestone A/B				3Q						
Milestone C					4Q					
Contract Award 60mm/81mm Systems						1Q				
LRIP						2Q				
Evaluation						2Q				
Modifications						3Q				
Fielding						3Q				
Deliveries						3Q				
IOC						4Q				
FOC								1Q		

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

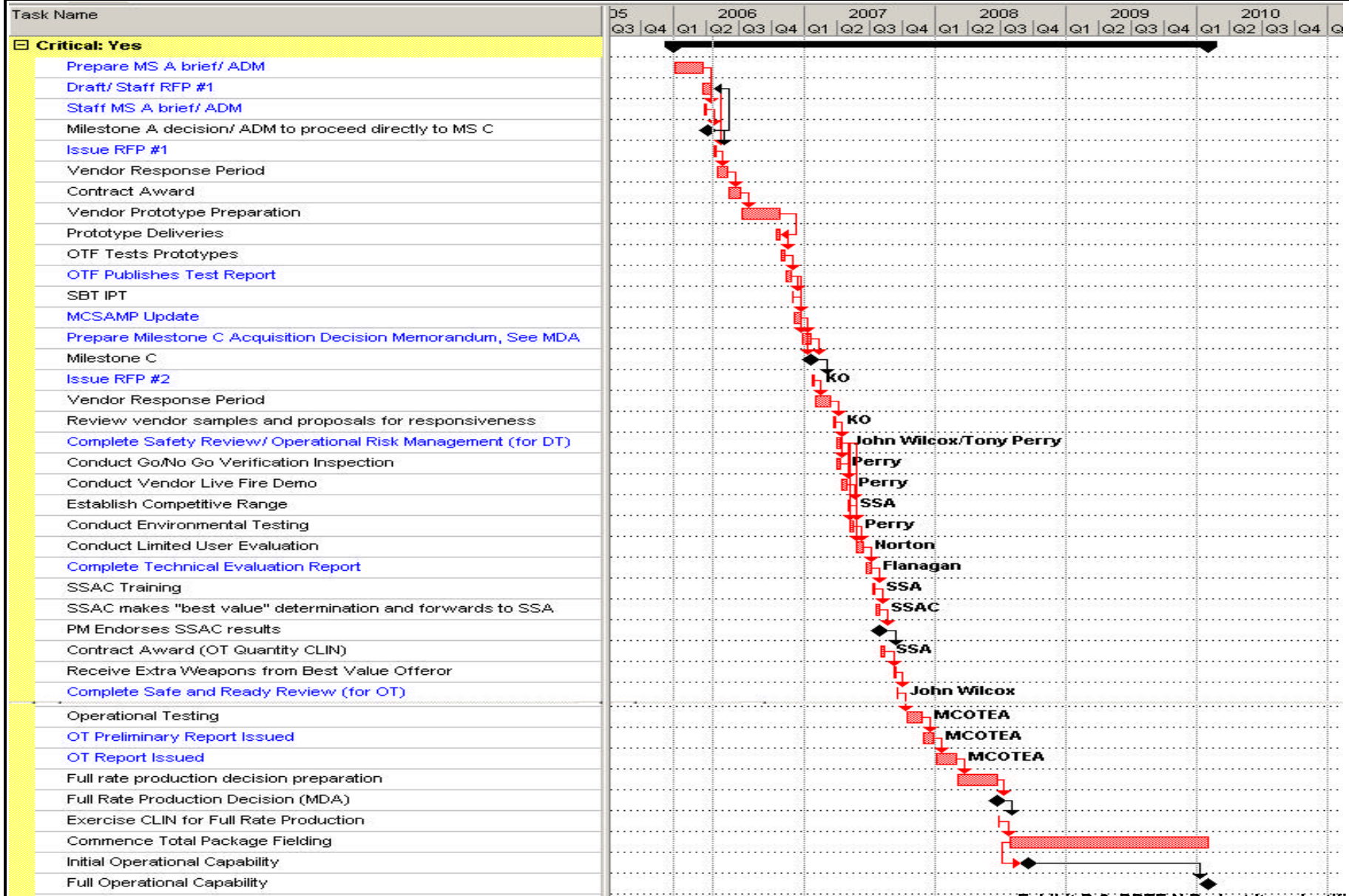
PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys Dev

0206623M Marine Corps Ground Combat/Supporting Arms Systems

C1901 Marine Corps Ground Weaponry PIP

## Automatic Rifle



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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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**

**C1901 Marine Corps Ground Weaponry PIP**

<b>Automatic Rifle</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone A			2Q					
Issue RFP for Prototypes			2Q					
Contract Award			3Q					
Prototype Deliveries			4Q					
OTF Tests Prototypes			4Q					
Milestone C				1Q				
Issue RFP #2				1Q				
Verification Testing (Go/No-Go, Demos, Environs, LUE)				2Q				
Source Selection				3Q				
Contract Award				3Q				
Complete Safe and Ready Review (for OT)				3Q				
Operational Testing				4Q				
OT Preliminary Report Issued				4Q				
OT Report					1Q			
Full Rate Production Decision					1Q			
Initial Operational Capability					3Q			
Full Operational Capability							1Q	

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EXHIBIT R-2a, RDT&E Project Justification				DATE:							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>				PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat Arms Systems</b>				February 2006			
								<b>C2086 Marine Enhancement Program (MEP)</b>			
COST (\$ in Millions)				FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY10	FY11	
Project Cost				<b>2.446</b>	<b>2.671</b>	<b>2.583</b>	<b>2.686</b>	<b>2.724</b>	<b>2.781</b>	<b>2.833</b>	
RDT&E Articles Qty											
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
Marine Enhancement Program (MEP) provides Research, Development, Test and Evaluation funding for low visibility, low cost items. It 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 and the Special Operations Command.											
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>											
COST (\$ in Millions)				FY 2005		FY06		FY07			
Accomplishment/Effort Subtotal Cost				<b>0.797</b>		<b>0.840</b>		<b>0.854</b>			
RDT&E Articles Qty											
Explored NDI equipment that would improve the combat effectiveness and enhance safety and survivability of the Individual Marine.											
COST (\$ in Millions)				FY 2005		FY06		FY07			
Accomplishment/Effort Subtotal Cost				<b>0.833</b>		<b>0.839</b>		<b>0.904</b>			
RDT&E Articles Qty											
Explored clothing and individual equipment that would improve the combat effectiveness and enhance safety and survivability of the individual Marine.											
COST (\$ in Millions)				FY 2005		FY06		FY07			
Accomplishment/Effort Subtotal Cost				<b>0.816</b>		<b>0.992</b>		<b>0.825</b>			
RDT&E Articles Qty											
Explored ground weapons, communications and command and control equipment that would improve the combat effectiveness and enhance safety and survivability of the individual Marine.											
(U) Total \$				<b>2.446</b>		<b>2.671</b>		<b>2.583</b>			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	C2086 Marine Enhancement Program (MEP)								
<b>(U) Project Change Summary:</b>		<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>						
<b>(U) FY 2006 President's Budget:</b>		<b>2.629</b>	<b>2.711</b>	<b>2.571</b>						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions										
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings		-0.168								
(U) SBIR/STTR Transfer		-0.014								
(U) Minor Affordability Adjustment		-0.001	-0.040	0.012						
<b>(U) FY 2007 President's Budget:</b>		<b>2.446</b>	<b>2.671</b>	<b>2.583</b>						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 To Compl</u>	<u>Total Cost</u>	
(U) PMC (BLI #221100) MEP		21.565	0.000	0.000	0.000	0.000	0.000	0.000	21.565	
(U) PMC (BLI#220800) Weapons Enhancement Pgm		0.000	3.623	5.251	4.015	4.096	4.254	4.340	Cont Cont	
<b>(U) Related RDT&amp;E:</b>										
<b>(U) D. ACQUISITION STRATEGY: NDI/COTS</b>										



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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat Arms Systems</b>	<b>C2086 Marine Enhancement Program (MEP)</b>

**(U) E. MAJOR PERFORMERS:**

<u>Performer</u>	<u>Effort</u>	<u>FY</u>	<u>Award Date</u>	<u>(\$000) Amt</u>
RDECOM, Natick MA	Product Development	2004	Dec-03	164
RDECOM, Natick MA	DT&E	2004	Dec-03	348
Various	Product Development	2004	Various	240
Various	DT&E	2004	Dec-03	881
Operating Forces	OT&E	2004	Nov-03	300
RDECOM, Natick MA	Product Development	2005	Dec-04	177
RDECOM, Natick MA	DT&E	2005	Dec-04	373
TBD	Product Development	2005	Various	257
TBD	DT&E	2005	Various	946
Operating Forces	OT&E	2005	Mar-05	322
RDECOM, Natick MA	Product Development	2006	Dec-05	173
RDECOM, Natick MA	DT&E	2006	Dec-05	367
TBD	Product Development	2006	Various	253
TBD	DT&E	2006	Various	929
Operating Forces	OT&E	2006	Mar-06	316
RDECOM, Natick MA	Product Development	2007	Dec-06	176
RDECOM, Natick MA	DT&E	2007	Dec-06	373
TBD	Product Development	2007	Various	257
TBD	DT&E	2007	Various	944
Operating Forces	OT&E	2007	Mar-07	321

RDECOM (Research Development and Engineering Command) formerly known as SBCCOM (Soldier Biological and Chemical Command)

Exhibit R-3 Cost Analysis					DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206623M Marine Corps Ground Combat Arms Systems		C2086 Marine Enhanced Program (MEP)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Comp	Total Cost	Target Value of Contract
Product Development	Various	Various	5.648	0.257	Various	0.306	Various	0.257	Various	Cont	Cont	
Product Development	MIPR	RDECOM, Natick, Mass	3.928	0.177	1Q05	0.173	1Q06	0.176	1Q07	Cont	Cont	
Product Development	WR	NFEC, Pt Hueneme, CA	1.150	0.052	2Q05	0.051	2Q06	0.051	2Q07	Cont	Cont	
Product Development	WR	NSWC, Crane, IN	1.518	0.069	1Q05	0.067	1Q06	0.081	1Q07	Cont	Cont	
Subtotal Product Dev			<b>12.244</b>	<b>0.555</b>		<b>0.597</b>		<b>0.565</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Test & Eval	WR	2nd MARDIV, CamLej, NC	7.297	0.228	2Q05	0.316	2Q06	0.321	2Q07	Cont	Cont	
Subtotal Support			<b>7.297</b>	<b>0.228</b>		<b>0.316</b>		<b>0.321</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval	Various	Various	14.018	0.870	Various	0.939	Various	0.864	Various	Cont	Cont	
Developmental Test & Eval	MIPR	RDECOM, Natick, Mass	9.335	0.373	1Q05	0.367	1Q06	0.373	1Q07	Cont	Cont	
Developmental Test & Eval	WR	NFEC, Pt Hueneme, CA	3.443	0.109	2Q05	0.108	2Q06	0.109	2Q07	Cont	Cont	
Developmental Test & Eval	WR	NSWC, Crane, IN	4.258	0.106	1Q05	0.143	1Q06	0.146	1Q07	Cont	Cont	
Subtotal T&E			<b>31.054</b>	<b>1.458</b>		<b>1.557</b>		<b>1.492</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Mgmt/Tech Spt	FFP	Various	0.095	0.205	1Q05	0.201	1Q06	0.205	1Q07	Cont	Cont	
Subtotal Management			<b>0.095</b>	<b>0.205</b>		<b>0.201</b>		<b>0.205</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Total Cost			<b>50.690</b>	<b>2.446</b>		<b>2.671</b>		<b>2.583</b>		<b>Cont</b>	<b>Cont</b>	

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<b>EXHIBIT R-2a, RDT&amp;E Project Justification</b>				DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>			PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>7.369</b>	<b>15.111</b>	<b>14.034</b>	<b>10.813</b>	<b>10.913</b>
RDT&E Articles Qty							
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>(U) Training simulators supported by this program element include Multiple Integrated Laser Engagement System (MILES 2000), Combined Arms Command &amp; Control Training Upgrade System (CACCTUS), MAGTF Tactical Warfare Simulation (MTWS) Enhancements, and Joint National Training Center (JNTC) Investment. These training systems provide tactical weapons and decision-making skill training from entry level through Marine Air-Ground Task Force (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.</p> <p>NOTE: FY05 and FY06 funding is in PE 0206313M.</p>							
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>							
COST (\$ in Millions)	FY 2005		FY 2006		FY 2007		
Accomplishment/Effort Subtotal Cost	align="right"> <b>0.000</b>		align="right"> <b>0.000</b>		align="right"> <b>3.046</b>		
RDT&E Articles Qty							
<p><b>CACCTUS:</b> Initial Proto-type installed at 29 Palms, CA for verification and validation testing by Tactical Training Exercise Control Group (TTECG). Transitioning continues from test bed to target simulation engine. Integration of operation C4I systems with sim. Development and integration of sim interfaces and visualization tools.</p>							
COST (\$ in Millions)	FY 2005		FY 2006		FY 2007		
Accomplishment/Effort Subtotal Cost	align="right"> <b>0.000</b>		align="right"> <b>0.000</b>		align="right"> <b>1.720</b>		
RDT&E Articles Qty							
<p><b>MILES:</b> Continue developing the Wireless RD detector belt capability, and integrate the Moving Target System (MITS) with Deployable Target System (DTS).</p>							
COST (\$ in Millions)	FY 2005		FY 2006		FY 2007		
Accomplishment/Effort Subtotal Cost	align="right"> <b>0.000</b>		align="right"> <b>0.000</b>		align="right"> <b>2.603</b>		
RDT&E Articles Qty							
<p><b>MTWS Enhancements:</b> The MTWS support initiative includes software and system development support, training network infrastructure support, and hardware support to include: Develop an HLA interface between MTWS and other simulation models, such as Joint Conflict and Tactical Simulation (JCATS) and other selected models. Develop MTWS-C4I interoperability with Command and Control PC (C2PC), Army Field Artillery Tactical Data System (AFATDS), Theater Battle Management Coprs System (TBMCS), and Common Aviation Command and Control System (CAC2S). Enhanced man machine interface for efficient exercise generation and execution processes, and reduce the number of exercise operators and controllers. Refresh computer hardware training suites, and supporting training communication network infrastructure. Develop Course of Actions and Analyses (COAA) capability. Rules of Engagement for multi-sided warfare and organizations. Airborne Electronic Warfare and Advanced synthetic natural environment upgrade.</p>							
(U) Total \$		<b>0.000</b>	<b>0.000</b>	<b>7.369</b>			

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems			C2315 Training Devices/Simulators						
(U) PROJECT CHANGE SUMMARY:	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>							
(U) FY 2006 President's Budget:	0.000	0.000	7.333							
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions										
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings										
(U) SBIR/STTR Transfer										
(U) Minor Affordability Adjustment								0.036		
(U) FY 2007 President's Budget:	0.000	0.000	7.369							
(U) Funding: FY's 07-11 funding realigned to PE 0206623M for execution. Prior year funding is under PE 0206313M.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
* NOTE: FY05 and FY06 Funding in PE 0206313M.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>	
(U) PMC, BLI# 653200 Trng Dev/Sims	96.546	57.581	13.797	30.651	55.935	17.889	18.609	Cont	Cont	
(U) RDT&E, PE 0206313M, C2315 Trng Dev/Sims	4.173	8.806	0.000	0.000	0.000	0.000	0.000	0.000	12.979	

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

- (U) **CACCTUS** - Competitive Cost plus Fixed Fee contract (CPFF).
- (U) **MILES** - Sole Source Fixed Price development contract.
- (U) **MTWS Enhancements** - Competitively award Cost Plus Incentive Fee (CPIF) development contract.
- (U) **Manpower Training Analysis** - Competitively Award Service Contract.

**(U) E. MAJOR PERFORMERS:**

Not Applicable for any programs with Training Devices/Simulators, C2315.

Exhibit R-3 Cost Analysis							DATE: February 2006					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N /BA 7 Operational Sys Development</b>			<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>				<b>C2315 Training Devices/Simulators</b>					
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Dev - MILES	SS/FP	Saab, Orlando, FL (Wireless)	0.000					0.331	12/06	Cont	0.331	
Product Dev - MILES	SS/FP	Saab, Orlando, FL (MITS)	0.000					0.300	12/06	Cont	Cont	
Subtotal Product Dev			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.631</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SW Dev - Miles	SS/FP	Saab, Orlando, FL (Wireless)	0.000					0.331	12/06	Cont	0.331	
SW Dev - Miles	SS/FP	Saab, Orlando, FL (MITS)	0.000					0.300	12/06	Cont	Cont	
Software Dev-CACCTUS	CPFF*	PM TRASYS, Orlando, FL	0.000					2.879	10/06	Cont	Cont	
SW Dev, CACCTUS	CPFF*	NAWC, Orlando, FL	0.000					0.167	10/06	0.000	0.167	4.453
SW Dev, CACCTUS	MIPR	PEO STRI, Orlando FL	0.000							0.000	0.000	4.325
Dev Support - MTWS	SS/T&M	PM TRASYS, Orlando, FL	0.000					2.353	10/06	Cont	Cont	
Subtotal SW Dev Support			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>6.030</b>		<b>Cont</b>	<b>Cont</b>	
Remarks: CACCTUS CPFF (Hub Zone)												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T & E - MILES	WR	MCSC, VA	0.000					0.200	04/06	Cont	Cont	
Subtotal Dev T&E			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.200</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support - MTWS	SS/T&M	MCSC, Quantico, VA	0.000					0.250	10/06	Cont	Cont	
Program Support - MILES	WR	MCSC, Quantico, VA						0.258	10/06	Cont	Cont	
Subtotal Management Spt			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.508</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Total Cost			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>7.369</b>		<b>Cont</b>	<b>Cont</b>	

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DATE: **February 2006**

**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>
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***CACCTUS PROGRAM SCHEDULE***

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Proto-type Install & validation 29 Palms, CA	◆ 11 Jan 04							
<b>Proto-type development</b> , hardware installation Camp Lejeune and 29 Palms. Software integration 29 Palms/Camp Lejeune. Test interoperabilty and functionality between 2 sites and Orlando.		◇ Sep 05						
<b>Proto-type developmet</b> and installation of hardware installation Camp Pendleton.			◇ Dec 06					
<b>Proto-type development</b> , retrofit to 29 Palms/Camp Lejeune/Pendleton. Test interoperabilty and functionality between 3 sites, 1 virtual sim.			◇ Sep 06					
<b>Proto-type development</b> , retrofit to 29 Palms. Install at MCAS Kaneohe Bay and Camp Hansen. Test interoperabilty and functionality between 5 sites.				◇ Sep 07				
<b>Initial Operational Capability</b> , Proto-type development for L/V/C integration, test and validation/ FOC				◇ Sep 07		◇ Sep 09		
<b>Proto-type development</b> , JNTC Test and Validation, retrofit all sites							◇ Sep 10	
<b>FOC CACCTUS/JNTC</b>								◇ Sep 11

**Other Program Funding Summary**

<b><u>(APPN, BLI #, NOMEN)</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>FY 2010</u></b>	<b><u>FY 2011</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
<b><u>(U) RDT&amp;E,N (CACCTUS) PE 26313M C2315</u></b>	2.876	5.666							
<b><u>(U) RDT&amp;E,N (CACCTUS) PE 26623M C2315</u></b>			3.046	5.528	6.028	6.106	5.580	Cont	Cont
<b><u>(U) PMC, BLI# 653200 Trng Dev/Sims (CACCTUS)</u></b>	4.946	4.716	3.599	4.808	4.782	4.909	4.913	Cont	Cont

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<b>Exhibit R-4/4a Schedule Profile/Detail</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>

<b>CACCTUS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Software Development	1Q/3Q							
Proto-type Functionality Evaluation User Input	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q	1Q/2Q/ 3Q/4Q
<b>Hardware Integration/Installation/Test</b>								
TTECG 29 Palms	1Q							
<b>Hardware Integration/Installation/Test</b>								
Camp Lejeune		4Q						
<b>Hardware Integration/Installation/Test</b>								
Camp Pendleton			1Q					
Camp Hansen			3Q					
MCAS Kaneohe Bay				1Q				
Proto-type Hardware Installation/Test all Site			3Q	3Q	3Q	3Q	3Q	3Q
P3I 29 Palms				1Q				
P3I Camp Lejeune/Camp Pendleton				4Q				
P31 MCAS Kaneohe Bay/Camp Butler					4Q			
P3I 29 Palms						4Q	4Q	4Q
IOC				4Q				
CACCTUS FOC						4Q		
CACCTUS/JNTC FOC								4Q

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**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>
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**MILES PROGRAM SCHEDULE**

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
RF Capibility (Wireless Capability)				◆					
Integrate MITS w/DTS					◆				
Dry Fire Trigger				◆					
ASAAF				◆					
Program Support									
Test and Evaluation			◆		◆				

**Other Program Funding Summary**

**(APPN, BLI #, NOMEN)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) <b>RDT&amp;E,N</b> (MILES) PE 26313M C2315	0.369	1.582							
(U) <b>RDT&amp;E,N</b> (MILES) PE 26623M C2315			1.720	0.742	0.402	0.201	0.050	Cont	Cont
(U) <b>PMC, BLI#</b> 653200 Trng Dev/Sims (MILES)	2.081	1.399	2.279	1.155	0.679	0.012	0.015	Cont	Cont



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**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>
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<b>MILES SCHEDULE DETAIL</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
RD Capability (Wireless)				2Q			
Integrate MITS with DTS					1Q		
Dry Fire Trigger				2Q			
ASAAF				2Q			
Program Support				1Q	1Q		
Test and Evaluation					3Q		

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**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C2315 Training Devices/Simulators</b>

**MTWS PROGRAM SCHEDULE**

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Contract Awards			◆	◆	◆	◆	◆	◆	◆
MTWS IPT/CCB				◆ ◆	◆ ◆	◆ ◆	◆ ◆	◆ ◆	◆ ◆
Version 3.4 SW Release					◆				
Version 3.5 SW Release						◆			
Version 3.6 SW Release							◆		
Version 3.7 SW Release								◆	
Version 3.8 SW Release									◆
Version 3.9 SW Release									
HW Refresh									◆

**Other Program Funding Summary**

**(APPN, BLI #, NOMEN)**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) <b>RDT&amp;E,N</b> (MTWS Enhancements) PE 26313M C2315	0.540	1.558							
(U) <b>RDT&amp;E,N</b> (MTWS Enhancements) PE 26623M C2315			2.603	3.814	2.579	2.199	2.978	Cont	Cont
(U) <b>PMC, BLI#</b> 653200 Trng Dev/Sims (MTWS)	2.000								

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<b>Exhibit R-4/4a Schedule Profile/Detail</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA 7 Operational Sys Development</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2315 Training Devices/Simulators</b>

<b>MTWS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award		2Q	2Q	2Q	2Q	2Q		
MTWS IPT/CCB			2-4Q	2-4Q				
Version 3.4 SW Release			4Q					
Version 3.5 SW Release				4Q				
Version 3.6 SW Release					4Q			
Version 3.7 SW Release						4Q		
Version 3.8 SW Release							4Q	
Version 3.9 SW Release								4Q
HW Refresh		1-4Q				1-4Q		

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EXHIBIT R-2a, RDT&E Project Justification

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES</b>					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>3.593</b>	<b>7.286</b>	<b>9.424</b>	<b>11.539</b>	<b>13.185</b>	<b>10.546</b>	<b>10.700</b>
RDT&E Articles Qty							

**(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 Operations and Maintenance Marine Corps procurement 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)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.923</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			

**Initial Issue:** Explored new commercial technologies that could be inserted into current body armor, load bearing equipment, footwear and clothing systems to reduce weight, increase survivability, lethality and mobility. Both torso and head/neck ballistic studies were conducted to assess blunt trauma/shock forces on the body and how ballistic materials/designs could afford the most protection while reducing weight. Modeling and simulation initiatives baselined the current equipment and enabled configuration/compatibility management of new equipment.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.624</b>	<b>4.422</b>
RDT&E Articles Qty			

**Family of Ballistic Protection (Formerly part of Initial Issue):** 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)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.228</b>	<b>0.117</b>
RDT&E Articles Qty			

**Family of Improved Loadbearing Equipment (Formerly part of Initial Issue):** This program supports the Marine Corps requirements for a replacement load bearing system and to provide funding to support continual system improvement throughout the life-cycle of the equipment.

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**EXHIBIT R-2a, RDT&E Project Justification**

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.087</b>	<b>0.086</b>	
RDT&E Articles Qty				
<b>Family of General Property and Support Equipment (Formerly part of Initial Issue):</b> The purpose of General Property and Combat Support Equipment is to enhance or improve unit operational capabilities and enhance unit morale. In addition, some items such as the individual water purifier, field tarp and poncho will greatly enhance survivability, mobility and provide significantly improved field equipment to Marines.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.953</b>	<b>1.088</b>	
RDT&E Articles Qty				
<b>Family of Mountain Cold Weather Clothing &amp; Equipment (FMCWCE) (Formerly part of Initial Issue):</b> 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)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.400</b>	<b>0.305</b>	
RDT&E Articles Qty				
<b>Family of Combat Field Feeding Systems (Formally part of Initial Issue):</b> 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)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.463</b>	<b>0.886</b>	<b>2.273</b>	
RDT&E Articles Qty				
<b>Family of Field Medical Equipment:</b> Development of new Authorized Medical and Dental Allowance Lists (AMALs and ADALs) to insert new technology, to reduce weight and cube size for expeditionary maneuver warfare, and to enhance health services support to the operating forces.				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	
Accomplishment/Effort Subtotal Cost	<b>0.534</b>	<b>0.800</b>	<b>0.000</b>	
RDT&E Articles Qty				
<b>Family of Field Medical Equipment:</b> Testing of Commerical-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items for the Enroute Care System (based on components of an existing USAF system) to evaluate functionality for patient transportation post resuscitative surgery in forward echelons.				

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**EXHIBIT R-2a, RDT&E Project Justification**

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES</b>		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.578</b>	<b>0.800</b>	<b>0.818</b>
RDT&E Articles Qty				
<b>Family of Field Medical Equipment:</b> Testing of Commerical-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items to evaluate their functionality for casualty rescue, extraction and transport as required for the Casualty Evacuation (CASEVAC) system.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.434</b>	<b>0.435</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>Family of Field Medical Equipment:</b> Minimization of the Forward Resuscitative Surgery System to support transportation into one V-22B Osprey.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.661</b>	<b>0.073</b>	<b>0.073</b>
RDT&E Articles Qty				
<b>Family of Shelters and Shelter Equipment:</b> 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.				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.000</b>	<b>0.242</b>
RDT&E Articles Qty				
<b>Marine Recruit Seabag:</b> Pursue designs, prototyping , user surveys, textile and physical properties testing and the full range of clothing design in response to new uniform initiatives.				
(U) Total \$		<b>3.593</b>	<b>7.286</b>	<b>9.424</b>
<b>(U) PROJECT CHANGE SUMMARY</b>				
		<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
<b>(U) FY 2006 President's Budget:</b>		<b>3.923</b>	<b>7.397</b>	<b>9.379</b>
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions				
(U) Congressional Rescissions				
(U) Congressional Increases/PBD604 Inflation				
(U) Reprogrammings		-0.302		
(U) SBIR/STTR Transfer		-0.026		
(U) Minor Affordability Adjustment		-0.002	-0.111	0.045
<b>(U) FY 2007 President's Budget:</b>		<b>3.593</b>	<b>7.286</b>	<b>9.424</b>
CHANGE SUMMARY EXPLANATION:				
(U) Funding:	See above.			
(U) Schedule:	Not Applicable.			
(U) Technical:	Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-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. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC Line (BLI#652200) Field Med Equip	7.974	12.228	3.224	0.636	3.318	3.441	3.511	Cont	Cont
(U) PMC Line (BLI#661300) Combat Field Feeding System	0.071	5.118	5.148	4.101	3.749	3.814	3.668	Cont	Cont

**(U) Related RDT&E:** Not Applicable.

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

**Family of Ballistic Protection Systems, Family of Mountain Cold Weather Clothing and Equipment, Improved Loadbearing Equipment, General Property and Support Equipment, Marine Recruit Seabag and Combat Field Feeding Systems (formerly Initial Issue):** 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 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, Improved Loadbearing Equipment, Marine Recruit Seabag, and General Property and Support Equipment (formerly Initial Issue):** U.S. Army Natick Research, Development and Engineering Center, Natick, Mass.

**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: February 2006						
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT		PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N /BA 7 Operational Sys Development</b>				<b>0206623M Marine Corps Ground</b>		<b>C2503 Initial Issue - Family of Combat Equip Support &amp; Services</b>						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development/Tech Insertion	MIPR	USASSCOM Natick, MA	3.648	0.167	1Q/05	1.020	1Q/06	1.522	1Q/07	Cont	Cont	
Development/Tech Insertion	FFP	Various (Test Articles)	0.345	0.403	2Q/05	1.548	2Q/06	1.859	2Q/07	Cont	Cont	
Development/Tech Insertion	WR	NMRC, WASH DC	0.771	0.624	2Q/05	0.416	2Q/06	0.908	2Q/07	Cont	Cont	
Development/Tech Insertion	MIPR	Vet Affairs, Wash DC	0.510	0.369	2Q/05	0.607	2Q/06	1.220	2Q/07	Cont	Cont	
Subtotal Product Dev			<b>5.274</b>	<b>1.563</b>		<b>3.591</b>		<b>5.509</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support	WR	NRMC, WASH DC	0.000	0.100	1Q/05	0.100	1Q/06	0.118	1Q/07	Cont	Cont	
Program Support	WR	NHRC, SAN DIEGO,DC	0.000	0.226	1Q/05	0.225	1Q/06			0.000	0.451	0.450
Subtotal Support			<b>0.000</b>	<b>0.326</b>		<b>0.325</b>		<b>0.118</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Test & Eval	MIPR	USASSCOM Natick, MA	1.254	0.073	2Q/05	0.263	2Q/06	0.439	2Q/07	Cont	Cont	
Operational Test & Eval	RCP	NRMC, WASH DC	0.040	0.578	2Q/05	0.800	2Q/06	0.800	2Q/07	Cont	Cont	
Field User Evaluations	WR	FMF	1.252	0.837	2Q/05	1.894	2Q/06	1.900	2Q/07	0.000	5.883	5.883
Field User Evaluations	RCP	MCSC, Quantico VA	0.568	0.073	2Q/05					0.000	0.641	0.641
Subtotal T&E			<b>3.114</b>	<b>1.561</b>		<b>2.957</b>		<b>3.139</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Eng Suppt	FFP/O	MCSC, Quantico VA	0.465	0.064	1Q/05	0.230	1Q/06	0.384	1Q/07	Cont	Cont	
Travel	DTS*	MCSC, Quantico VA	0.203	0.079		0.183		0.274		Cont	Cont	
Subtotal Management			<b>0.668</b>	<b>0.143</b>		<b>0.413</b>		<b>0.658</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
*DTS (Defense Travel System) Obligates throughout the execution year												
Total Cost			<b>9.056</b>	<b>3.593</b>		<b>7.286</b>		<b>9.424</b>		<b>Cont</b>	<b>Cont</b>	



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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supt Arms		C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY10	FY11
Project Cost	2.725	4.083	6.179	2.388	0.492	0.000	0.000
RDT&E Articles Qty							
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>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 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.</p>							
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>							
COST (\$ in Millions)		FY 2005	FY06	FY07			
Accomplishment/Effort Subtotal Cost		0.786	2.957	3.404			
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)		FY 2005	FY06	FY07			
Accomplishment/Effort Subtotal Cost		0.458	0.000	0.150			
RDT&E Articles Qty							
Develop Support Equipment, Army program office support, contractor provided logistics support							
COST (\$ in Millions)		FY 2005	FY06	FY07			
Accomplishment/Effort Subtotal Cost		0.630	0.651	2.059			
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)		FY 2005	FY06	FY07			
Accomplishment/Effort Subtotal Cost		0.851	0.475	0.566			
RDT&E Articles Qty							
Program Management at Quantico, USMC Liason Office at Army Program, USMC Test Unit at Ft Sill, and contractor support.							
(U) Total \$		2.725	4.083	6.179			

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Development</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supt Arms</b>	PROJECT NUMBER AND NAME <b>C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)</b>
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**PROJECT CHANGE SUMMARY**

	<b>FY2005</b>	<b>FY2006</b>	<b>FY07</b>
<b>(U) FY 2006 President's Budget:</b>	<b>2.996</b>	<b>4.145</b>	<b>6.150</b>
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) POM 06 Core Adjustment			
(U) Reprogrammings	-0.233		
(U) SBIR/STTR Transfer	-0.037		
(U) Minor Affordability Adjustment	-0.001	-0.062	0.029
<b>(U) FY 2007 President's Budget:</b>	<b>2.725</b>	<b>4.083</b>	<b>6.179</b>

**CHANGE SUMMARY EXPLANATION:**

- (U) Funding: Change in funding in FY06/07 represents reprioritizing of efforts within the USMC.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, (BLI 205000), EIFGSWS (HIMARS)	15.864	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.864
(U) PMC, (BLI 304001), HIMARS ROCKETS (COMBINED WIT	1.279	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.279
(U) PMC, (BLI 221200), HIMARS SYSTEMS AND ROCKETS	0.000	177.405	57.524	45.452	109.624	93.181	19.351	Cont	Cont

**(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 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-04-07 Lockheed Martin Missile, Dallas, TX. Modifications to Launcher, GMLRS Development**

**FY-04-07 Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing**

**FY-04-Lockheed Martin Missile, Dallas, TX Contractor Logistics Support, Contract Option**

**FY-04-Oshkosh Trucking Corporation, Oshkosh, WI Upgrade to RSS Production Representative articles and Field Service Support**

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Exhibit R-3 Cost Analysis						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER					
RDT&E, N/BA-7 Operational Sys Development			0206623M Marine Corps Ground Combat/Supt Arms				C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	SS/CPAF	Lockheed Martin, Dallas, TX	11.216	0.075	04/05	1.600	04/06	0.085	04/07	0.500	13.476	13.476
Primary Hardware Dev	SS/CPAF	Oshkosh Truck, Oshkosh,WI	2.970							0.000	2.970	2.970
Ancillary Hardware Dev	MIPR	RTTC, Redstone, AL	0.000			0.500	02/06	2.484	12/06	0.000	2.984	2.984
Systems Engineering	WR	NSWC-Carderock,MD	0.157							0.000	0.157	0.157
Systems Engineering	WR	NSWC-Dahlgren, VA	1.044	0.632	10/04	0.350	10/05	0.350	10/06	0.470	2.846	2.846
Systems Engineering	WR	NSWC-Earle, NJ	0.442	0.079	02/05	0.354	10/05	0.275	10/06	0.000	1.150	1.150
Systems Engineering	FFP	John J. McMullen, Pittsb,PA	0.181							0.000	0.181	0.181
Systems Engineering	CPAF	Lockheed Martin, Dallas, TX	0.320			0.090	12/05	0.210	12/06	0.056	0.676	0.676
Systems Engineering	WR	NAVAIR, Point Mugu CA	0.070							0.000	0.070	0.070
Subtotal Product Dev			<b>16.400</b>	<b>0.786</b>		<b>2.894</b>		<b>3.404</b>		<b>1.026</b>	<b>24.510</b>	<b>24.510</b>
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ILS Program Support	MIPR	US Army-MSL,Huntsville, AL	1.490	0.350	10/04					0.000	1.840	1.840
Integ Logistics Support	WR	NSWC/HD, Earle NJ	0.000					0.150	12/06	0.000	0.150	0.150
Integ Logistics Support	CPAF	Lockheed Martin, Dallas TX	3.382							0.000	3.382	3.382
Integ Logistics Support	WR	Logistics Base-Albany, GA	0.037							0.000	0.037	0.037
Integ Logistics Support	FFP	SAIC, McLean VA	0.048	0.028	11/04					0.000	0.076	0.076
Integ Logistics Support	WR	MARFORRES, New Orleans LA	0.022	0.080	10/04					0.000	0.102	0.102
Subtotal Support			<b>4.979</b>	<b>0.458</b>		<b>0.000</b>		<b>0.150</b>		<b>0.000</b>	<b>5.587</b>	<b>5.587</b>
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Test & Eval	WR	NSWC-Dahlgren, VA	1.398			0.500	10/05	1.305	10/06	0.425	3.628	3.628
Dev Test & Eval	WR	Redstone Test Ctr,Huntsville,AL	0.258	0.150	12/04	0.120	12/05	0.410	12/06	0.070	1.008	1.008
Dev Test & Eval	WR	Aberdeen Proving Grounds, MD	1.503							0.000	1.503	1.503
Dev Test & Eval	WR	NSWC-Carderock, MD	0.015					0.079	10/06	0.000	0.094	0.094
Dev Test & Eval	MIPR	DAC, McAlester, OK	0.055					0.090	10/06	0.000	0.145	0.145
Dev Test & Eval	MIPR	Redstone Test Ctr,Huntsville,AL	0.203							0.200	0.403	0.403
Operational Test & Eval	WR	MCOTEA, Quantico, VA	0.466	0.480	12/04	0.195	12/05	0.175	12/06	0.150	1.466	1.466
Operational Test & Eval	MIPR	MARFORRES, New Orleans, LA	0.121							0.000	0.121	0.121
DT/OT Support	WR	OT Test Conduct, Ft. Sill, OK	0.412							0.000	0.412	0.412
Subtotal T&E			<b>4.431</b>	<b>0.630</b>		<b>0.815</b>		<b>2.059</b>		<b>0.845</b>	<b>8.780</b>	<b>8.780</b>
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Mngmnt	WR	MCSC, Quantico, VA	1.294	0.100	10/04	0.225	10/05	0.316	10/06	0.459	2.394	2.394
Program Mngmnt	MIPR	US ARMY Huntsville, AL	1.242	0.151	10/04					0.000	1.393	1.393
Program Mngmnt	FFP	CEOSS, Quantico VA	3.906	0.600	10/04	0.149	10/05	0.250	10/06	0.550	5.455	5.455
Subtotal Management			<b>6.442</b>	<b>0.851</b>		<b>0.374</b>		<b>0.566</b>		<b>1.009</b>	<b>9.242</b>	<b>9.242</b>
Remarks:												
Total Cost			<b>32.252</b>	<b>2.725</b>		<b>4.083</b>		<b>6.179</b>		<b>2.880</b>	<b>48.119</b>	<b>48.119</b>

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<b>Exhibit R-4/a Schedule Profile/Detail</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supt Arms</b>	PROJECT NUMBER AND NAME <b>C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)</b>

Fiscal Year	FY04				FY05				FY06				FY07				FY08				FY09				FY10				FY11			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
MS C/LRIP Decision	♦																															
US Army/USMC OT					←	→																										
LRIP Delivery		♦				♦					♦																					
FRP											♦																					
FRP System Deliveries											←	→																				
M30 FRP Munitions Delivers																																
Interim Capability									←	→																						
IOC																			♦													
FOC																																
USMC GMLRS Unitary DT, Army DT/OT											←	→																				
GMLRS Unitary FRP																							♦									
Unitary FRP Munitions Deliveries																																
HIMARS P3I											←	→																				

<u>Program Funding Summary</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N, 0206623M, HIMARS	2.725	4.083	6.179	2.388	0.492	0.000	0.000	0.000	15.867
(U) PMC, (BLI 205000), EIFGSWS (HIMARS)	15.864	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.864
(U) PMC, (BLI 304001), HIMARS ROCKETS (COMBINED WITH 221200)	1.279	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.279
(U) PMC, (BLI 221200), HIMARS SYSTEMS AND ROCKETS	0.000	177.405	57.524	45.452	109.624	93.181	19.351	Cont	Cont

<b>HIMARS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MC C/LRIP Decision	1Q							
US Army/ USMC Operational Testing	3Q----	-2Q						
LRIP Deliveries	3Q----	-----	-----2Q					
Interim Capability			1Q-----	-----	-----3Q			
USMC Full Rate Production (FRP) Decision			1Q					
USMC FRP Deliveries				1Q----	-----	---2Q		
GMLRS (M30) Munitions Deliveries					3Q---	-----	-----	-----
Initial Operational Capability					3Q			
GMLRS Unitary Munitions								
USMC DT, US Army DT/OT				1Q-----	-----	-----4Q		
GMLRS Unitary FRP						1Q		
Unitary FRP Deliveries							2Q---	-----
HIMARS Pre-Planned Product Improvements (P3I)								
Carrier Upgrades				2Q---	-----4Q			
Comm Upgrades (Cordless VIS, JTRS)				2Q---	-----	2Q---	-----4Q	
Armor Upgrades						2Q---	-----4Q	

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supt Arms</b>	PROJECT NUMBER AND NAME <b>C3098 Fire Support Systems</b>
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COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost	<b>19.835</b>	<b>11.470</b>	<b>7.717</b>	<b>7.456</b>	<b>8.719</b>	<b>7.571</b>	<b>7.258</b>
RDT&E Articles Qty							

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

(U) This Project develops joint and Marine Corps unique improvements to artillery technology, USMC unique Amphibious Armor Systems (AAS), and international weapons developments. The AN/GVS-5 Laser Range Finder, Family of Artillery Munitions, Fire Support Mods, and the Mortar Ballistic Computer moved to this project from project C1901 within this Program Element.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>0.281</b>	<b>0.276</b>	<b>0.289</b>
RDT&E Articles Qty			

**Family of Artillery Munitions (FAM):** Support a production decision for the Multi Option Fuze Artillery (MOFA), and Portable Inductive Artillery Fuze Setter (PIAFS) to include: Weapons Systems Explosive Safety Review Board 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.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>1.653</b>	<b>1.637</b>	<b>1.719</b>
RDT&E Articles Qty			

**Fire Support Mods:** Joint participation in artillery and fire support improvement projects. Specific projects include phase-in/phase-out of M198 Howitzer / LW 155mm Howitzer and development of Global Positioning System-Selective Availability Anti-Spoofing Module (GPS-SAASM) capability and upgrade of Meteorological (MET) processing computer for the Meteorological Measuring System (MMS) and develop Electronic Meteorological Theodolite (EMT) capability.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>1.029</b>	<b>0.732</b>	<b>0.361</b>
RDT&E Articles Qty			

**Fire Support Sustainment - Fielded Sys Readiness:** Research operational and logistical deficiencies on fielded systems and equipment, such as M198 Howitzers, Position and Azimuth Determining Systems (PADS), and Modular Universal Laser Equipment (MULE) Laser Designators. Develop and field modifications to improve system safety, enhance operational efficiency, and reduce life cycle costs.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>1.068</b>	<b>0.701</b>	<b>0.308</b>
RDT&E Articles Qty			

**Mortar Ballistic Computer (MBC):** Integration effort of Government-Furnished Equipment (GFE) software with a common hardware suite (CHS) platform. Prepare for and conduct combined Developmental Testing (DT) and Operational Testing (OT) to include Live Fire User Evaluation. Conduct Interim Progress Review (IPR). Prepare for Milestone C decision. Requirements review to determine evolution to future block upgrades.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supt Arms</b>	<b>C3098 Fire Support Systems</b>		
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.306</b>	<b>0.181</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>AN/GVS-5 Replacement (AEROS):</b> Engineering and programmatic support as well as the integration of a pre-planned product improvement (P3I) to the AEROS program. The focus of the P3I effort will be the integration of ETALS in the AEROS. ETALS is a Science and Technology (S&amp;T) effort that is being funded through the Office of Naval Research (ONR). The research and development effort is being performed by the Naval Surface Warfare Center (NSWC), Dahlgren, Virginia.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>15.042</b>	<b>6.932</b>	<b>4.040</b>
RDT&E Articles Qty				
<p><b>Expeditionary Fire Support System (EFSS):</b> 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&amp;D) with a single vendor - General Dynamics Ordnance and Tactical Systems. Milestone C decision made in June 2005. Functional Configuration Audit scheduled for November 2005 and the Critical Design Review for March 2006. Operation Testing (OT) shall be completed by August 2006 and the IOC is scheduled for late FY06.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>1.000</b>	<b>1.000</b>
RDT&E Articles Qty				
<p><b>Metorological Measuring Sets (MMS Profiler):</b> The RDT&amp;E dollars listed above will be used to develop, and test a network centric meteorological capability that removes the balloon from the battlefield, enhances artillery accuracy, expands the coverage of meteorological information, and supports future firing systems. This is a collaborative effort being conducted with the Meteorological/Oceanographic departments of the other services with the intent of acquiring cost-effective, interoperable, network-centric information infrastructure that supports the operational requirements of the war fighter.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.456</b>	<b>0.011</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Improved Position Azimuth Determination System (IPADS):</b> Program support, contractor design effort, and the procurement of systems for developmental/operational testing and system integration. Development effort supports the Milestone C decision.</p>				
(U) Total \$		<b>19.835</b>	<b>11.470</b>	<b>7.717</b>

**UNCLASSIFIED**

**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supt Arms</b>	PROJECT NUMBER AND NAME <b>C3098 Fire Support Systems</b>
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**(U) PROJECT CHANGE SUMMARY:** FY 2005 FY 2006 FY 2007

**(U) FY 2006 President's Budget:** 12.079 11.645 7.680

(U) Adjustments from the President's Budget:

(U) Congressional Program Reductions

(U) Congressional Rescissions

(U) Congressional Increases

(U) POM 06 Core Adjustment

(U) Reprogrammings 8.011

(U) SBIR/STTR Transfer -0.248

(U) Minor Affordability Adjustment -0.007 -0.175 0.037

**(U) FY 2007 President's Budget:** **19.835 11.470 7.717**

CHANGE SUMMARY EXPLANATION:

(U) Funding: See above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI# 473300 Meteorological Measuring Sets (FSS)	0.000	3.012	1.460	0.000	0.000	0.000	0.000	0.000	4.472
PMC BLI# 473300 Fire Supp Sys (IPADS)	7.774	4.891	0.000	0.000	0.000	0.000	0.000	0.000	12.665
PMC BLI# 473300 FSS (Mortar Ballistic Computer)	0.373	1.635	0.000	0.000	0.000	0.000	0.000	0.000	2.008
PMC BLI# 473300 Fire Supp Sustainment	0.000	1.777	4.277	4.429	4.557	4.663	4.789	Cont	Cont
PMC BLI# 473300 AEROS (AN/GVS-5) / CLRF	0.590	20.000	25.870	0.369	0.000	0.000	0.000	0.000	46.829
PMC BLI# 473300 PIAFS	0.000	0.368	0.201	0.000	0.000	0.000	0.000	0.000	0.569
PMC BLI# 206300 Mod Kits AFS (PIAFS)	1.629	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.629
PMC BLI# 206300 Mod Kits AFS (Fire Supp Sustainment)	2.325	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.325
PMC BLI# 206400 Expeditionary Fire Support Sys	0.000	5.648	7.361	5.870	9.785	10.156	0.000	0.000	38.820
PMC BLI# 493000 AN/GVS-5 (FSS)	5.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.300
PMC BLI# 646800 AN/GVS-5 (FSS)	0.026	0.033	0.034	0.018	0.000	0.000	0.000	0.000	0.111
PMC BLI# 646800 IPADS (FSS)	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.060
PMC BLI# 700000 PRIME VENDOR - IPADS (FSS)	0.146	0.516	0.000	0.000	0.000	0.000	0.000	0.000	0.662
PMC BLI# 700000 PRIME VENDOR (CLRF)	0.728	0.736	0.780	0.000	0.000	0.000	0.000	0.000	2.244
PMC BLI# 700000 PRIME VENDOR (EFSS)	0.000	0.200	0.432	0.864	0.000	0.000	0.000	0.000	1.496

**(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 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:**

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground		C3098 Fire Support Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>			<b>SEE BELOW</b>									
AN/GVS-5 Replacement	RCP	MKI Woodbridge, VA	0.361							0.000	0.361	
EFSS	RCP	GDOTS	0.557	10.232	2Q05	2.700	1Q06	2.000	1Q07	Cont	Cont	
EFSS	VAR	VARIOUS	0.000	0.600	2Q05	0.590	2Q06	0.500	2Q07	Cont	Cont	
Fire Spt Mods	MIPR	CECOM, Ft Monmouth NJ	0.403							0.000	0.403	
Fire Spt Mods	RCP	Smith Indus, Gd Rapids, MI	0.400	0.802	1Q05	0.800	1Q06	0.700	TBD	Cont	Cont	
Fire Spt Mods - Fielded Sys Readiness	VAR	TBD	0.000	0.260	1Q05	0.400	TBD	0.361	TBD	Cont	Cont	
IPADS	VAR	VARIOUS	1.409							0.000	1.409	
MBC	VAR	VARIOUS	0.315	0.200	2Q05	0.413	TBD			0.000	0.928	
MMS Profiler	MIPR	TBD	0.000			0.800	TBD	0.800	TBD	0.000	1.600	
<b>Subtotal Product Dev</b>			<b>3.445</b>	<b>12.094</b>		<b>5.703</b>		<b>4.361</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PROGRAM SUPPORT</b>			<b>SEE BELOW</b>									
AN/GVS-5 Replacement	WR	MCSC, Quantico, VA	0.244							0.000	0.244	
AN/GVS-5 Replacement	RCP	CEOSS	0.295	0.306	1Q05	0.181	1Q06			0.000	0.782	
AN/GVS-5 Replacement	MIPR	Marine Det, Ft Sill, OK	0.015							0.000	0.015	
EFSS	RCP	CTQ, Quantico, Va	0.581	1.463	1Q05	0.708	1Q06	0.343	1Q07	Cont	Cont	
EFSS	WR	NSWCDD, Dahlgren, Va.	0.412	0.500	1Q05	0.200	1Q06	0.100	1Q07	Cont	Cont	
Fam Artillery Munitions	WR/RCP	BAEST, Stafford, VA	0.057	0.059	1Q05	0.276	1Q06	0.289	1Q07	Cont	Cont	
Fire Spt Mods	WR/RCP	BAEST, Stafford, VA	0.241	0.380	1Q05	0.450	1Q06	0.500	1Q07	Cont	Cont	
Fire Spt Mods - Fielded Sys Readiness	VAR	EG&G	0.118	0.255	2Q05	0.332	1Q06			Cont	Cont	
IPADS	VAR	VARIOUS	0.250			0.011	TBD			0.000	0.261	
MBC	VAR	VARIOUS	0.500	0.580	2Q05	0.288	TBD	0.308	1Q07	0.000	1.676	
MMS Profiler	RCP	CEOSS	0.000			0.200	1Q06	0.200	1Q07	Cont	Cont	
<b>Subtotal Support</b>			<b>2.713</b>	<b>3.543</b>		<b>2.646</b>		<b>1.740</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:



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Exhibit R-3 Cost Analysis

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground		C3098 Fire Support Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>T&amp;E</b>			<b>SEE BELOW</b>									
AN/GVS-5 Replacement	WR	MCOTEA, Quantico, VA	0.185							0.000	0.185	
EFSS	WR	NSWCDD, Dahlgren, Va.	0.180	0.500	2Q05	0.592	2Q06	0.200	2Q07	Cont	Cont	
Fam Artillery Munitions	WR/RCP	NSWC, Crane, IN	0.222	0.222	2Q05					Cont	Cont	
Fire Spt Mods	WR	MCOTEA, Quantico, VA	0.000	0.200	2Q05	0.200	1Q06	0.246	1Q07	Cont	Cont	
Fire Spt Mods - Fielded Sys Readiness	VAR	PICATINNY, NJ	0.000	0.304	2Q05					Cont	Cont	
IPADS	WR	VARIOUS	0.151	0.180	2Q05					0.000	0.331	
MBC	WR	VARIOUS	0.497	0.288	2Q05					0.000	0.785	
MMS Profiler			0.000							Cont	Cont	
<b>Subtotal T&amp;E</b>			<b>1.235</b>	<b>1.694</b>		<b>0.792</b>		<b>0.446</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>MANAGEMENT</b>			<b>SEE BELOW</b>									
EFSS	WR	MCPD, Fallbrook, CA	0.536	0.152	2Q05	0.692	2Q06	0.325	2Q07	Cont	Cont	
EFSS	RCP	GDOTS, St. Petersburg, FL.	1.026	1.595	1Q05	1.450	1Q06	0.572	1Q07	Cont	Cont	
Fire Spt Mods	WR	MCSC, Quantico, VA	0.000	0.271	2Q05	0.187	2Q06	0.273	2Q07	Cont	Cont	
Fire Spt Mods - Fielded Sys Readiness	RCP	BAEST, Stafford, VA	0.050	0.210	1Q05					Cont	Cont	
IPADS	WR	MCSC, Quantico, VA	0.795	0.276	2Q05					0.000	1.071	
MBC	WR	MCSC, Quantico VA	0.240							0.000	0.240	
MMS Profiler			0.000							Cont	Cont	
<b>Subtotal Management</b>			<b>2.647</b>	<b>2.504</b>		<b>2.329</b>		<b>1.170</b>		<b>Cont</b>	<b>Cont</b>	

Remarks:

<b>Total Cost</b>			<b>10.040</b>	<b>19.835</b>		<b>11.470</b>		<b>7.717</b>		<b>Cont</b>	<b>Cont</b>	
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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

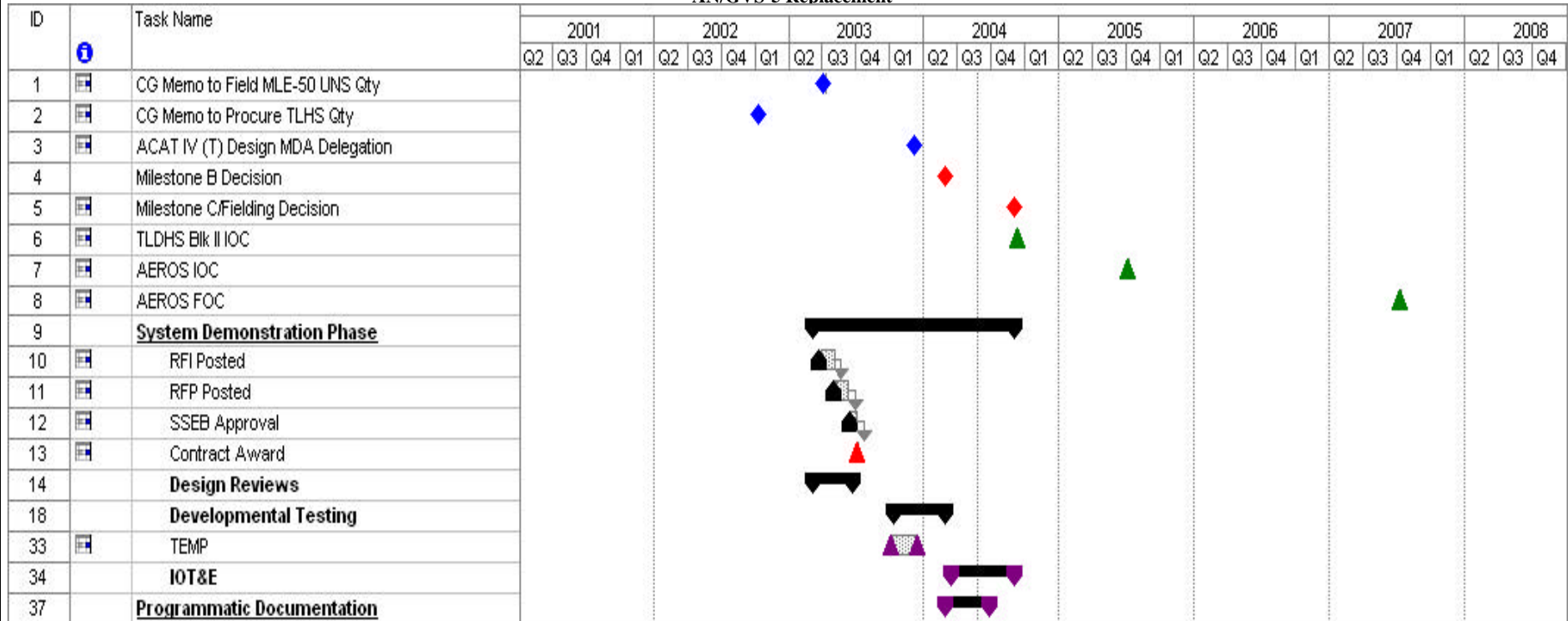
**February 2006**

APPROPRIATION/BUDGET ACTIVITY  
**RDT&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**

**AEROS PROGRAM  
AN/GVS-5 Replacement**



**Program Funding Summary**

(APPN, BLI #, NOMEN)

**(U) RDT&E,N (C3098) AN/GVS-5**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PMC BLI# 493000 AN/GVS-5 (FSS)	5.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.300
PMC BLI# 473300 AEROS (AN/GVS-5) / CLRF	0.590	20.000	25.870	0.369	0.000	0.000	0.000	0.000	46.829
PMC BLI# 646800 AN/GVS-5 (FSS)	0.026	0.033	0.034	0.018	0.000	0.000	0.000	0.000	0.111
PMC BLI# 700000 PRIME VENDOR (CLRF)	0.728	0.736	0.780	0.000	0.000	0.000	0.000	0.000	2.244

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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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**

<b>AEROS SCHEDULE DETAIL</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
CG Memo to Fielding MLE-50 UNS	Q3								
CG Memo to Procure TLDHS AEROS Qty	Q1								
Program ACAT IV (T) Designation		Q1							
Milestone B		Q2							
Issue Draft Request for Proposal (RFP)	Q2								
Pre-Solicitation Conference	Q2								
Issue Final RFP	Q2								
Source Selection, Including User Evaluation	Q3								
Award Firm Fixed Price Contract with Production Options	Q3								
Developmental Testing	Q4 through	Q3							
Operational Testing (OT)		Q2							
Milestone C / Fielding Decision		Q4							
Exercise Production Option		Q4							
Production		Q4							
Initial Operational Capability (IOC)			Q4						
Full Operational Capability (FOC)					Q4				

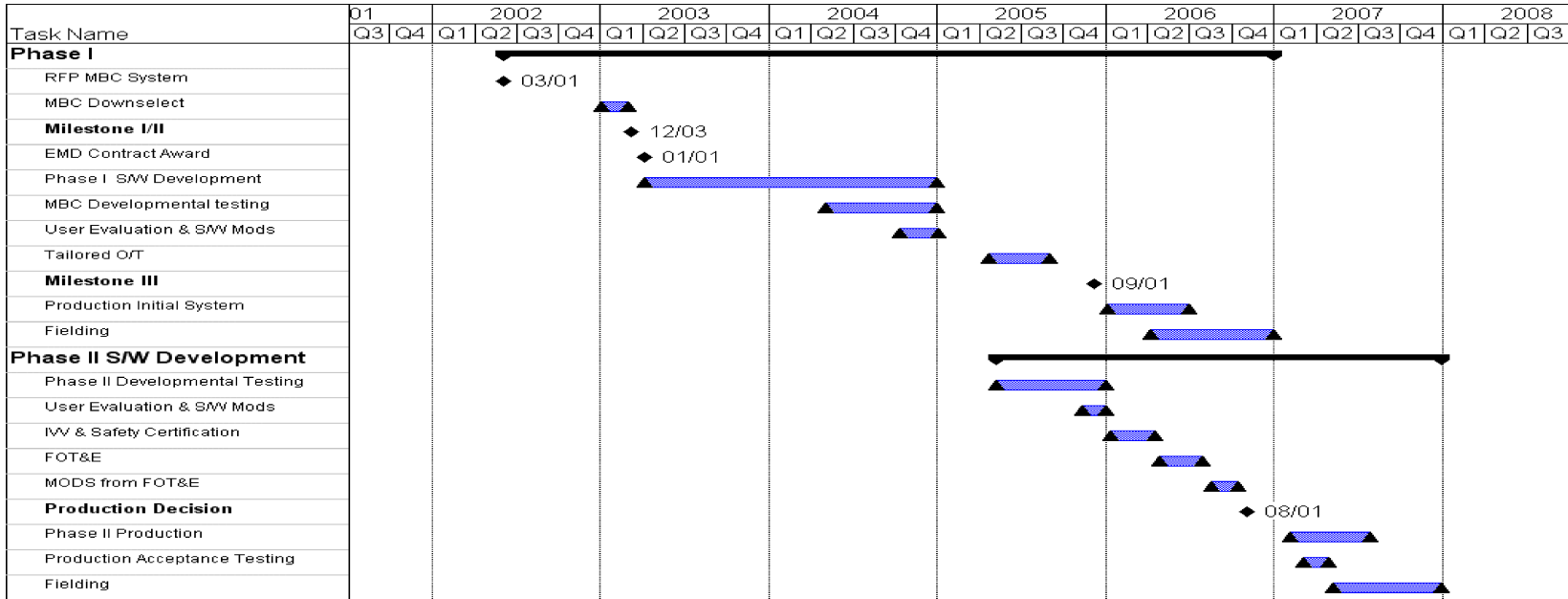
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DATE: February 2006

Exhibit R-4/4a Schedule Profile/Detail

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

**MORTAR BALLISTIC COMPUTER**



<u>Program Funding Summary</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(APPN, BLI #,									
(U) RDT&E,N (C3098) MBC	1.068	0.701	0.308	0.000	0.000	0.000	0.000	0.000	2.077
PMC BLI# 473300 FSS (Mortar Ballistic Computer)	0.373	1.635	0.000	0.000	0.000	0.000	0.000	0.000	2.008

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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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**

<b>MBC SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
<b>Phase I</b>								
RFP Mortar								
Ballistic								
Select								
I/II								
Contract								
Software								
Developme	2Q							
Evaluation	3Q							
Operational	3Q							
Milestone III		1Q						
Initial		1Q						
Fielding		3Q						
<b>Phase II -</b>		1Q						
Developme		1Q						
Evaluation		4Q						
Certification			1Q					
FOT&E			2Q					
FOT&E			3Q					
Decision			4Q					
Production				1Q				
Acceptance				1Q				
Fielding				2Q				

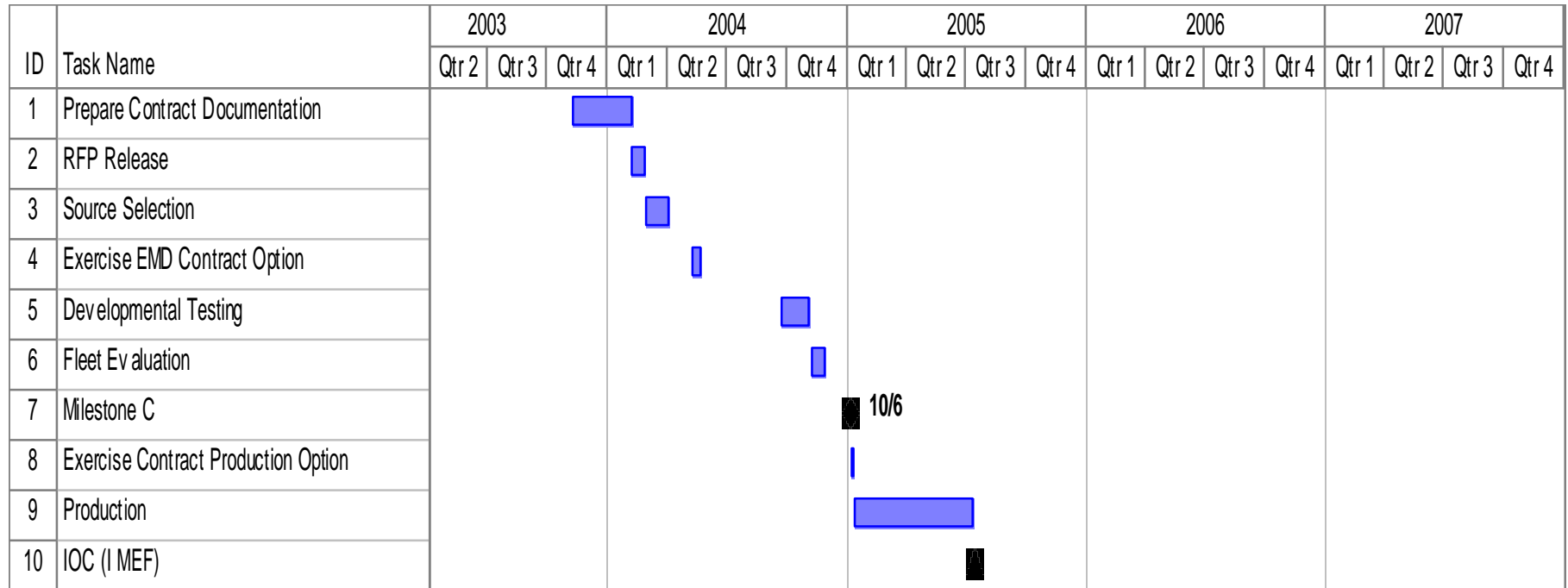
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DATE: **February 2006**

**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C3098 Fire Support Systems</b>
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**IMPROVED POSITIONING AZIMUTH DETERMINING SYSTEM**



**Program Funding Summary**

**(APPN, BLI #, NOMEN)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
<b>(U) RDT&amp;E,N (C3098) IPADS</b>	0.456	0.011	0.000	0.000	0.000			0.000	0.467
PMC BLI# 473300 Fire Supp Sys (IPADS)	7.774	4.891	0.000	0.000	0.000	0.000	0.000	0.000	12.665
PMC BLI# 700000 PRIME VENDOR - IPADS (FSS)	0.146	0.516	0.000	0.000	0.000	0.000	0.000	0.000	0.662
PMC BLI# 646800 IPADS (FSS)	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.060

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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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**

<b>IPADS SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prepare Contract Documentation								
RFP Release								
Source Selection								
Exercise EMD Contract Option								
Developmental Testing/OT	1Q							
Fleet Evaluation	4Q							
Milestone C		1Q						
Exercise Contract Production Option								
Production		1Q						
Initial Operational Capability (I MEF)		3Q						

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Exhibit R-4/4a Schedule Profile/Detail

DATE:

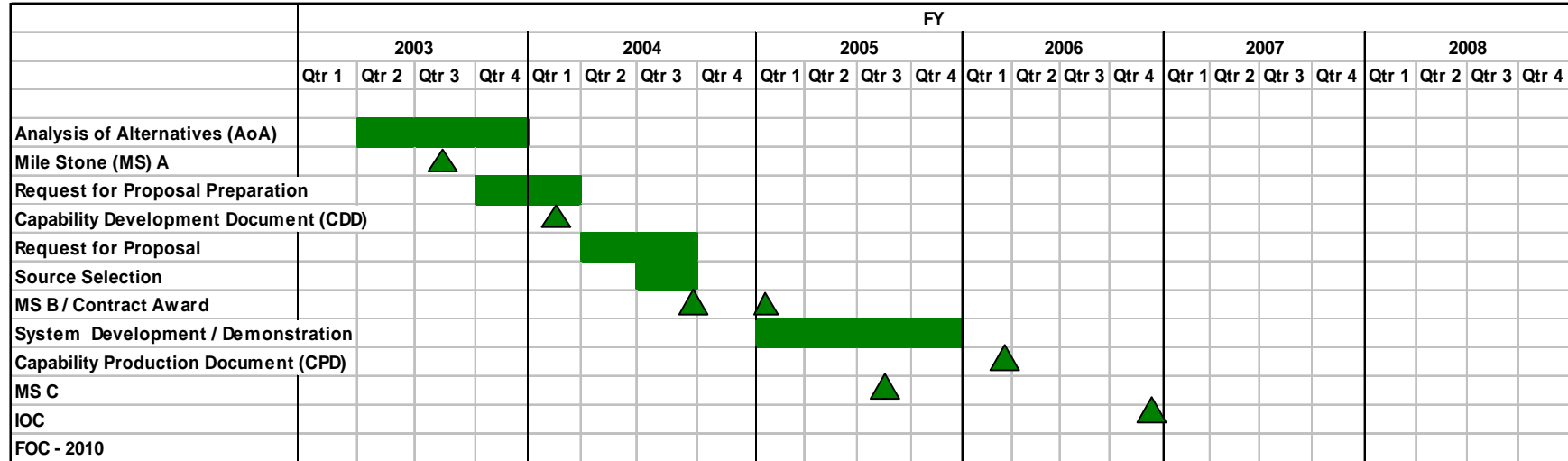
February 2006

APPROPRIATION/BUDGET ACTIVITY  
RDT&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

## Expeditionary Fire Support System (EFSS)



**Program Funding Summary**  
(APPN, BLI #, NOMEN)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N (C3098) EFSS	15.043	6.932	4.040	4.002	5.256	5.075	4.730	Cont	Cont
PMC BLI# 206400 Expeditionary Fire Support Sys	0.000	5.648	7.361	5.870	9.785	10.156	0.000	0.000	38.820
PMC BLI# 700000 PRIME VENDOR (EFSS)	0.000	0.200	0.432	0.864	0.000	0.000	0.000	0.000	1.496



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**Exhibit R-4/4a Schedule Profile/Detail**

DATE:

**February 2006**

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**

<b>EFSS SCHEDULE DETAIL</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Milestone A	3Q							
Milestone B		4Q						
Milestone C			3Q					
Initial Operational Capability				4Q				
Full Operational Capability								1Q

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>		<b>C4002 Family of Raid and Reconnaissance Equipment</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY10	FY11
Project Cost	<b>3.216</b>	<b>1.756</b>	<b>0.680</b>	<b>1.175</b>	<b>0.168</b>	<b>0.163</b>	<b>0.160</b>
RDT&E Articles Qty							

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

The Family of Raid and Reconnaissance Equipment program supports the research, development, and procurement actions for multiple airborne/parachuting and specialized reconnaissance related programs. This line focuses on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces. This will include improving airborne capability equipment and items for direct action missions that use this specialized raid equipment.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>0.610</b>	<b>0.852</b>	<b>0.488</b>
RDT&E Articles Qty			

**Family of Raids and Reconnaissance Equipment:** Integrate logistics to standardize and improve existing close quarters battle and direct action combat equipment and all Marine Corps parachute programs. On-going support to existing items that meet mission requirements for close quarter battle and parachute operations. Development of airborne systems that will allow military parachutists to carry combat equipment in various configurations and a means of supplying/re-supplying combat essentials to Marine units. Development on High Altitude High Opening (HAHO) navigation board, improved jumpers helmet, oxygen (O2) console system integrated with V-22 Osprey, and High Altitude Low Opening (HALO)/HAHO jumpers kit.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.192</b>	<b>0.192</b>
RDT&E Articles Qty			

**Family of Small Craft:** Conduct engineering analysis and exploration of enhancements for modifications of the Family of Small Craft programs. The Small Unit Riverine Craft (SURC), Raid Open Water Safety Craft (ROWSC), Combat Rubber Reconnaissance Craft (CRRC), Non-Gasoline Burning Outboard Engines (NBOE), and other small craft items will be supported in the future as new craft and engines are fielded.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	<b>2.606</b>	<b>0.712</b>	<b>0.000</b>
RDT&E Articles Qty			

**Underwater Reconnaissance Capability (URC):** Concept exploration and development of prototypes for Divers Propulsion Device (DPD) and for the Tactical Hydrographic Survey Equipment (THSE) in support of underwater reconnaissance operations.

<b>(U) Total \$</b>	<b>3.216</b>	<b>1.756</b>	<b>0.680</b>
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	<b>C4002 Family of Raid and Reconnaissance Equipment</b>

<b>(U) PROJECT CHANGE SUMMARY:</b>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
<b>(U) FY 2006 President's Budget:</b>	<b>3.401</b>	<b>1.783</b>	<b>2.181</b>
(U) Adjustments from the President's Budget:			
(U) Congressional Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.159		
(U) Small Business Innovation Research Transfer	-0.024		
(U) Minor Affordability Adjustment	-0.002	-0.027	-1.501
<b>(U) FY 2007 President's Budget:</b>	<b>3.216</b>	<b>1.756</b>	<b>0.680</b>
CHANGE SUMMARY EXPLANATION:			
(U) Funding: See above.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			

<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI #643400 Amph Raid Equipment	62.223	0.000	0.000	0.000	0.000	0.000	0.000	0.000	62.223
PMC BLI #651800 Amph Support Equipment	0.000	15.250	13.218	15.415	24.950	12.794	13.007	Cont	Cont

FY 05 column includes approved supplemental request  
**(U) Related RDT&E:** Not Applicable.

**(U) D. ACQUISITION STRATEGY:**  
 The acquisition strategy consists of market surveys to identify off-the-shelf/non-developmental item baseline competitors. This will be followed by a 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.

**(U) E. MAJOR PERFORMERS:**

Oct 05, Oct 06	Panama City, FL	Coastal Systems Station (CSS), system engineering in support of underwater and parachute reconnaissance operations.
Nov 05, Nov 06	Natick, MA	Natick Labs, system engineering
Jan 06	Suffolk, VA	NSWC, Carderock, system engineering

**UNCLASSIFIED**

**Exhibit R-3 Cost Analysis**

**DATE: February 2006**

APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>		<b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>			<b>C4002 Family of Raid and Reconnaissance Equipment</b>							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware development	RCP	MCSC, Quantico, VA	1.193					0.000		Cont	Cont	
Systems Engineering	WR	CSS, Panama City, FL	1.930	2.649	10/04	1.077	10/05	0.377	10/06	Cont	Cont	
Systems Engineering	WR	Natick Labs, Natick, MA	0.107	0.142	11/04	0.116	11/05	0.000		Cont	Cont	
Systems Engineering	WR	NSWC, Suffolk, VA				0.175	01/06	0.173	11/06			
Systems Engineering	WR	NAWC, Patuxent River, MD				0.013	01/06					
<b>Subtotal Product Development</b>			<b>3.230</b>	<b>2.791</b>		<b>1.381</b>		<b>0.550</b>		<b>Cont</b>	<b>Cont</b>	

Remarks: Funding for this program in prior years is provided under Project C1901 within this PE.

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	RCP	BAE Inc, Stafford, VA	0.190	0.305	10/04	0.000		0.000		Cont	Cont	
<b>Subtotal Support</b>			<b>0.190</b>	<b>0.305</b>		<b>0.000</b>		<b>0.000</b>		<b>Cont</b>	<b>Cont</b>	

Remarks: Funding for this program in prior years is provided under Project C1901 within this PE.

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Testing/Eval	RCP	MCOTEA, Quantico, VA	0.040	0.000	11/04	0.000				0.000	0.040	
<b>Subtotal T&amp;E</b>			<b>0.040</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>0.040</b>	

Remarks: Funding for this program in prior years is provided under Project C1901 within this PE.

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management	RCP	MCSC, Quantico, VA	0.079	0.120	12/04	0.375	12/05	0.130	12/06	Cont	Cont	
<b>Subtotal Management</b>			<b>0.079</b>	<b>0.120</b>		<b>0.375</b>		<b>0.130</b>		<b>Cont</b>	<b>Cont</b>	

Remarks: Funding for this program in prior years is provided under Project C1901 within this PE.

<b>Total Cost</b>			<b>3.539</b>	<b>3.216</b>		<b>1.756</b>		<b>0.680</b>		<b>Cont</b>	<b>Cont</b>	
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DATE: **February 2006**

**Exhibit R-4/4a Schedule Profile/Detail**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT <b>0206623M Marine Corps Ground Combat/Supporting Arms Systems</b>	PROJECT NUMBER AND NAME <b>C4002 Family of Raid and Reconnaissance Equipment</b>
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ID	Task Name	Duration	Start	Finish	2003		2004		2005		2006		2007		2008		2009		2010					
					3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
1	<b>Underwater Reconnaissance Capability</b>	1827 days	Mon 7/1/02	Tue 6/30/09	[Gantt bar from 7/1/02 to 6/30/09]																			
2	Program Initiation	0 days	Mon 7/1/02	Mon 7/1/02	■	7/1																		
3																								
4	<b>Diver Propulsion Device</b>	1827 days	Mon 7/1/02	Tue 6/30/09	[Gantt bar from 7/1/02 to 6/30/09]																			
5	Pre Milestone B	260 days	Mon 7/1/02	Fri 6/27/03	[Gantt bar from 7/1/02 to 6/27/03]																			
6	Milestone B	0 days	Tue 7/1/03	Tue 7/1/03	■ 7/1																			
7	R&D	410 days	Mon 7/1/02	Fri 1/23/04	[Gantt bar from 7/1/02 to 1/23/04]																			
8	Milestone C Decision	0 days	Fri 7/23/04	Fri 7/23/04	■ 7/23																			
9	PMC	636 days	Fri 10/1/04	Fri 3/9/07	[Gantt bar from 10/1/04 to 3/9/07]																			
10	Production of 62 units	370 days	Tue 2/1/05	Mon 7/3/06	[Gantt bar from 2/1/05 to 7/3/06]																			
11	Production of 62 units	273 days	Wed 2/1/06	Fri 2/16/07	[Gantt bar from 2/1/06 to 2/16/07]																			
12																								
13	<b>Tactical Hydrographic Survey Equipment</b>	1305 days	Mon 7/1/02	Fri 6/29/07	[Gantt bar from 7/1/02 to 6/29/07]																			
14	Pre Milestone B	260 days	Tue 7/2/02	Mon 6/30/03	[Gantt bar from 7/2/02 to 6/30/03]																			
15	Milestone B	0 days	Tue 7/1/03	Tue 7/1/03	■ 7/1																			
16	R&D	480 days	Thu 8/29/02	Wed 6/30/04	[Gantt bar from 8/29/02 to 6/30/04]																			
17	Developmental/Operational Testing	456 days	Fri 8/1/03	Fri 4/29/05	[Gantt bar from 8/1/03 to 4/29/05]																			
18	Milestone C Decision	0 days	Mon 8/1/05	Mon 8/1/05	■ 8/1																			
19	Production	477 days	Mon 1/2/06	Tue 10/30/07	[Gantt bar from 1/2/06 to 10/30/07]																			

**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E,N C4002 URC

(U) PMC, BLI# 643400 URC

(U) PMC, BLI# 651800 URC

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
<u>(U) RDT&amp;E,N C4002 URC</u>	2.606	0.712	0.000	0.535	0.060	0.000	0.000	0.000	3.913
<u>(U) PMC, BLI# 643400 URC</u>	5.307	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.307
<u>(U) PMC, BLI# 651800 URC</u>	0.000	7.692	6.340	2.883	4.504	0.000	0.000	0.000	21.419

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**Exhibit R-4/4a Schedule Profile/Detail**

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	C4002 Family of Raid and Reconnaissance Equipment							
<b>URC SCHEDULE DETAIL</b>		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Diver Propulsion Device									
Milestone C		4Q							
Tactical Hydrographic Survey Equipment									
Developmental/Operational Testing		1Q-4Q	1Q-3Q						
Milestone C			4Q						

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EXHIBIT R-2a, RDT&E Project Justification

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February 2006

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206623M Marine Corps Ground Combat/Supt Arms</b>		PROJECT NUMBER AND NAME <b>C9999 FY06 Congressional Adds</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011
Project Cost	0.000	25.300	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty							

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

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	0.000	0.600	0.000
RDT&E Articles Qty			

**AntiOxidant Micronutrients Pgm 9644C:** The micronutrients/antioxidants is a dietary supplement program that has the efficacy of reducing the level of oxidation damage and oxidative stress found in stressful situations/environments and posttraumatic wounding/injuries. The dietary supplement is a special daily vitamin formulary being researched to provide stress relief/reduction of heat, NBC and posttraumatic wounding/injuries.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	0.000	11.000	0.000
RDT&E Articles Qty			

**Expeditionary Fire Support System 9867N:** Obtain Insensitive Munitions (IM) compliant Ammunition for qualification, safety certification, to support operational testing, Developmental testing Jan-Jul 2006, Initial Safety Certification for Operational Testing NLT Aug 2006. Operational Test Sept-Dec 2006. Final IM safety certification Feb 2007.

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	0.000	1.000	0.000
RDT&E Articles Qty			

**M200 Long Range Rifle Sys 9868N:**

COST (\$ in Millions)	FY 2005	FY06	FY07
Accomplishment/Effort Subtotal Cost	0.000	2.600	0.000
RDT&E Articles Qty			

**MC LAV Integrated Digital/Collab Envir 9641C:** Continuation of the effort started in FY05 to stand up an IDE service center which will allow key LAV maintenance and support data accessibility and sharing across the USMC enterprise.

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EXHIBIT R-2a, RDT&E Project Justification

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**February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206623M Marine Corps Ground Combat/Supt Arms</b>	<b>C9999 FY06 Congressional Adds</b>		
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>5.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Multi-Role Intermediate Supt Craft 9869N:</b> Conduct initial evaluations of existing COTS variants of the Surface Planning Wet Submersible (SPWS) Craft leading to procurement of a medium sized fixed rigid hull craft that can operate on the surface and in an underwater concealment mode. Marine Corps reconnaissance and other designated units will employ the MRISC in littoral combat operations to execute the full range of Marine Expeditionary Unit (MEU)-Special Operations Capable (SOC) missions in support of MAGTF.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>2.100</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Solid St Laminate Metal-Ceramic Armor 9870N:</b> Determine the applicability of using ultrasonic consolidation technology to develop improved metal-matrix armor packages for Light Armored Vehicles.</p>				
COST (\$ in Millions)		FY 2005	FY2006	FY2007
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>3.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<p><b>Ultrasonic Consolid Embedded Sensors 9871N:</b> Determine whether ultrasonic consolidation technology can successfully embed vehicle health monitoring sensors in a variety of components in support of the LAV Sense and Respond effort.</p>				
(U) Total \$		<b>0.000</b>	<b>25.300</b>	<b>0.000</b>



**CLASSIFICATION:**

EXHIBIT R-2, RDT&amp;E Budget Item Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY  
RDT&E, N /BA-7 Operational Sys DevPROGRAM ELEMENT (PE) NAME AND NO.  
0206624M Marine Corps Combat Services Support

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	15.908	16.318	17.524	13.106	4.003	2.661	2.730
C0076 Medium Tactical Vehicle Replacement (MTVR)	2.264	0.782	0.0	0.0	0.0	0.0	0.0
*C0201 Logistical Vehicle System Replacement (LVSR)	8.324	1.446	7.652	1.115	0.920	0.0	0.0
C2316 Combat Service Support Engineering Equipment	2.649	3.376	2.028	0.532	0.539	0.551	0.562
C2509 Motor Transport Modernization	0.433	0.447	0.560	0.581	0.594	0.602	0.619
C2929 Testing Measuring Diagnostic Equip (TMDE) & SE	1.274	4.267	7.284	10.878	1.950	1.508	1.549
C9645 Battlefield Management System	0.964	0.0	0.0	0.0	0.0	0.0	0.0
C9999 FY06 Congressional Adds	0.0	6.000	0.0	0.0	0.0	0.0	0.0
Quantity of RDT&E Articles							

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

This program 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 requirements. It will also determine the reconfiguration of the current Twin Agent Unit firefighting apparatus and provide a portable, highly mobile general-purpose automatic tester designed for use by technicians in the garrison and at the forward edge of the battlefield.

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 provides 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.

\*C0201 \$4.488M of FY05 funds will forward finance FY06.

**CLASSIFICATION:**

EXHIBIT R-2, RDT&amp;E Budget Item Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&amp;E, N /BA-7 Operational Sys Dev

PROGRAM ELEMENT (PE) NAME AND NO.

0206624M Marine Corps Combat Services Support

**B. PROGRAM CHANGE SUMMARY**

	FY2005	FY2006	FY2007
<b>(U) FY 2006 President's Budget:</b>	<b>16.109</b>	<b>10.476</b>	<b>13.440</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases		6.000	
(U) POM 06 Core Adjustment			
(U) Reprogrammings	0.063		4.000
(U) SBIR/STTR Transfer	-0.257		
(U) Minor Affordability Adjustment	-0.007	-0.158	0.084
<b>(U) FY 2007 President's Budget:</b>	<b>15.908</b>	<b>16.318</b>	<b>17.524</b>

## CHANGE SUMMARY EXPLANATION:

- (U) Funding: See Above.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

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EXHIBIT R-2a, RDT&E Project Justification

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206624M Marine Corps Combat Services Support</b>	PROJECT NUMBER AND NAME <b>C0201 Logistical Vehicle System Replacement (LVSR)</b>					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	8.324	1.446	7.652	1.115	0.920	0.000	0.000
RDT&E Articles Qty	1	1	1				

**(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 5th Wheel and Wrecker variants which will be 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.

**\*\$4.488M of FY05 funds will forward finance FY06.**

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	2.769	0.046	2.169
RDT&E Articles Qty			
<b>LVSR: Developmental Test and Evaluation.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	0.065	0.000	0.590
RDT&E Articles Qty			
<b>LVSR: Program Management and Support / Contract Support.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	4.490	0.000	3.500
RDT&E Articles Qty	1		1
<b>LVSR: Procure Prototypes.</b> (FY06 RDT&E Articles Qty's are 5th Wheel and Wrecker Variants)			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	1.000	0.000	0.000
RDT&E Articles Qty			
<b>LVSR: Engineering Support.</b>			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	0.000	0.022	0.436
RDT&E Articles Qty			

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206624M Marine Corps Combat Services Support</b>	<b>C0201 Logistical Vehicle System Replacement (LVSR)</b>

**FRC: Provide Program Management and support.**

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>1.378</b>	<b>0.718</b>
RDT&E Articles Qty		1	

**FRC: Prototype Development.**

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.239</b>
RDT&E Articles Qty			

**FRC: Developmental Test and Evaluation**

(U) Total \$	<b>8.324</b>	<b>1.446</b>	<b>7.652</b>
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<b>(U) Project Change Summary</b>	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
<b>(U) FY2006 President's Budget:</b>	<b>9.210</b>	<b>1.468</b>	<b>5.115</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	-0.763		2.500
(U) SBIR/STTR Transfer	-0.121		
(U) Minor Affordability Adjustment	-0.002	-0.022	0.037
<b>(U) FY2007 President's Budget:</b>	<b>8.324</b>	<b>1.446</b>	<b>7.652</b>

CHANGE SUMMARY EXPLANATION:

- (U) Funding: See above.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b>	<b>PROJECT NUMBER AND NAME</b>
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206624M Marine Corps Combat Services Support</b>	<b>C0201 Logistical Vehicle System Replacement (LVSR)</b>

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC Line (BLI# 509300) FlatRack	0.000	0.000	7.151	16.740	37.480	0.000	0.000	0.000	61.371
(U) PMC Line (BLI# 509300) LVSR	0.000	26.860	61.546	96.008	211.318	179.071	161.127	Cont	Cont

**(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 will consist of two separate phases. During the first phase, the System Development and Demonstration (SD&D) phase up to two contracts will be awarded to procure prototypes for developmental testing. The winner of the SD&D phase will be awarded a production contract to produce Low Rate Initial Production (LRIP) vehicles for operational testing. The other two LVSR variants, the 5th Wheel and Wrecker variants will be designed, built and tested under the LVSR cargo production contract.

**(U) D. ACQUISITION STRATEGY:** The Flatrack Refueling Capability (FRC) program will consist of two separate phases. During the first phase, the System Development and Demonstration (SD&D) phase one contract will be awarded to procure prototypes for developmental testing. The winner of the SD&D phase will be awarded a production contract to produce LRIP vehicles for operational testing.

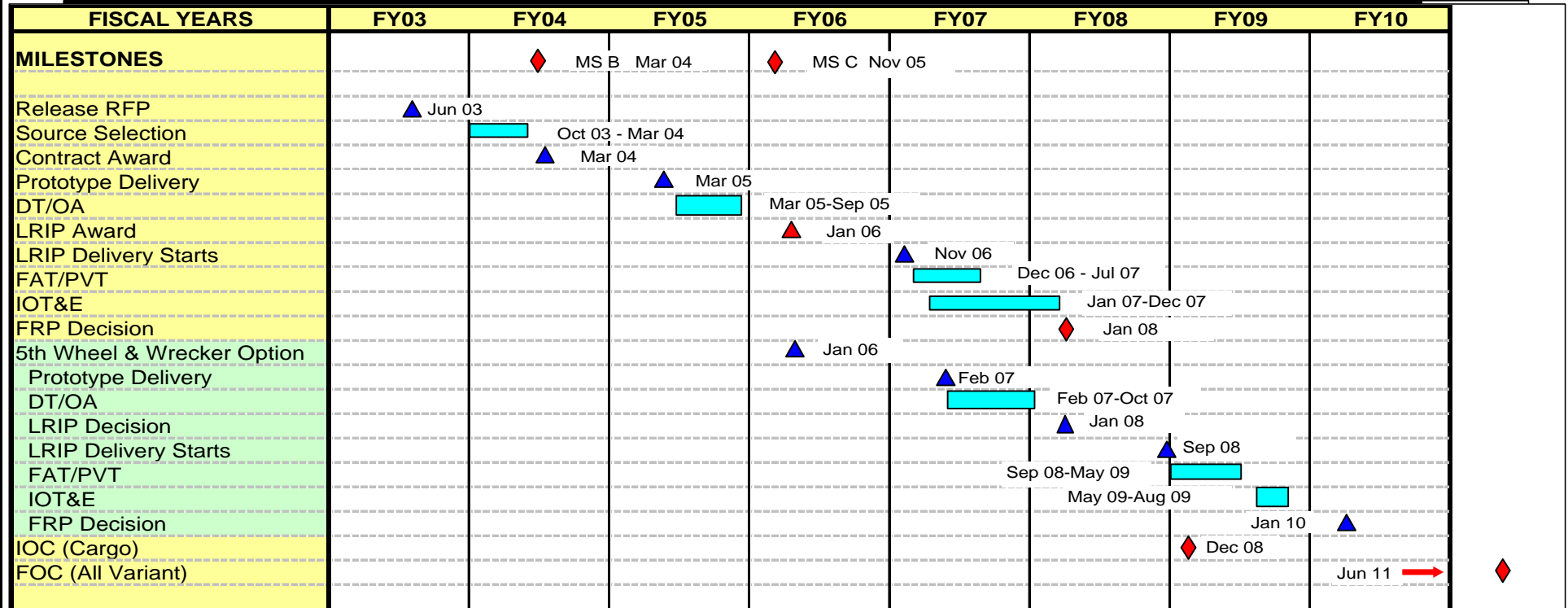
**(U) E. MAJOR PERFORMERS:**

Mar '04	American Truck Corp	3 Vehicle Prototypes
Mar '04	Oshkosh Truck Corp	3 Vehicle Prototypes

Exhibit R-3 Cost Analysis						DATE: February 2006						
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)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
FRC Prototypes	RCP	Oshkosh, Oshkosh, WI				1.378	05/06			0.000	1.378	
FRC Prototypes	MIPR	TACOM						0.718	02/07	0.000	0.718	
LVSr Variant Prototypes	RCP	MCSC Quantico, VA		4.490	02/05			3.500	02/07	0.000	7.990	
Subtotal Product Dev			<b>0.000</b>	<b>4.490</b>		<b>1.378</b>		<b>4.218</b>		<b>0.000</b>	<b>10.086</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
FRC Developmental T&E	TBD	FRC DT						0.239	12/06	0.000	0.239	
LVSr DT Variant	TBD	TBD						2.167	12/06	0.000	2.167	
Subtotal Support			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>2.406</b>		<b>0.000</b>	<b>2.406</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LVSr Operational T&E	MIPR	Aberdeen Test Center	0.000	2.727	03/05					0.000	2.727	
Corrosion Test	WR	NSWC Philadelphia	0.000	0.052	05/05					0.000	0.052	
Subtotal T&E			<b>0.000</b>	<b>2.779</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>2.779</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LVSr Contractor Suppt	RCP	Sverdrup, Dumfries, VA.	3.579	0.500	10/04			0.500	12/06	Cont	Cont	
LVSr Prgrm Mgmnt Spt	WR	MCSC Quantico, VA	0.130	0.555	10/04	0.046	10/05	0.090	12/06	Cont	Cont	
FRC Prgrm Mgmnt Spt	MIPR	TACOM, Warren, MI	0.000			0.022	10/05	0.438	12/06	Cont	Cont	
Subtotal Management			<b>3.709</b>	<b>1.055</b>		<b>0.068</b>		<b>1.028</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Total Cost			<b>3.709</b>	<b>8.324</b>		<b>1.446</b>		<b>7.652</b>		<b>Cont</b>	<b>Cont</b>	

APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT PROJECT NUMBER AND NAME  
 RDT&E, N /BA 7 Operational Sys D 0206624M Marine Corps Combat Services Spt C0201 Logistical Vehicle System Replacement (LVSR)

Logistical Vehicle System Replacement



Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(APPN, BLI #,									
(U) RDT&E,N (LVSR)	8.324	0.046	6.259	0.400	0.915	0.000	0.000	0.000	15.944
(U) PMC Line (BLI# 509300) LVSR	0.000	26.860	61.546	96.008	211.318	179.071	161.127	Cont	Cont

Exhibit R-4/4a Schedule Profile/Detail

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT PROJECT NUMBER AND NAME  
 RDT&E, N /BA 7 Operational Sys D 0206624M Marine Corps Combat Services Spt C0201 Logistical Vehicle System Replacement (LVSR)

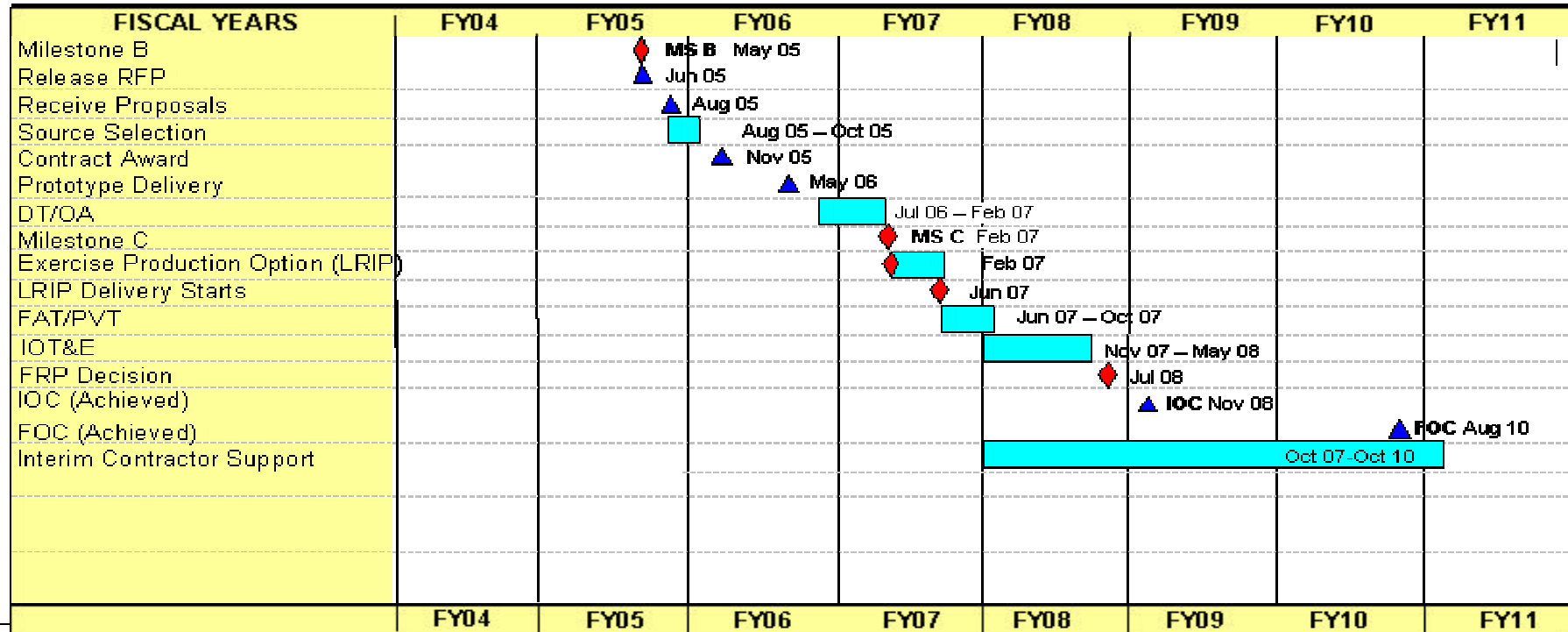
LVSR SCHEDULE DETAIL	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Release RFP	3Q								
Source Selection		1-2Q							
Contract Award		2Q							
Prototype Delivery			2Q						
DT/OA			2-4Q						
LRIP Delivery					1Q				
FAT					1-4Q				
IOT&E					2Q	1Q			
FRP Decision						2Q			
5th Wheel/Wrecker Option				2Q					
Prototype Delivery					2Q				
DT/OA					2Q	1Q			
LRIP Delivery						4Q			
FAT						4Q	3Q		
FRP Decision								2Q	
IOC							1Q		
FOC									3Q



APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT  
 RDT&E, N /BA 7 Operational Sys D 0206624M Marine Corps Combat Services Spt

PROJECT NUMBER AND NAME  
 C0201 Logistical Vehicle System Replacement (LVSr)

**Flatrack Refueling Capability FRC**



**Program Funding Summary**

(APPN, BLI #, NOMEN)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N (Flatrack)	0.000	1.400	1.393	0.709	0.000	0.000	0.000	0.000	3.502
(U) PMC Line (BLI# 509300) FlatRack	0.000	0.000	7.151	16.740	37.480	0.000	0.000	0.000	61.371

Exhibit R-4/4a Schedule Profile/Detail

DATE: February 2006

APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT PROJECT NUMBER AND NAME  
 RDT&E, N /BA 7 Operational Sys D 0206624M Marine Corps Combat Services Spt C0201 Logistical Vehicle System Replacement (LVSR)

FLATRACK SCHEDULE DETAIL	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B	3Q						
Release RFP	3Q						
Source Selection	4Q	1Q					
Contract Award		1Q					
Prototype Delivery		3Q					
DT/FUE		4Q	2Q				
Milestone C			2Q				
LRIP Delivery			3Q				
FAT			3Q	1Q			
FUE				2Q			
FRP Decision				4Q			
IOC Achieved					1Q		
FOC Achieved						4Q	
Interim contractor Support				1-4Q	1-4Q	1-4Q	1Q

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206624M Marine Corps Combat Services Spt</b>			PROJECT NUMBER AND NAME <b>C2316 Combat Services Support Engineering Equipment</b>				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>2.649</b>	<b>3.376</b>	<b>2.028</b>	<b>0.532</b>	<b>0.539</b>	<b>0.551</b>	<b>0.562</b>	
RDT&E Articles Qty								

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

**A.** This project includes improvements in all areas of Combat Service Support Engineering Equipment. The Assault Breacher Vehicle (ABV) will be a fully tracked, armored combat engineer vehicle capable of keeping pace with the maneuver force. It will breach minefields with Marine Corps integrated items to include a full width mine plow, two line charges, remote control kit, weapons station and lane marking system. The ABV is a survivable combat system which will enhance the combat breaching capabilities of the ground combat elements. The overall system is integrated on the ABRAMS tank chassis to provide commonality with the tank fleet while providing the latest technology in armor protection. It will provide capabilities to breach minefields and complex obstacles.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>2.170</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			

**ABV:** Conduct a limited user test and Operational Test & Evaluation.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.479</b>	<b>0.376</b>	<b>0.528</b>
RDT&E Articles Qty			

**MIA1 Armor Mods:** Continue joint participation and evaluation of prospective modifications including component enhancements, advanced fire control systems, survivability systems, Combat Identification, mobility and others.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.100</b>	<b>0.750</b>
RDT&E Articles Qty			

**Expeditionay Assault Bridge (EAB):** Begin system integration with M1A1 tank chassis, BR90 bridge launcher, and MLC70 assault bridge to build first article EAB demonstrator. EAB 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 EAB consists of a rebuilt and upgraded M1A1 Tank chassis with existing MLC70 scissors bridge and a modified BR90 launcher. The EAB 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.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.500</b>	<b>0.500</b>
RDT&E Articles Qty			

**EAB:** Program management and engineering support.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.400</b>	<b>0.250</b>
RDT&E Articles Qty			

**EAB:** Conduct developmental testing and evaluation.

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**EXHIBIT R-2a, RDT&E Project Justification**

**DATE: February 2006**

**APPROPRIATION/BUDGET ACTIVITY**

**RDT&E, N /BA-7 Operational Sys Dev**

(U) Total \$

**0206624M Marine Corps Combat Services Spt**

**PROJECT NUMBER AND NAME**

**C2316 Combat Services Support Engineering Equipment**

**2.649**

**3.376**

**2.028**

**UNCLASSIFIED**

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	<b>0206624M Marine Corps Combat Services Spt C2316 Combat Services Support Engineering Equipment</b>

**(U) PROJECT CHANGE SUMMARY:**

	<b>FY2005</b>	<b>FY2006</b>	<b>FY2007</b>
<b>(U) FY 2006 President's Budget:</b>	<b>1.964</b>	<b>3.428</b>	<b>0.518</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	0.704		1.500
(U) SBIR/STTR Transfer	-0.017		
(U) Minor Affordability Adjustments	-0.002	-0.052	0.010
<b>(U) FY 2007 President's Budget:</b>	<b>2.649</b>	<b>3.376</b>	<b>2.028</b>

CHANGE SUMMARY EXPLANATION:

- (U) Funding: See above.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC Line (BLI# 613300)- ABV	8.845	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.845
(U) PMC Line (BLI# 652000)EOD Sys- ABV	0.000	59.422	6.888	0.000	0.000	0.000	0.000	0.000	66.310
(U) PMC Line (BLI# 651800) Amphib SE- EAB	0.000	0.000	2.012	4.051	11.996	2.596	2.659	Cont	Cont
(U) PMC (BLI#206300) Mod Kits (M1A1 Mod Kits)	3.682	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.682
(U) PMC (BLI#206300) Mod Kits M1A1 Tank Blades (OIF)	1.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.500
(U) PMC (BLI#206300) Mod Kits Armored Veh Mod Kits	2.847	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.847
(U) PMC (BLI#206300) Mod Kits (M1A1 Tank Mods)	7.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.600
(U) PMC (BLI#206300) Mod Kits (M1A1 Safety Mods)	3.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.003
(U) PMC (BLI#206100) Mod Kits (M1A1 Mod Kits)	0.000	3.711	2.734	2.829	4.247	4.347	4.461	Cont	Cont
(U) PMC (BLI#206100) Recovery Veh, Ft, Heavy	0.000	5.565	0.000	0.000	0.000	0.000	0.000	0.000	5.565
(U) PMC (BLI#206100) Safety Mods (M1A1)	0.000	3.098	3.271	3.172	1.646	1.717	1.750	Cont	Cont
(U) PMC (BLI#209500) M1A1 FEP (M1A1)	35.957	31.678	19.085	25.966	0.000	0.000	0.000	0.000	112.686

**(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

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**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2006**

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) D. ACQUISITION STRATEGY:**

(U) The **M1A1 Tank MOD** and **Safety Mods** programs leverages Army developmental programs to create a system that more readily meets Marine Corps requirements. Modification includes safety, reliability, and technology up-grades to meet Marine Corps requirement. M1A1 Tank MOD will exercise options on existing contracts of varying types to conduct research and analysis associated with the development of modifications to the M1A1 Tank and supporting platforms. M1A1 Tank Firepower Enhancement - competitively awarded two Cost Plus Firm Fixed contracts to conduct parallel design, integration and demonstration of Non-Developmental Item (NDI) technology for the M1A1 Tank Firepower Enhancement. Down select to a single contractor with the most promising concept, continuing with design development until production ready. Finally, transition to production with the winning design by exercising a Firm Fixed Price contract option.

(U) **ABV: SYSTEM DEVELOPMENT & DEMONSTRATION PHASE:** Conduct modeling to support vehicle platform selection and trade studies for line charge integration. Modeling applications to support Analysis of Alternatives/Testing & Evaluation Alternatives (AOA/TEA). Establish Statement of Work (SOW) with Anniston Army Depot to build demonstrator vehicle and integrate full width mine plow, lane marking system, line charges, weapons systems & remote control system to the M1 Tank Chassis. Conduct plow tests with the demonstrator vehicle. Conduct developmental testing to include live mine testing and survivability/vulnerability analysis. Conduct trade study (examining capabilities and cost to down select). Select a systems integrator for the production of the LRIP and production vehicles.

(U) **Expeditionary Assault Bridge (EAB):** Begin system integration with M1A1 tank chassis, BR90 bridge launcher, and MLC70 assault bridge to build first article EAB demonstrator. EAB 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 EAB consists of a rebuilt and upgraded M1A1 Tank chassis with existing MLC70 scissors bridge and a modified BR90 launcher. The EAB 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) E. MAJOR PERFORMERS:**

FY04 - 02/03 ATC, Aberdeen, MD-Test activity for the ABV during Development Testing (DT)

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Exhibit R-3 Cost Analysis					DATE: February 2006								
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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Systems Engineering -ABV	Various	Various	7.777	0.000						0.000	7.777	8.501	
Systems Engineering -ABV	Various	Various	3.825	0.685	1Q/05					0.000	4.510	3.418	
Systems Engineering -ABV	WR	NSWC, Crane, IN	0.550	0.000						0.000	0.550	0.550	
Engineering/Design-ABV	MIPR	PM Unmanned Grd Vehicles	1.899	0.000						0.000	1.899	1.800	
Systems Engineering -EAB	WR	Various	0.000	0.000		2.100	1Q/06	0.750	1Q/07	0.000	2.850	2.100	
Prod Dev - M1A1 Firepower	RCP	Raytheon, McKinney, TX	3.670	0.000						0.000	3.670	3.670	
PROD DEV - M1A1 Mods	RCP	United Defense, Albany Ga	0.250	0.177	1Q/05					Cont	Cont		
PROD DEV - M1A1 Mods	RCP	Various	0.477	0.132	1Q/05	0.201	1Q/06	0.353	1Q/06		1.163		
<b>Subtotal Product Dev</b>			<b>18.448</b>	<b>0.994</b>		<b>2.301</b>		<b>1.103</b>		<b>Cont</b>	<b>Cont</b>		
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Program Support - ABV	RCP	BAE, Stafford, VA	1.979	0.000						0.000	1.979	2.280	
Program Support - ABV	RCP	MCSC, Quantico, VA	1.618	0.000						0.000	1.618	1.731	
Program Support - ABV	RCP	SVERDRUPP, Stafford, VA	0.200	0.000						0.000	0.200	0.200	
Program Support - ABV	WR	NAVFAC	0.980	0.000						0.000	0.980	0.940	
Program Support - EAB	RCP	BAE, Stafford, VA	0.000	0.000		0.500	1Q/06	0.500	1Q/07	0.000	1.000	0.500	
Program Supp-M1A1 Mods	WR	MCSC, Quantico, VA	0.180	0.170	1Q/05	0.175	1Q/06	0.175	1Q/06	Cont	Cont		
Program Supp-M1A1 FEP	MIPR	NWSC, Dahlgren, VA	0.013	0.000						0.000	0.013	0.013	
Program Supp-M1A1 FEP	MIPR	PEO STRICOM, Orlando, FL	0.076	0.000						0.000	0.076	0.076	
Program Supp-M1A1 FEP	MIPR	NVL, Belvoir, VA	0.228	0.000						0.000	0.228	0.228	
Program Supp-M1A1 FEP	MIPR	Tacom, ARDEC Warren, MI	0.085	0.000						0.000	0.085	0.085	
<b>Subtotal Support</b>			<b>5.359</b>	<b>0.170</b>		<b>0.675</b>		<b>0.675</b>		<b>Cont</b>	<b>Cont</b>		
Remarks:													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
DT&E - ABV	MIPR	WES, Vicksburg, MS	1.644	0.000						0.000	1.644	1.644	
DT&E - ABV	MIPR	APG,MD	1.901	0.000						Cont	Cont		
DT&E - ABV	WR	NSWC, Crane, IN	1.160	0.000						0.000	1.160	1.160	
DT&E - ABV	MIPR	APG, MD	1.252	0.589	1Q/05					Cont	Cont		
IOT&E - ABV	WR	MCOTEA	0.900	0.896	1Q/05					0.000	1.796	1.800	
Engineering/Design-ABV	MIPR	PM Unmanned Grd Vehicles	0.300	0.000						0.000	0.300	0.300	
EAB	MIPR	Aberdeen Prvg Grnd, MD	0.000	0.000		0.400	1Q/06	0.250	1Q/07	0.000	0.650	0.400	
M1A1 Firepower	RCP	TBD	1.152	0.000						0.000	1.152	1.492	
M1A1 Firepower	MIPR	APG, MD	0.169	0.000						0.000	0.169	0.169	
M1A1Firepower	MIPR	YUMA, AZ	0.128	0.000						0.000	0.128	0.128	
<b>Subtotal T&amp;E</b>			<b>8.606</b>	<b>1.485</b>		<b>0.400</b>		<b>0.250</b>		<b>Cont</b>	<b>Cont</b>		
Remarks: Assault Breacher Vehicle (ABV) Expeditionary Assault Bridge (EAB)													
<b>Total Cost</b>			<b>32.413</b>	<b>2.649</b>		<b>3.376</b>		<b>2.028</b>		<b>Cont</b>	<b>Cont</b>		

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Exhibit R-4/4a Schedule Profile Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACT|PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N /BA 7 Operational Sys|0206624M Marine Corps Combat Services Spt

C2316 Combat Services Support Engineering Equip

**ASSAULT BREACHER VEHICLE**

Fiscal Year Quarter	FY02				FY03				FY04				FY05				FY06				FY07				FY08			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Concept Demonstration DT I	█																											
Milestone B								▲																				
Build 3 PRPs								█	█	█	█																	
LUE / DT II									█	█	█	█																
MS-C																▲												
FUT&E																█												
OA																█												
Refurb ABV 2,3,4																█	█											
ABV-5																█	█											
DT - ATC/EMI/RS JPO																				█								
IOT&E																								█				
FRP																											△	
Fielding Decision																											△	
IOC																											△	
FOC																												△

**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E,N ABV (C2316)

(U) PMC, BLI# 613300 ABV

(U) PMC, BLI# 652000 EOD Sys ABV

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N ABV (C2316)	2.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.170
(U) PMC, BLI# 613300 ABV	8.845	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.845
(U) PMC, BLI# 652000 EOD Sys ABV	0.000	59.422	6.888	0.000	0.000	0.000	0.000	0.000	66.310



**UNCLASSIFIED**

<b>Exhibit R-4/4a Schedule Profile Detail</b>	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACT PROGRAM ELEMENT <b>RDT&amp;E, N /BA 7 Operational Sys</b>	PROJECT NUMBER AND NAME <b>0206624M Marine Corps Combat Services Spt C2316 Combat Services Support Engineering Equip</b>
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<b>ABV SCHEDULE DETAIL</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
System Development	1st Qtr							
System Testing/DT		1st Qtr						
Milestone B		4th Qtr						
Build 3 PRP		4th Qtr						
DT/Field User Evaluation			3rd Qtr					
MS C				3d Qtr				
IOT&E					4th Qtr			
Full Rate Production Decision						1st Qtr		
IOC						3d Qtr		
FOC							3d Qtr	

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<b>Exhibit R-4/4a Schedule Profile Detail</b>		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACT/PROGRAM ELEMENT <b>RDT&amp;E, N /BA 7 Operational Sys</b>	PROGRAM ELEMENT <b>0206624M Marine Corps Combat Services Spt</b>	PROJECT NUMBER AND NAME <b>C2316 Combat Services Support Engineering Equip</b>

**M1A1 FIREPOWER ENHANCEMENT PROGRAM (FEP)**

FY	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MILESTONES & PHASES	CE MSO	CIDP (PDRR) MSI		FIPP (SDD) MSII/B			P&D,O&S MS III/C		IOC		FOC
CONTRACT AWARD OR EVENT		CIDP RFP	CIDP AWD	CFI	FIPP AWD	CHANGE WORK ORDER	FRP AWD				
# OF CONTRACTOR		KTR #1		KTR #2							
DESIGN REVIEWS		SFR	CDR		Delta CDR						
DT/OT			Govt/Cntr DT/OT				OT&E				
DELIVERIES		PROTOTYPE				EDMs		PRODUCTION DELIVERABLES			

<u>Program Funding Summary</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Compl</u>	<u>Total Cost</u>
(APPN, BLI #, NOMEN)									
(U) PMC BLI# 209500 M1A1 FEP	35.957	31.678	19.085	25.996	0.000	0.000	0.000	0.000	112.716



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**Exhibit R-4/4a Schedule Profile Detail**

DATE:

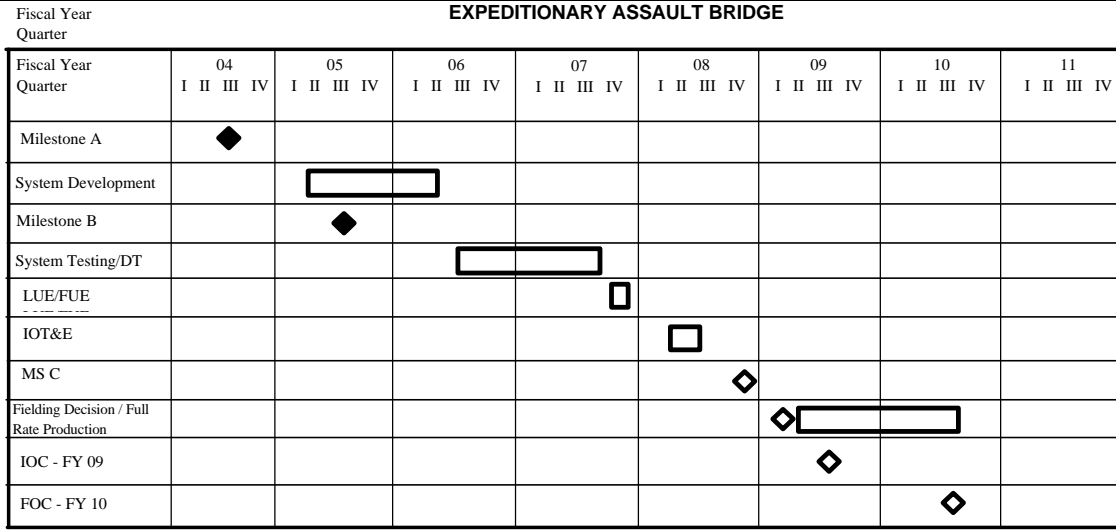
February 2006

APPROPRIATION/BUDGET ACT|PROGRAM ELEMENT

PROJECT NUMBER AND NAME

**RDT&E, N /BA 7 Operational Sys0206624M Marine Corps Combat Services Spt**

**C2316 Combat Services Support Engineering Equip**



**Program Funding Summary**

(APPN, BLI #, NOMEN)

(U) RDT&E,N EAB

(U) PMC BLI#651800 Amph Supt Eq EAB

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U) RDT&E,N EAB	0.000	3.000	1.500	0.000	0.000	0.000	0.000	0.000	4.500
(U) PMC BLI#651800 Amph Supt Eq EAB	0.000	0.000	2.012	4.051	11.996	2.596	2.659	Cont	Cont

<b>EAB SCHEDULE DETAIL</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone A		3rd Qtr						
System Development		2nd Qtr						
Milestone B		3rd Qtr						
System Testing/DT			3rd Qtr					
Limited User Evaluation/Field User Evaluation				4th Qtr				
IOT&E					2nd Qtr			
Milestone C					4th Qtr			
Fielding Decision/Full Rate Production						1st Qtr		
IOC						3rd Qtr		
FOC							2nd Qtr	

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2006																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																	
RDT&E, N/BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Spt			C2929 Testing Measuring Diagnostic Equip (TMDE) & SE																	
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011														
RDT&E Articles Qty	1.274	4.267	7.284	10.878	1.950	1.508	1.549														
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>																					
<p>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.</p> <p>The Marine Corps Family of Automatic Test Systems (ATS) (formerly called 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.</p> <p>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 Logisitics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness. FY-06 effort will focus on developing system, operational, and technical architectures for condition based maintenance for Marine Corps Ground Weapon Systems. FY-07 efforts will develop Low Rate Initial Production (LRIP) system health hardware and software for Marine Corps weapon systems.</p>																					
<b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM</b>																					
<p>During FY-06 the AL program will conduct R&amp;D efforts to explore collection &amp; processing of system health data from weapon systems sensor and digital data buss structures for system health information. Work will include diagnostic and prognostic algorithm development. FY-07 R&amp;D efforts will focus on system health application for legacy weapon systems that are not supported with Digital sensors or data buss structures. Conduct developmental test and evaluation of platform level system health hardware and software.</p>																					
<b>APSCE: Research, evaluation, test and selection of alternative power source products for the APSCE suite of equipment.</b>																					
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.376</td> <td align="right">0.130</td> <td align="right">0.137</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	Accomplishment/Effort Subtotal Cost	0.376	0.130	0.137	RDT&E Articles Qty			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007																		
Accomplishment/Effort Subtotal Cost	0.376	0.130	0.137																		
RDT&E Articles Qty																					
<b>APSCE: Program Management Support.</b>																					
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.025</td> <td align="right">0.000</td> <td align="right">0.000</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	Accomplishment/Effort Subtotal Cost	0.025	0.000	0.000	RDT&E Articles Qty			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007																		
Accomplishment/Effort Subtotal Cost	0.025	0.000	0.000																		
RDT&E Articles Qty																					
<b>ATS: Development of new technology testing applications in support of emerging weapon systems.</b>																					
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.444</td> <td align="right">0.888</td> <td align="right">0.522</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	Accomplishment/Effort Subtotal Cost	0.444	0.888	0.522	RDT&E Articles Qty			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007																		
Accomplishment/Effort Subtotal Cost	0.444	0.888	0.522																		
RDT&E Articles Qty																					
<b>MCATE: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.</b>																					
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.000</td> <td align="right">2.745</td> <td align="right">6.055</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	Accomplishment/Effort Subtotal Cost	0.000	2.745	6.055	RDT&E Articles Qty			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007																		
Accomplishment/Effort Subtotal Cost	0.000	2.745	6.055																		
RDT&E Articles Qty																					
<b>ALS: Weapon sensor data collection &amp; processing for information conversion to provide situational awareness.</b>																					
(U) Total \$	1.274	4.267	7.284																		

**UNCLASSIFIED**

**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206624M Marine Corps Combat Services Spt</b>	PROJECT NUMBER AND NAME <b>C2929 Testing Measuring Diagnostic Equip (TMDE) &amp; SE</b>
--	---	--

	FY2005	FY2006	FY2007
<b>(U) FY 2006 President's Budget:</b>	<b>1.066</b>	<b>4.332</b>	<b>7.249</b>
(U) Adjustments from the President's Budget:			
(U) Congressional/OSD Program Reductions			
(U) Congressional Rescissions			
(U) Congressional Increases			
(U) Reprogrammings	0.229		
(U) SBIR/STTR Transfer	-0.020		
(U) Minor Affordability Adjustment	-0.001	-0.065	0.035
<b>(U) FY 2007 President's Budget:</b>	<b>1.274</b>	<b>4.267</b>	<b>7.284</b>
CHANGE SUMMARY EXPLANATION:			
(U) Funding: See above.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
(U)PMC Line(BLI# 636600)Power Equip APSCE	3.300	3.092	2.723	0.000	0.000	0.000	0.000	0.000	9.115
(U) PMC Line (BLI# 440200) TETS ***	9.261	9.838	2.267	10.288	15.854	0.000	0.000	Cont	Cont
(U) PMC Line (BLI# 418100) Autonomic Logistics	0.000	0.000	1.000	6.472	3.448	3.362	3.030	Cont	Cont
(U) PMC Line (BLI# 446000) WSSS ***	2.386	1.741	0.006	0.026	0.354	0.514	0.516	Cont	Cont

\*\*\* FY06 and beyond, PMC Line (BLI# 418100) Repair & Test Equip

**(U) Related RDT&E:**

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

Competitive through the GSA Schedule. All other work is being done in-house at Marine Corps Logistics Base (MCLB), Albany, Naval Surface Warfare Center (NSWC), and Seal Beach, CA., Naval Surface Warfare Center (NSWC) Carderock, ATC, Aberdeen, Silver Eagle, Portland OR

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. All other performers to be determined at this time.

Exhibit R-3 Cost Analysis							DATE: February 2006					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Svs Spt			C2929 Testing Measuring Diagnostic Equip (TMDE) & SE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Study	RCP	MKI, Va	0.240			0.375	12/05	0.255	02/07	0.000	0.870	0.87
Study	RCP	TBD	0.318			1.515	02/06	0.535	02/07	0.000	2.368	2.398
Study & Hardware	RCP	NSWC; Corona, CA	0.500	0.611	03/05					0.000	1.111	1.187
Hardware	RCP	Willitis Electronic Assembly	0.019			0.092	12/05			0.000	0.111	0.111
Hardware	RCP	MCSC, Quantico VA	0.088	0.021	07/05	0.320	12/05	4.250	12/07	0.000	4.679	4.860
Software Support	WR	ATEP, Ga	0.525	0.252	12/04	0.500	12/05	0.354	12/07	0.000	1.631	1.631
Hardware & Study	WR	NSWC, Ca	0.293					0.775	12/07	Cont	Cont	
<b>Subtotal Product Dev</b>			<b>1.983</b>	<b>0.884</b>		<b>2.802</b>		<b>6.169</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Travel	DTS	MCSC, Quantico VA	0.129	0.010		0.111		0.111		Cont	Cont	
Travel	DTS	MCSC, Quantico VA		0.025		0.015		0.035		Cont	Cont	
<b>Subtotal Support</b>			<b>0.129</b>	<b>0.035</b>		<b>0.126</b>		<b>0.146</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
EVAL TESTING	WR	Albany, GA	0.213			0.163	02/06			0.000	0.376	0.376
EVAL TESTING	WR	NSWC, Crane, IN		0.040	11/04					0.000	0.040	
EVAL TESTING	WR	NSWC, Carderock, MD		0.051	02/05	0.050	02/06	0.050	02/07	0.000	0.151	
EVAL TESTING	WR	ATC, MD		0.264	07/05					0.000	0.264	
<b>Subtotal T&amp;E</b>			<b>0.213</b>	<b>0.355</b>		<b>0.213</b>		<b>0.050</b>		<b>0.000</b>	<b>0.831</b>	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support	FFP	MCSC, Quantico	0.400			1.126	12/05	0.919	12/06		2.445	2.445
<b>Subtotal Management</b>			<b>0.400</b>	<b>0.000</b>		<b>1.126</b>		<b>0.919</b>		<b>Cont</b>	<b>Cont</b>	
Remarks:												
<b>Total Cost</b>			<b>2.725</b>	<b>1.274</b>		<b>4.267</b>		<b>7.284</b>		<b>Cont</b>	<b>Cont</b>	

**UNCLASSIFIED**

**EXHIBIT R-2a, RDT&E Project Justification**

DATE:

**February 2006**

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-7 Operational Sys Dev</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0206624M Marine Corps Combat Services Spt</b>	PROJECT NUMBER AND NAME <b>C9999 FY06 Congressional Adds</b>					
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	<b>0.0</b>	<b>6.000</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
RDT&E Articles Qty							

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

The Autonomic Logisitics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness. FY-06 effort will focus on developing system, operational, and technical architectures for condition based maintenance for Marine Corps Ground Weapon Systems. FY-07 efforts will develop Low Rate Initial Production (LRIP) system health hardware and software for Marine Corps weapon systems. Congressional Add will support the development of portable maintenance aids in support of AL.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM**

During FY-06 the AL program will conduct 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 will include diagnostic and prognostic algorithm development. FY-07 R&D efforts will focus on system health application for legacy weapon systems that are not supported with Digital sensors or data buss structures. Conduct developmental test and evaluation of platform level system health hardware and software.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>2.500</b>	<b>0.000</b>
RDT&E Articles Qty			

**Autonomic Logistics 9872N:** Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>3.500</b>	<b>0.000</b>
RDT&E Articles Qty			

**Battlefield Management Sys (BMS) 9645C:**

(U) Total \$	<b>0.000</b>	<b>6.000</b>	<b>0.000</b>
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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /					BA 7		R-1 ITEM NOMENCLATURE 0207161N, TACTICAL AIM MISSILES
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	3.927	9.243	7.946	2.463	1.189	1.214	1.238
0457 AIM-9X	3.927	9.243	7.946	2.463	1.189	1.214	1.238

(U) 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 (fuse, rocket motor and warhead). Improved Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006																															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		PROGRAM ELEMENT NUMBER AND NAME BA 7 0207161N, TACTICAL AIM MISSILES				PROJECT NUMBER AND NAME 0457, AIM-9X																																
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011																														
E0457 AIM-9X		3.927	9.243	7.946	2.463	1.189	1.214	1.238																														
RDT&E Articles Qty																																						
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>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 (fuse, rocket motor and warhead). Improved Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design.</p> <p>B. ACCOMPLISHMENTS / PLANNED PROGRAM:</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td></td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> <td></td> </tr> <tr> <td>Sub-total Cost</td> <td>.370</td> <td>1.230</td> <td>2.310</td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Test and Evaluation:</p> <p>Continue providing Government Flight Test &amp; Evaluation Support</p> </div> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td></td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> <td></td> </tr> <tr> <td>Sub-total Cost</td> <td>2.757</td> <td>5.713</td> <td>5.336</td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Primary Hardware Development/Pre-Planned Product Improvement (P31):</p> <p>Fuze/Systems Engineering/Program Management</p> <p>Continuation of (P31) efforts for AIM-9X fuze.</p> </div> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td></td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> <td></td> </tr> <tr> <td>Sub-total Cost</td> <td>.800</td> <td>2.300</td> <td>.300</td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Navy Fuze:</p> <p>AIM-9X fuze</p> <p>Operational Flight Software (OFS) Mods.</p> </div>										FY 2005	FY 2006	FY 2007		Sub-total Cost	.370	1.230	2.310			FY 2005	FY 2006	FY 2007		Sub-total Cost	2.757	5.713	5.336			FY 2005	FY 2006	FY 2007		Sub-total Cost	.800	2.300	.300	
	FY 2005	FY 2006	FY 2007																																			
Sub-total Cost	.370	1.230	2.310																																			
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	FY 2005	FY 2006	FY 2007																																			
Sub-total Cost	.800	2.300	.300																																			

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY	BA 7	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / Operational Flight Software (OFS) mods.		0207161N, TACTICAL AIM MISSILES				0457, AIM-9X			
<b>C. PROGRAM CHANGE SUMMARY</b>									
Funding:									
Previous President's Budget:	FY 2005	FY 2006							
	4.024	9.384	FY 2007						
Current BES / President's Budget:	3.927	9.243	7.930						
Total Adjustments	-0.097	-0.141	0.016						
Summary of Adjustments									
Congressional Und Red/Cong Inc	-0.066	-0.098	0						
Miscellaneous Adjustments	-0.031	0	-0.024						
Economic Assumptions	0	-0.043	0.040						
	-0.097	-0.141	0.016						
Schedule: Not Applicable									
Technical: Not Applicable									
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
220900 AIM-9X Missile	31.232	37.128	40.380	39.885	39.846	38.146	41.459	949.800	1,319.300
AIM-9X Spares (Initial Spares)	1.828	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.331
AIM-9X Mods/Missile (Air Force)	52.352	44.368	43.834	44.884	73.540	79.532	62.570	805.038	1,369.843
									0.000
RELATED AIR FORCE RDT&E:									0.000
Program Element: 0207161F	5.346	15.416	8.850	7.897	5.805	6.044	6.256	0.000	243.425
<b>E. ACQUISITION STRATEGY:</b>									
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 will be FFP with FRP 2 LOT 6 awarded 12/05 and FRP 3 LOT 7 planned for 11/06. Rewards or penalties are provided depending on Raytheon Systems Corporation (RSC) Performance relative to the Procurement Price Commitment Curve (PPCC).									

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0207161N, TACTICAL AIM-9X MISSILES				0457, AIM-9X						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development (DEM-VAL)	C/CPIF	Hughes, Tucson, AZ	6.685								6.685	6.685
Primary Hdw Development (DEM-VAL)	C/CPIF	Raytheon, Bedford, MA	8.587								8.587	8.587
EMD Award Fee	C-CPIF/AF	RAYTHEON COMPANY, TUCSON, AZ	14.145								14.145	14.145
Navy Fuze	C-CPIF/AF	RAYTHEON COMPANY, TUCSON, AZ		.800	11/1/2004	2.300	11/1/2005	.300	11/1/2006	.600	4.000	4.000
Aircraft Integration	C/CPFF	Boeing, St. Louis, MO	24.397								24.397	24.397
Primary Hdw Development (Hughes)	C-CPIF/AF	RAYTHEON COMPANY, TUCSON, AZ	120.434								120.434	120.434
Primary Hdw Development (FUZE P3I)	SS-CPFF	RAYTHEON COMPANY, TUCSON, AZ	1.278	2.229	11/1/2004	5.163	11/1/2005	4.786	11/1/2006	.881	14.337	14.462
Misc HW/SW (efforts<\$1.0M)	Various	Various	7.765								7.765	
Systems Eng (AD)	WX	NAWCAD	3.826								3.826	
Ancillary HWD (LAU-7 Launcher)	C/CPFF	Boeing, St. Louis, MO	4.552								4.552	4.552
Engineering Services	MIPR	Eglin, AF, FL	1.810								1.810	
Systems Eng (WD)	WX	NAWCWD, CHINA LAKE CA	33.786	.378	11/1/2004	.400	11/1/2005	.400	11/1/2006	.200	35.164	
SUBTOTAL PRODUCT DEVELOPMENT			227.265	3.407		7.863		5.486		1.681	245.702	
Remarks: Prior year award fees earned is 93% EMD Contract Target Value includes both Navy and Air Force Funding. All other fields represent Navy share only. Total Prior Years - FY 95 and prior under P.E. 0603715D. FY 96 and out are funded under P.E 0207161N.												
TEST & EVALUATION												
Dev Test & Eval (WD)	WX	NAWCWD, CHINA LAKE CA	26.313	.300	11/1/2004	.930	11/1/2005	1.900	11/1/2006	2.495	31.938	
Navy Test & Eval	WX	NAWCAD	4.683			.050	11/1/2005	.050	11/1/2006	.200	4.983	
Navy Test & Eval - (Cont Dev Test Ray)	SS-CPFF	RAYTHEON COMPANY, TUCSON, AZ		.070	11/1/2004	.100	11/1/2005	.110	11/1/2006	.285	.565	.565
Oper Test & Eval (OPTEVFOR)	WX	OPER T & E FOR CD 30, NORFOLK VA	2.331			.150	11/1/2005	.250	11/1/2006	.600	3.331	
SUBTOTAL TEST & EVALUATION			33.327	.370		1.230		2.310		3.580	40.817	
Remarks:												
MANAGEMENT												
Contractor Engineering Support	ID/IQ, T&M	Endmark, Arlington, VA	3.670								3.670	3.670
Contractor Engineering Support	ID/IQ, T&M	Various	1.430							.300	1.730	1.730
Government Engineering Support	ID/IQ, T&M	MSTTm, Arlington, VA	.986								.986	.986
Program Management Support	ID/IQ, T&M	NSM, Arlington, VA	1.440								1.440	1.440
Transportation - Material	MD	NAVAIR, PAXTUXENT RIVER MD		.015	10/1/2004	.015	10/1/2005	.015	10/1/2006	.060	.105	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	1.343	.135	10/1/2004	.135	10/1/2005	.135	10/1/2006	.540	2.288	
SUBTOTAL MANAGEMENT			8.869	.150		.150		.150		.900	10.219	
Remarks:												
TOTAL COST			269.461	3.927		9.243		7.946		6.161	296.738	

CLASSIFICATION:																																				
EXHIBIT R4, Schedule Profile																									DATE:											
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	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>	IOC	▲	▲	MS III																																
EMD Completion	▲																																			
AOTD P3I	[Bar chart showing AOTD P3I from Q1 2004 to Q4 2009]																																			
<b>Test &amp; Evaluation Milestones</b>																																				
Developmental Test	[Bar DT-III A]				[Bar DT-III B]				[Bar DT-III C]				[Bar DT-III D]																							
Operational Test									[Bar OT-III A/B]								[Bar OT-III C]								[Bar OT-III D]											
<b>Production Milestones</b>																																				
LRIP IV, LOT IV Award FY04		▲				▲				▲				△				△				△				△				△						
FRP 1, LOT V Award FY05																																				
FRP 2, LOT VI Award FY06																																				
FRP 3, LOT VII Award FY07																																				
FRP 4, LOT VIII Award FY08																																				
FRP 5, LOT IX Award FY09																																				
FRP 6, LOT X Award FY10																																				
FRP 7, LOT XI Award FY11																																				
<b>Deliveries</b>																																				
LRIP III, LOT III					[Bar]																															
LRIP IV, LOT IV									[Bar]																											
FRP 1, LOT V													[Bar]																							
FRP 2, LOT VI																	[Bar]																			
FRP 3, LOT VII																					[Bar]															
FRP 4, LOT VIII																									[Bar]											
FRP 5, LOT IX																													[Bar]							
FRP 6, LOT X																																	[Bar]			

R-1 SHOPPING LIST - Item No. 189



CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>				R-1 ITEM NOMENCLATURE 0207163N AMRAAM			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	8.546	3.531	6.705	2.620	3.508	3.144	3.148
0981 AMRAAM	8.546	3.531	6.705	2.620	3.508	3.144	3.148
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>            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, pre-planned product improvement (P3I) efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.</p>							

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM			PROJECT NUMBER AND NAME 0981 AMRAAM		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>8.546</b>	<b>3.531</b>	<b>6.705</b>	<b>2.620</b>	<b>3.508</b>	<b>3.144</b>	<b>3.148</b>
RDT&E Articles Qty							
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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, pre-planned product improvement (P3I) efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.</p>							

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM	PROJECT NUMBER AND NAME 0981 AMRAAM

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

	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	5.034	1.449	1.467
RDT&E Articles Quantity			

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.

	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	3.512	0.919	0.815
RDT&E Articles Quantity			

Continued engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.

	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost		1.163	4.423
RDT&E Articles Quantity			

Continue aircraft integration activities and test and evaluation for Navy unique requirements.

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N / BA-7</b>	0207163N AMRAAM	0981 AMRAAM		
<b>C. PROGRAM CHANGE SUMMARY:</b>				
Funding:		FY 05	FY 06	FY 07
Previous President's Budget:		9.001	3.584	6.726
Current President's Budget:		8.546	3.531	6.705
Total Adjustments		-0.455	-0.053	-0.021
Summary of Adjustments				
Congressional reductions			-0.037	
Congressional undistributed reductions		-0.171		
Congressional rescissions				
Economic Assumptions			-0.016	0.034
Congressional increases				
Miscellaneous		-0.284		-0.055
Subtotal		-0.455	-0.053	-0.021
Schedule:				
<p>The (Phase 3) AIM120C-7 F/A-18 E/F IOC date moved to account for move of start/completion of independent operational testing by COMOPTEVFOR/AFOTEC due to problems in securing OSD/DOT&amp;E approval of Test &amp; Evaluation Master Plan OT sections and test hardware. Additional adjustments in the OT schedule are due to testing of software improvements as part of the AIM120C-7 SWUP. OT&amp;E completion is a requirement for IOC recommendation by COMOPTEVFOR/N780.</p> <p>The Phase 3 SWUP Completion date is now planned for May 2006 consistent with the above current OT schedule. Phase 3 SWUP IOC added for completeness.</p> <p>Phase 4 SDD program issues identified in late December 2005 will result in a re-baseline to the existing Phase 4 SDD/DT/OT schedule/completion. Re-baselined schedules will be available/approved in April 2006.</p>				
Technical:				
Not applicable.				

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM			PROJECT NUMBER AND NAME 0981 AMRAAM				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
WPN/P1#5	28.781	73.724	98.651	85.875	84.630	86.465	88.617	1,406.775	3,171.723
Quantity	37	85	150	140	150	150	150	1,889	4,461
<u>Related RDT&amp;E</u>									
PE 0207130F F-15									
PE 0204126N F/A-18 Squadrons									
PE 0207163F AMRAAM P3I									
PE 0207133F F-16									
PE 0604239F F-22									
PE 0207134F F-15E									
<b>(U) E. ACQUISITION STRATEGY:</b>									
<p>With the December 1997 merger of Raytheon and Hughes into the Raytheon Systems Company, the government implemented a new acquisition strategy labeled AMRAAM Vision 2000. The Vision 2000 strategy capitalizes on a Long Term Pricing Agreement (LTPA) agreement between Raytheon and the government under the auspices of the Department of Justice which supported the Raytheon/Hughes merger and a shift in government business practices toward a more "commercial" business arrangement. The lot 16 procurement contract award again includes an overarching price control strategy with Total System Performance Responsibility (TSPR) with the prime contractor, Raytheon Defense Systems Segment in Tucson, Arizona. The purchase includes missiles, warranties, spares, missile performance tracking, and reliability tests. Raytheon assumes responsibility for all specifications below missile performance.</p>									

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0207163N AMRAAM			0981 AMRAAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPAF	Raytheon, Tucson AZ	35.373	3.902	01/05	1.103	01/06	0.496	01/07	2.586	43.459	43.459
Primary Hardware Development	WX	NAWC-AD Patuxent River MD		0.271	11/04	0.151	11/05	0.183	11/06	0.744	1.349	
Primary Hardware Development	WX	NAWC-WD Pt Mugu CA		0.151	11/04			0.700	11/06		0.851	
Primary Hardware Development	WX	NSWC Dahlgren VA		0.021	11/04						0.021	
Award Fees	SS/CPAF	Raytheon, Tucson AZ	4.740	0.689	01/05	0.195	01/06	0.088	01/07	0.456	6.169	6.169
Prior Years Development/Acft Integ	Various	Various	19.874								19.874	
Subtotal Product Development			59.987	5.034		1.449		1.467		3.786	71.723	
Remarks: Percentage of award fees actually awarded in past award fee periods is 15%.												
Development Support	SS/FFP	JHU/APL Laurel MD		0.210	01/05	0.200	01/06	0.150	01/07	0.780	1.340	1.340
Development Support	RX	NSMA VA		0.536	12/04	0.350	12/05	0.250	12/06	0.950	2.086	
Development Support	WX	NAWC-WD Pt Mugu CA	11.366								11.366	
Development Support	WX	NAWC-WD China Lake CA		2.158	10/04						2.158	
Subtotal Support			11.366	2.904		0.550		0.400		1.730	16.950	
Remarks:												

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0207163N AMRAAM			0981 AMRAAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD Pt Mugu CA	1.306			1.163	11/05	4.423	11/06	5.405	12.297	
Subtotal T&E			1.306			1.163		4.423		5.405	12.297	
Remarks:												
Program Management Support	WX	NAWC AD Pax River MD	3.544	0.013	10/04	0.010	10/05	0.010	10/06	0.025	3.602	
Travel	MIPR	PMA-259 Eglin AFB FL	1.409	0.150	10/04	0.159	10/05	0.200	10/06	0.800	2.718	
Program Management Support	C/CPFF	TITAN Corp Marlton, NJ		0.445	10/04	0.200	10/05	0.205	10/06	0.674	1.524	
Subtotal Management			4.953	0.608		0.369		0.415		1.499	7.844	
Remarks:												
Total Cost			77.612	8.546		3.531		6.705		12.420	108.814	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																			DATE: <b>February 2006</b>									
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-7</b>					0207163N AMRAAM										0981 AMRAAM													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Pre-Planned Product Improvement (P3) Phase 3</b>																												
IOC C7 Phase 3 SWUP CLAWS (AIM120C-5) Development Complete F/A18 & F/A22 IOC																												
<b>Pre-Planned Product Improvement (P3) Phase 4</b>																												
SDD SYSTEM DT/OT Start IOC Phase 4 SIP/SWUP Captive DT Free Flight DT OT Start (E/F) Complete OT Complete (E/F) F/A18 E/F (Obj) F/A18 E/F (Threshold) F/A18 C/D SIP (P3I Follow-on)																												
<b>Production Milestones</b>																												
Contract awards Lot 19 Lot 20 Lot 21 Lot 22 Lot 23 Lot 24 Lot 25																												
Deliveries																												
	2	8	14	16	11	4	18	28	30	30	25	24	0	33	52	0	36	36	39	39	33	35	36	36	36	36	39	36

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**CLASSIFICATION: UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification			FY 2007 PRESIDENT'S BUDGET SUBMISSION				DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7			R-1 ITEM NOMENCLATURE PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	0.000	0.000	14.160	18.935	11.894	8.601	3.805	
3131 Intratheater Connectors (Concept Studies)	0.000	0.000	11.903	5.045	3.922	1.750	2.447	
3134 Intratheater Connectors (Contract Design)	0.000	0.000	2.257	13.890	7.972	6.851	1.358	

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The Joint High Speed Vessel (JHSV) program is a result of a signed Department of Army (DoA) and Department of Navy (DoN) Memorandum of Intent (MOI) which resulted in the merging of the Army's Theater Support Vessel (TSV) program and the Navy/Marine Corps High Speed intratheater surface connector (HSC) program into a joint (multi-service) High Speed Vessel program. The JHSV program combined the two separate programs to take advantage of inherent commonality of hull forms to create a more flexible asset for the Department of Defense and leverage the Navy's core competency in ship acquisition. The JHSV program will provide high speed intratheater surface connector capability to rapidly deploy selected portions of the Joint Force that can immediately transition to execution, even in the absence of developed infrastructure, and conduct deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. The primary missions include: support to Theater Security Cooperation Program (TSCP) and Global War on Terrorism (GWOT), littoral maneuver and seabasing support. DoA and DoN will maintain separate and distinct funding streams to support the joint program, and while they will both focus on the development of common capabilities, each Department will source their unique developmental costs for unique service capabilities that cannot be incorporated into a combined solution set.

**B. PROJECT UNIT EFFORTS are as follows:**

(1) **(3131) Intratheater Connectors** - Intratheater connectors, capable of self-deploying to the theater of operations, provide the air and surface means to move forces and supplies over operational distances within a theater. Intratheater connectors provide the JFC a mobility asset that enables rapid force closure to the seabase from advanced bases, movement of logistics, ship-to-ship and ship-to-shore replenishment, and in appropriate threat environments, the maneuver of forces to the shore. This effort supports Concept Studies.

(2) **(3134) Intratheater Connectors** - Intratheater connectors, capable of self-deploying to the theater of operations, provide the air and surface means to move forces and supplies over operational distances within a theater. Intratheater connectors provide the JFC a mobility asset that enables rapid force closure to the seabase from advanced bases, movement of logistics, ship-to-ship and ship-to-shore replenishment, and in appropriate threat environments, the maneuver of forces to the shore. This effort supports Contract Design.



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EXHIBIT R-2a, RDT&E Project Justification				FY 2007 PRESIDENT'S BUDGET SUBMISSION				DATE:	
								February 2006	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7		PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)				PROJECT NUMBER AND NAME 3131 Intratheater Connectors (Concept Studies)			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost		0.000	0.000	11.903	5.045	3.922	1.750	2.447	
RDT&E Articles Qty									
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (3131) Intratheater Connectors</b> - develops future capabilities in support of intratheater connectors. These ship systems will be capable of self-deploying to the theater of operations, provide the air and surface means to move forces and supplies over operational distances within a theater. Intratheater connectors provide the JFC a mobility asset that enables rapid force closure to the seabase from advanced bases, movement of logistics, ship-to-ship and ship-to-shore replenishment, and in appropriate threat environments, the maneuver of forces to the shore.</p> <p>The primary missions approved by the Services and defined in the Initial Capabilities Document (ICD) include the following:</p> <ul style="list-style-type: none"> <li>- Global War on Terror (GWOT)/Theater Security Cooperation Program (TSCP)</li> <li>- Intratheater Operational/Littoral Maneuver</li> <li>- Force Closure/Seabasing Support</li> </ul> <p>The Intratheater connector will have the following characteristics:</p> <ul style="list-style-type: none"> <li>* Moderate payload capacity (500 to 1,000 short tons)</li> <li>* Shallow draft</li> <li>* Self deploying and sustaining for short periods</li> <li>* Cross-theater laden ranges</li> </ul>									

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EXHIBIT R-2, RDT&E Budget Item Justification		FY 2007 PRESIDENT'S BUDGET SUBMISSION			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3131 Intratheater Connectors (Concept Studies)	
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	
President's Budget 2006		0.000	0.000	11.850	
President's Budget 2007		<u>0.000</u>	<u>0.000</u>	<u>11.903</u>	
Total Adjustments		0.000	0.000	0.053	
Programmatic Adjustments					
Revised rates & inflation indices		<u>0.000</u>	<u>0.000</u>	<u>0.053</u>	
Total Adjustment		0.000	0.000	0.053	
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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EXHIBIT R-2, RDT&E Budget Item Justification		<b>FY 2007 PRESIDENT'S BUDGET SUBMISSION</b>	<b>DATE: February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)</b>		PROJECT NUMBER AND NAME <b>3131 Intratheater Connectors (Concept Studies)</b>

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	11.903
RDT&E Articles Quantity			

**R&D Efforts for Intratheater Connector** - addressing critical technology development, risk mitigation and development of analysis of performance specification.

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

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

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

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

Total	0.000	0.000	11.903
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EXHIBIT R-2, RDT&E Budget Item Justification		FY 2007 PRESIDENT'S BUDGET SUBMISSION							DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RD TEN/BA-7		PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					3131 Intratheater Connectors (Concept Studies)			
D. Other Program Funding Summary		FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost
PE 0204228N SCN/BLI3043 Intratheater Connector Surface Support						197.680	174.151	181.788	TBD	553.619
<b>(U) Related RDT&amp;E: Not Applicable</b>										
PE 0604567N (U)SHIP CONTRACT DESIGN/ LIVE FIRE T&E/3134 Intratheater Connectors		0.000	1.912	0.000	0.000	0.000	0.000	0.000	0.000	1.912
PE 0603564N (U)SHIP PRELIM DESIGN & FESAIBILITY STUDIES/3131 Intratheater Connectors		0.000	4.775	0.000	0.000	0.000	0.000	0.000	0.000	4.775
<b>E. Acquisition Strategy:</b>		Feasibility studies will be conducted to determine the best designs to meet new Joint Service requirements for intratheater connectors.								
<b>F. Major Performers:</b>		<p>Field Activities &amp; Locations - Work Performed</p> <p>NSWC, Carderock, MD - Concept development and engineering support</p> <p>SPAWAR Systems Center, Charleston SC - Concept development and engineering support</p> <p>NAVAIR Pax River, MD - Concept development and engineering support</p> <p>Contractors &amp; Locations - Work Performed</p> <p>CSC, Washington, DC - Engineering Support</p> <p>ALION-JJMA, Washington, DC - Program Support</p> <p>Universities &amp; Locations - Work Performed</p>								

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FY 2007 PRESIDENT'S BUDGET SUBMISSION								DATE: February 2006				
Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RD TEN/BA-7			PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					3131 Intratheater Connectors (Concept Studies)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Modeling & Simulation	Various	Various						1.350	1Q		1.350	
Risk Mitigation Efforts	MAC	ALION-JJMA						0.350	1Q		0.350	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		1.700		0.000	1.700	
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	Various	Various						1.000	1Q		1.000	
Configuration Management											0.000	
Technical Data	Various	Various						0.675	1Q		0.675	
Studies & Analyses	Various	Various						0.759	1Q		0.759	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		2.434		0.000	2.434	
Remarks:												

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FY 2007 PRESIDENT'S BUDGET SUBMISSION								DATE: February 2006				
Exhibit R-3 Cost Analysis (page 2)			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
APPROPRIATION/BUDGET ACTIVITY			PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					3131 Intratheater Connectors (Concept Studies)				
RD TEN/BA-7												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various						0.219	1Q		0.219	
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		0.219		0.000	0.219	
Remarks:												
Contractor Engineering Support	MAC	CSC						1.600	1Q		1.600	
Government Engineering Support	WX	Various						2.900	1Q		2.900	
Program management Support	MAC	ALION-JJMA						2.700	1Q		2.700	
Travel	PD	NAVSEA						0.350			0.350	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		7.550		0.000	7.550	
Remarks:												
Total Cost			0.000	0.000		0.000		11.903		0.000	11.903	
Remarks:												

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EXHIBIT R4, Schedule Profile														FY 2007 PRESIDENT'S BUDGET SUBMISSION														DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME															
RD TEN/BA-7					PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)												3131 Intratheater Connectors (Concept Studies)															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones							△										△															
Preliminary Design & Feasibility Studies		△				△		△																								

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Exhibit R-4a, Schedule Detail		<b>FY 2007 PRESIDENT'S BUDGET SUBMISSION</b>				DATE: <b>February 2006</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA-7</b>	<b>PROGRAM ELEMENT</b> <b>PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)</b>				<b>PROJECT NUMBER AND NAME</b> <b>3131 Intratheater Connectors (Concept Studies)</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
AoA Completion		1Q						
Milestone A		3Q						
Milestone B				1Q				



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EXHIBIT R-2a, RDT&E Project Justification				<b>FY 2007 PRESIDENT'S BUDGET SUBMISSION</b>				DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)</b>				PROJECT NUMBER AND NAME <b>3134 Intratheater Connectors (Contract Design)</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost		<b>0.000</b>	<b>0.000</b>	<b>2.257</b>	<b>13.890</b>	<b>7.972</b>	<b>6.851</b>	<b>1.358</b>	
RDT&E Articles Qty									
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (3134) Intratheater Connectors</b> - contract design in support of intratheater connectors. These ship systems will be capable of self-deploying to the theater of operations, provide the air and surface means to move forces and supplies over operational distances within a theater. Intratheater connectors provide the JFC a mobility asset that enables rapid force closure to the seabase from advanced bases, movement of logistics, ship-to-ship and ship-to-shore replenishment, and in appropriate threat environments, the maneuver of forces to the shore.</p> <p>The primary missions approved by the Services and defined in the Initial Capabilities Document (ICD) include the following:</p> <ul style="list-style-type: none"> <li>- Global War on Terror (GWOT)/Theater Security Cooperation Program (TSCP)</li> <li>- Intratheater Operational/Littoral Maneuver</li> <li>- Force Closure/Seabasing Support</li> </ul> <p>The Intratheater connector will have the following characteristics:</p> <ul style="list-style-type: none"> <li>* Moderate payload capacity (500 to 1,000 short tons)</li> <li>* Shallow draft</li> <li>* Self deploying and sustaining for short periods</li> <li>* Cross-theater laden ranges</li> </ul>									

**CLASSIFICATION:  
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EXHIBIT R-2, RDT&E Budget Item Justification		FY 2007 PRESIDENT'S BUDGET SUBMISSION	DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDTE/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)	PROJECT NUMBER AND NAME 3134 Intratheater Connectors (Contract Design)	

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.257
RDT&E Articles Quantity			

**Program Acquisition Efforts for Intratheater Connector** - including pre-acquisition studies, initial shipbuilder downselect, Capability Development Document preparation, and milestone B preparation.

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

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

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

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

Total	0.000	0.000	2.257
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EXHIBIT R-2, RDT&E Budget Item Justification		FY 2007 PRESIDENT'S BUDGET SUBMISSION			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)			PROJECT NUMBER AND NAME 3134 Intratheater Connectors (Contract Design)	
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	
President's Budget 2006		0.000	0.000	2.247	
President's Budget 2007		<u>0.000</u>	<u>0.000</u>	<u>2.257</u>	
Total Adjustments		0.000	0.000	0.010	
Programmatic Adjustments					
Revised rates & inflation indices		<u>0.000</u>	<u>0.000</u>	<u>0.010</u>	
Total Adjustment		0.000	0.000	0.010	
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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EXHIBIT R-2, RDT&E Budget Item Justification							FY 2007 PRESIDENT'S BUDGET SUBMISSION			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)						PROJECT NUMBER AND NAME 3134 Intratheater Connectors (Contract Design)			
<b>D. Other Program Funding Summary</b>	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	To Complete	Total Cost	
PE 0204228N SCN/BLI3043 Intratheater Connector Surface Support					197.680	174.151	181.788	TBD	553.619	
<b>(U) Related RDT&amp;E:</b>										
PE 0603564N/SHIP PRELIM DESIGN & FEASIBILITY STUDIES/3131 Intratheater Connectors	0.000	4.775	0.000	0.000	0.000	0.000	0.000	0.000	4.775	
PE 0604567N (U)SHIP CONTRACT DESIGN/LIVE FIRE T&E/3134 Intratheater Connectors	0.000	1.912	0.000	0.000	0.000	0.000	0.000	0.000	1.912	
<b>E. Acquisition Strategy:</b>										
Feasibility studies will be conducted to determine the best designs to meet new Joint Service requirements.										
<b>F. Major Performers:</b>										
Field Activities & Locations - Work Performed										
NSWC, Carderock, MD - Concept development and engineering support										
SPAWAR Systems Center, Charleston SC - Concept development and engineering support										
NAVAIR Pax River, MD - Concept development and engineering support										
Contractors & Locations - Work Performed										
CSC, Washington, DC - Engineering Support										
ALION-JJMA, Washington, DC - Program Support										
Universities & Locations - Work Performed										

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FY 2007 PRESIDENT'S BUDGET SUBMISSION								DATE: February 2006				
Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
<b>RD TEN/BA-7</b>			<b>PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)</b>					<b>3134 Intratheater Connectors (Contract Design)</b>				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration	MAC	ALION-JJMA						0.278	1Q		0.278	
Ship Suitability											0.000	
Systems Engineering	MAC	CSC						0.500	1Q		0.500	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.778		0.000	0.778	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	Various	Various						0.435			0.435	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.435		0.000	0.435	
Remarks:												

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FY 2007 PRESIDENT'S BUDGET SUBMISSION								DATE: February 2006				
Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RD TEN/BA-7			PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)					3134 Intratheater Connectors (Contract Design)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	MAC	CSC						0.177	1Q		0.177	
Government Engineering Support	WX	Various						0.160	1Q		0.160	
Program management Support	MAC	ALION-JJMA						0.707	1Q		0.707	
Travel	PD	NAVSEA									0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		1.044		0.000	1.044	
Remarks:												
Total Cost			0.000	0.000		0.000		2.257		0.000	2.257	
Remarks:												

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EXHIBIT R4, Schedule Profile		FY 2007 PRESIDENT'S BUDGET SUBMISSION																				DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA-7					PROGRAM ELEMENT NUMBER AND NAME PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)										PROJECT NUMBER AND NAME 3134 Intratheater Connectors (Contract Design)													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones							△ MS A								△ MS B													
Source Selection Award Lead Vessel										△					△													

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Exhibit R-4a, Schedule Detail	<b>FY 2007 PRESIDENT'S BUDGET SUBMISSION</b>				DATE: <b>February 2006</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA-7</b>	<b>PROGRAM ELEMENT</b> <b>PE 0208058N/JOINT HIGH SPEED VESSEL (JHSV)</b>				<b>PROJECT NUMBER AND NAME</b> <b>3134 Intratheater Connectors (Contract Design)</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone A		3Q						
Milestone B				1Q				



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<b>CLASSIFICATION:</b>								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>				<b>BA 7</b>	R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		447.061	539.489	748.662	711.916	588.057	365.335	121.103
0728 EHF SATCOM Terminals		47.914	50.020	82.719	91.639	105.891	72.000	17.067
0731 Fleet Satellite Comm		0.683	0.621	0.685	1.766	1.785	1.779	1.820
2472 Mobile User Objective System		375.209	462.661	665.258	618.511	473.906	218.710	52.187
9122 Advanced Wideband System/Transformational Comm.		17.567	20.187	0.000	0.000	6.475	72.846	50.029
9999 Congressional Adds		5.688	6.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles		2	2	21	1	0	4	0
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>(U) Navy Extremely High Frequency (EHF) Satellite Communications (SATCOM) Program provides for the development and production of terminals to provide anti-jam (A/J), low probability of intercept (LPI)/detection communications capability for Command and Control of the fleet. The terminals will provide physical and electromagnetically survivable, worldwide communications in the current and projected electromagnetic and nuclear threat environments. Navy EHF terminals are interoperable with Army and Air Force terminals and will operate with Milstar as well as EHF packages on-board Ultra High Frequency (UHF) Follow-On (UFO) Satellites 4 through 11 and FLTSATCOM Satellites 7 and 8. The increased capability provided by EHF terminals is accomplished by use of the wider bandwidths available at extremely high frequencies, narrow antenna bandwidths, spread spectrum techniques, on-board satellite processing, and advanced signal processing technology. The EHF Medium Data Rate (MDR) upgrade program is complete and provides increased bandwidth by providing higher data rates [4.8 kilobits per second (Kbps) – 1.544 megabits per second (Mbps)] when communicating with Milstar II satellites.</p> <p>(U) The Navy EHF Communications Controller (NECC) provides automated, netted tactical data information exchange over jam resistant EHF Low Data Rate (LDR) satellite links. The NECC will provide for load and channel sharing, resource management, communications management and planning, network control and monitoring, and packet switching.</p> <p>(U) The Navy Super High Frequency (SHF) Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity, reliable, low probability of intercept (LPI), secure, and jam resistant communications to Joint and Allied Forces. SHF SATCOM operates with the Defense Satellite Communication System (DSCS), DSCS Service Life Extension Program (SLEP), and Wideband Gapfiller Satellite (WGS) System satellites. The SHF SATCOM system is comprised of satellites, ground stations, and aircraft, ship and ground terminals to provide assured worldwide access to services such as Defense Information Systems Network (DISN), Global Command and Control System (GCCS), Plain Old Telephone Service (POTS), Secure Telephone Unit III (STU III) Secure Communications Service, Internet Protocol Routed Networks, and other digital services. The satellite systems SHF SATCOM operate over transitioned from old technology DSCS III satellites to the more advanced DSCS SLEP and WGS satellites beginning in FY 1999 and continuing through FY 2005. The population of Navy SHF SATCOM terminals is also growing at a rapid pace. In order to meet the communication requirements of Navy users, advanced communication technologies for SHF SATCOM terminals must be developed to take full advantage of the capabilities of the new satellites in an efficient manner.</p> <p>(U) The EHF Time Division Multiple Access (TDMA) Interface Processor (TIP) will support wide area network (WAN) implementation through reliable, efficient, netted data exchange using MDR services. The MDR TIP combines support for general-purpose internet protocol (IP) data delivery and high speed, rapid delivery of tactical data within a single system architecture. TIP supports single-beam, multi-beam, and multi-satellite networks.</p>								

<b>CLASSIFICATION:</b>		
EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>	<b>BA 7</b>	R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>		
<p>(U) The Sensitive Compartmented Information Networks (SCI Networks), is an evolutionary acquisition program designed to provide enabling technology necessary for Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of SI/SCI data through a secure, controllable network interface with the 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&amp;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 SI operations not achievable with current systems.</p> <p>(U) The Mobile User Objective System (MUOS) program provides for the development of the next generation DoD advanced narrowband communications satellite constellation. The current UHF Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS program is baselined to the joint warfighter requirements stipulated in the July 2001 ORD as modified by the 2003 JROC-M and will be designed to provide increased capacity and availability to the mobile warfighter.</p> <p>(U) This MUOS RDT&amp;E effort supports a USecAF approved IOC in 2010 and FOC in 2014. A MUOS Risk Reduction &amp; 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 Department of Defense Space Major Defense Acquisition Program. FY05-FY07 MUOS efforts are focused on Preliminary Design Review (PDR) and Critical Design Review (CDR). The funding for FY07 also includes software development for UFO TT&amp;C Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation.</p> <p>(U) The Navy Transformational Communications Integrated Terminal Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), Anti-Jam (AJ), 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 LAN to Antenna capability, including quality of service required for Navy unique missions. 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.</p> <p>(U) The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support 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. This project has extremely high visibility within the DoD and United States Congress. The project was realigned to PEO C4I &amp; Space from the United States Air Force starting in FY04 to meet the requirements and funding priorities established for the project.</p> <p>(U) This project includes conducting JIST-NET software development and engineering analysis. The project is currently in the system and software engineering phase. The contractor will design, implement, and test the next JIST-NET prototype. Also, comprehensive studies of the actual usage of satellite resources in a given Area Of Responsibility (AOR) for a specified period of time will be performed. Support will include all requirements analysis, development, and interface definition. The project will define requirements and interface/integrate with existing and under developed SATCOM mission management tools. The contractor will update the JIST-NET Software Design for the next JIST-NET prototype using the results of a Software Requirements Analyses. The Software Design Update will build upon the current JIST-NET V1S3 prototype software. The project team will provide all the necessary tools, software, documentation, and support necessary to accomplish the required analysis and integration. 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 Commanders.</p> <p>(U) Covert Communications required for operational utilization.</p> <p>(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.</p>		

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY			
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>	<b>BA 7</b>	0303109N Satellite Communications (Space)	
<b>PROGRAM CHANGE SUMMARY:</b>			
(U) Funding:		FY 2005	FY 2006
FY06 President's Budget		463.476	541.980
FY07 President's Budget		447.061	539.489
Total Adjustments		-16.415	-47.193
<b>Summary of Adjustments</b>			
	FORCEnet Transformational Communications (TC)		-10.000
	Technical Adjustment to Nuclear Alterations		-0.055
	Additional LCS Mission Modules		0.055
	Contract Support Reduction		-6.212
	Transformational Communications Delay		-6.400
	NWCF Civpers Efficiencies		-0.160
	UHF SATCOM Integrated Waveform OSD Offset		-1.900
	Small Business Innovation Research (SBIR) Tax	-11.587	
	MUOS Ground Station Construction		-26.180
	Federal Technology Transfer Tax	-0.064	
	Nuclear Physical Security (OSD-09)	0.004	
	Inflation		3.461
	Civpers Raise Rate Change		0.198
	Sec. 8026(f): Federally Funded Research and Development Centers		-0.356
	Sec. 8125: Revised Economic Assumptions		-2.467
	Congressional Adds		6.000
	Congressional Action 1% Reduction		-5.668
	Department of Energy Transfer	-0.356	
	Misc Navy Adjustments	-4.412	
	<b>Subtotal</b>	<b>-16.415</b>	<b>-47.193</b>
 (U) Schedule:			
<p>EHF SATCOM Terminals (project 0728) - SDD contract award Oct 2003. Required Acquisition Strategy Report (ASR) approved June 2002, and ASR Update approved July 2003. Schedule Development effort to support the additional SCA scope and cost are incorporated into the program baseline. NMT funding profile adjustment requires the prototype phase to be extended an additional 6 months. Competitive down select currently scheduled for May 2007.</p> <p>Fleet Satellite Comm. (project 0731) - MS III (Submarine) and Submarine/BCT DT removed per MDA ADM decision of 2 Sep 2004 to grandfather Submarine/BCA variants under 4 OCT 2001 SCI Networks MS III ADM. 148E and 148D schedules shifted to the right due to delayed contract award. MS III, now know as MS C, shifted to the left and updated to reflect decision by PM to field 148E and 148D as a maintenance modification. 148E and 148D schedule shifted further to the right due to delayed contract award. 148E and 148D will have an Observation of Operational Capability (OOC) in conjunction with their respective Developmental Tests. As a result, 148E and 148D will not have an FOT&amp;E, and as such, that was deleted from the schedule.</p> <p>Advanced Wideband System/Transformational Communications (project 9122). Program Office began Acquisition Strategy development and refinement in FY04. Milestone B is currently project in FY10.</p>			

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<b>CLASSIFICATION:</b>								EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost			47.914	50.020	82.719	91.639	105.891	72.000	17.067	
RDT&E Articles Qty					20					
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>										
<p>(U) Navy Extremely High Frequency (EHF) Satellite Communications (SATCOM) Program provides for the development and production of terminals to provide anti-jam (A/J), low probability of intercept (LPI)/detection communications capability for Command and Control of the fleet. The terminals will provide physical and electromagnetically survivable, worldwide communications in the current and projected electromagnetic and nuclear threat environments. Navy EHF terminals are interoperable with Army and Air Force terminals and will operate with Milstar as well as EHF packages on-board Ultra High Frequency (UHF) Follow-On (UFO) Satellites 4 through 11 and FLTSATCOM Satellites 7 and 8. The increased capability provided by EHF terminals is accomplished by use of the wider bandwidths available at extremely high frequencies, narrow antenna bandwidths, spread spectrum techniques, on-board satellite processing, and advanced signal processing technology. The EHF Medium Data Rate (MDR) upgrade program is complete and provides increased bandwidth by providing higher data rates [4.8 kilobits per second (Kbps) – 1.544 megabits per second (Mbps)] when communicating with Milstar II satellites.</p> <p>(U) The Navy EHF Communications Controller (NECC) provides automated, netted tactical data information exchange over jam resistant EHF Low Data Rate (LDR) satellite links. The NECC will provide for load and channel sharing, resource management, communications management and planning, network control and monitoring, and packet switching.</p> <p>(U) The EHF Time Division Multiple Access (TDMA) Interface Processor (TIP) will support wide area network (WAN) implementation through reliable, efficient, netted data exchange using MDR services. The MDR TIP combines support for general-purpose internet protocol (IP) data delivery and high speed, rapid delivery of tactical data within a single system architecture. TIP supports single-beam, multi-beam, and multi-satellite networks.</p> <p>(U) The Navy Super High Frequency (SHF) Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity, reliable, low probability of intercept (LPI), secure, and jam resistant communications to Joint and Allied Forces. SHF SATCOM operates with the Defense Satellite Communication System (DSCS), DSCS Service Life Extension Program (SLEP), and Wideband Gapfiller Satellite (WGS) System satellites. The SHF SATCOM system is comprised of satellites, ground stations, and aircraft, ship and ground terminals to provide assured worldwide access to services such as Defense Information Systems Network (DISN), Global Command and Control System (GCCS), Plain Old Telephone Service (POTS), Secure Telephone Unit III (STU III) Secure Communications Service, Internet Protocol Routed Networks, and other digital services. The satellite systems SHF SATCOM operate over are transitioning from old technology DSCS III satellites to the more advanced DSCS SLEP and WGS satellites beginning in FY 1999 and continuing through FY 2005. The population of Navy SHF SATCOM terminals is also growing at a rapid pace. In order to meet the communication requirements of Navy users, advanced communication technologies for SHF SATCOM terminals must be developed to take full advantage of the capabilities of the new satellites in an efficient manner.</p>										

## CLASSIFICATION:

EXHIBIT R-2a, RDT&amp;E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&amp;E, N / BA-7

0303109N Satellite Communications (Space)

0728 EHF SATCOM Terminals

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

(U) The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced EHF Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Mbps to 8 Mbps, increases the number of coverage areas and retains A/J, LPI protection characteristics. It is compatible with today's Navy LDR/MDR terminals and will sustain the 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 Milstar, DSCS, WGS and GBS systems. The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System ORD. Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband SATCOM capability for ship, submarine, and shore platforms.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals

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

	FY 05	FY 06	FY 07
AN/WSC-6 WGS Terminal Upgrades	0.650	0.000	0.000
RDT&E Articles Quantity			

(U) **FY05:** Completed Operational testing of advanced modem system and terminal upgrades.

	FY 05	FY 06	FY 07
NMT Development, First & Second Phases	46.514	49.520	82.719
RDT&E Articles Quantity			20

(U) First and second phases of NMT development for System Design and Development (SDD) for ship, shore and submarine platforms.

(U) **FY05:** Continued NMT hardware and software development of 8 SCA compliant prototype terminals. Continued high level test plan. Additional Software Development required to ensure legacy equipment, utilized by NMT program, will meet AEHF Satellite System requirements.

(U) **FY06:** Continue NMT hardware and software development of 8 SCA compliant prototype terminals. Continue high level test plan. Additional Software Development required to ensure legacy equipment, utilized by NMT program, will meet AEHF Satellite System requirements.

(U) **FY07:** Complete terminal hardware and software development for 8 SCA compliant NMT prototypes. Perform over-the-air testing of NMT prototypes and conduct vendor down-select. Commence design and development of 20 Q/Ka capable EDMs and added X-band for submarine platforms. EDM test sets are required at the following sites: one set at contractor facility for testing, one set shared between East/West coast government facilities for program and joint interoperability testing, and one set for operational assessment on platforms. Each set is composed of two ship, one sub, and one shore terminal configurations. In addition, eight EDMs are planned as 1st of class platform installations for unique environmental testing and production phase risk reduction.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals

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

	FY 05	FY 06	FY 07
EHF Polar	0.750	0.500	0.000
RDT&E Articles Quantity			

(U) EHF POLAR / UFO-11 software development and systems engineering.

(U) **FY05:** Continued development of Tracking, Telemetry and Control subsystems and end-to-end system testing for Polar 2/3 system.

(U) **FY06:** Continue development of Tracking, Telemetry and Control subsystems and end-to-end system testing for Polar 2/3 system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N / BA-7</b>		0303109N Satellite Communications (Space)			0728 EHF SATCOM Terminals		
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>							
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
321500 - OPN Ship and Shore*	38.537	21.106	-	-	-	84.367	182.732
* FY05 and FY06 OPN are NESP funds							
(U) Related RDT&E:							
(U) PE 0303603F, Milstar							
(U) PE 0303601F, Air Force Satellite Communications							
<b>(U) D. ACQUISITION STRATEGY:</b>							
(U) Navy Multiband Terminal (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 one vendor will occur for the development, demonstration and procurement of twenty Engineering Developmental Models (EDMs) which will incorporate integrated multi-band capabilities for Q/Ka band, Submarine X-Band, and Ship X/Ka frequency band communication requirements.							
<b>(U) E. MAJOR PERFORMERS:</b>							
Harris Corp., Melbourne, FL - NMT SDD Vendor; contract awarded Oct. 03							
Raytheon, Marlborough, MA - NMT SDD Vendor; contract awarded Oct. 03							
Naval Undersea Warfare Center (NUWC), Newport, RI - NMT Technical Director; annual WX document							
<b>(U) F. METRICS:</b>							
Earned Value Management (EVM) is used for metrics reporting and risk management.							



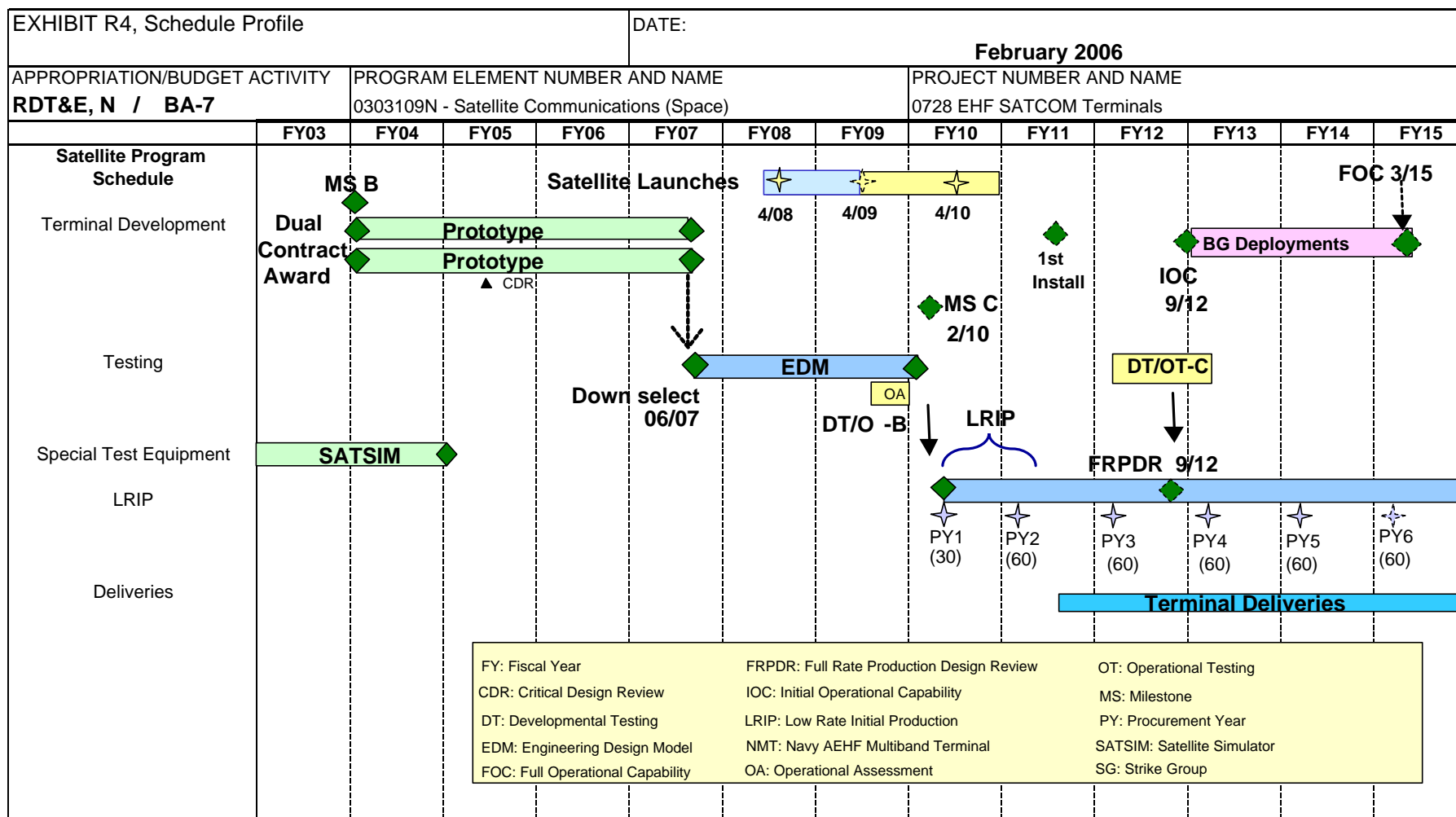
UNCLASSIFIED

<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	CPAF	Various	58.436	39.260	10/04	39.701	11/05	53.647	11/06	Continuing	Continuing	
Hardware Development	C/FFP	Harris (Melbourne, FL)	5.901	0.650	10/04					Continuing	Continuing	
Hardware Development	TBD	TBD						21.430	10/06			
Hardware Development	WR	SSC SD (San Diego, CA)	1.077									
Ancillary Hardware Development	CPAF	Raytheon (Marlborough, MA)	57.790									
Software Development	WR	NUWC (Newport, RI)	8.017	0.693	10/04	0.500	10/05			Continuing	Continuing	
Software Development	CPAF	Raytheon (Marlborough, MA)		1.000	04/04	3.700	12/05			Continuing	Continuing	
Systems Engineering	WR	SSC SD (San Diego, CA)	14.169							Continuing	Continuing	
Systems Engineering	WR	NUWC (Newport, RI)	4.974	0.709	10/04	1.994	10/05	1.924	10/06	Continuing	Continuing	
Systems Engineering	Various	Various	9.852	0.423	10/04	0.703	10/05	0.706	10/06	Continuing	Continuing	
GFE	Various	Various	8.158	1.500	10/04	0.300	10/05	0.150	10/06	Continuing	Continuing	
Subtotal Product Development			168.374	44.235		46.899		77.856		Continuing	Continuing	
Remarks:												
Development Support	WR	SSC SD (San Diego, CA)	7.504							Continuing	Continuing	
Studies & Analysis	WR	Various	5.536			0.500	10/05	0.500	10/06			
Information Assurance	Various	Various	0.586	0.488	10/04	0.335	10/05	0.340	10/06	Continuing	Continuing	
Subtotal Support			13.626	0.488		0.835		0.840		Continuing	Continuing	
Remarks:												

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<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC SD	10.130	0.483	10/04	0.154	10/05	0.659	10/06	Continuing	Continuing	
Operational Test & Evaluation	WR	Various	0.556							Continuing	Continuing	
Subtotal T&E			10.686	0.483		0.154		0.659		Continuing	Continuing	
Remarks:												
Contract Management	Various	Various	2.480	0.760	10/04	0.716	10/05	0.737	10/06	Continuing	Continuing	
Program Management	Various	Various	2.047	1.548	10/04	1.318	10/05	1.562	10/06	Continuing	Continuing	
Acquisition Management	Various	BAH						0.966	10/06	Continuing	Continuing	
Acquisition Management	WR	NCAD		0.300	09/05							
Travel		Gov't Travel	0.105	0.100	10/04	0.098	10/05	0.100	10/06			
Subtotal Management			4.632	2.708		2.132		3.364		Continuing	Continuing	
Remarks:												
Total Cost			197.318	47.914		50.020		82.719		Continuing	Continuing	
Remarks:												
Remarks:												

CLASSIFICATION:



Note:

Reflects development of 20 EDMs

Production Quantity includes 19 SCN platforms (2 of the PY2 buy are SCN procurements)



<b>CLASSIFICATION:</b>							
EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>0.683</b>	<b>0.621</b>	<b>0.685</b>	<b>1.766</b>	<b>1.785</b>	<b>1.779</b>	<b>1.820</b>
RDT&E Articles Qty	<b>2</b>	<b>2</b>					
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                  (U) The Sensitive Compartmented Information Networks (SCI Networks), is an evolutionary acquisition program designed to provide enabling technology necessary for Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of SI/SCI data through a secure, controllable network interface with the 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&amp;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 SI operations not achievable with current systems.</p>							

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm

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

	FY 05	FY 06	FY 07
SCI Networks	0.683	0.621	0.685
RDT&E Articles Quantity	2	2	

**FY05:** Continued integration and implementation of SCI Networks and associated Special Intelligence Communications. Conducted developmental and operational testing of software and hardware for sub, surface, and shore. Developed, integrated, and tested AN/USQ-148E(V)2 surface suites. Developed and integrated COMPOSE 2.0.3 software for AN/USQ-148E(V)2. Continued development and integration of IPv6 capabilities. Completed AN/USQ-148E(V)2 Lab DT.

**FY06:** Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. DT/OOC of AN/USQ-148E(V)2 and development and integration of COMPOSE 3.X software. IPv6 integration and laboratory testing. Lab DT of AN/USQ-148D(V)2. Integration and testing of VoIP.

**FY07:** Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. DT/OOC of AN/USQ-148D(V)2. Integration and testing of Video over IP.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm			
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
SCI NETWORKS	0.806	4.409	23.141	13.298	4.914	5.119	5.107	Cont	Cont
 <b>(U) D. ACQUISITION STRATEGY: *</b>									
<p>SCI Network variants are comprised of Commercial Off the Shelf equipments and Government Off the Shelf software integrated into SCI Networks designs associated with class of ship. Next Generation versions are being considered for acquisition via the LM Q-70 contract vehicle.</p>									
 <b>(U) E. Major Performers:</b>									
<p>SPAWAR Systems Center, San Diego (SSC SD) provides research and development for next generation SCI Networks.</p>									
 <b>* Not required for Budget Activities 1,2,3, and 6</b>									

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm
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Cost Categories	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Var	21.359	0.683	12/04	0.621	12/05	0.685	12/06	Continuing	Continuing	0.000
Ancillary Hardware Development										0.000	0.000
Systems Engineering										0.000	0.000
Licenses										0.000	0.000
Tooling										0.000	0.000
GFE										0.000	0.000
Award Fees										0.000	0.000
Subtotal Product Development		21.359	0.683		0.621		0.685		0.000	23.348	0.000

Remarks:

Development Support										0.000	0.000
Software Development										0.000	0.000
Training Development										0.000	0.000
Integrated Logistics Support										0.000	0.000
Configuration Management										0.000	0.000
Technical Data										0.000	0.000
GFE										0.000	0.000
Subtotal Support		0.000	0.000		0.000		0.000		0.000	0.000	0.000

Remarks:



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<b>CLASSIFICATION:</b>											
Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm				
Cost Categories	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation										0.000	0.000
Operational Test & Evaluation										0.000	0.000
Live Fire Test & Evaluation										0.000	0.000
Test Assets										0.000	0.000
Tooling										0.000	0.000
GFE										0.000	0.000
Subtotal T&E		0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:											
Contractor Engineering Support										0.000	0.000
Government Engineering Support										0.000	0.000
Program Management Support										0.000	0.000
Travel										0.000	0.000
Subtotal Management		0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:											
Total Cost		21.359	0.683		0.621		0.685		0.000	23.348	0.000
Remarks:											

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)								PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm								
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>								▲ Post MS C 148D/E PM Memo																				
Prototype Phase																												
System Development Submarine/BCA AN/USQ-148E AN/USQ 148D																												
Equipment Delivery AN/USQ 148D																												
Software SW Delivery								3.X ▲								4.X ▲												5.X ▲
<b>Test &amp; Evaluation Milestones</b>																												
Development Test																												
Operational Test																												
<b>Production Milestones</b>																												
LRIP I																												
LRIP II																												
FRP																												
Deliveries																												

Note: MS III (Submarine) and Submarine/BCA DT removed per MDA ADM decision of 2 SEP 2004 to grandfather Submarine/BCA variants under 4 OCT 2001 SCI Networks MS III ADM. 148E and 148D schedules shifted to the right due to delayed contract award. MS III, now known as MS C, shifted to the left and updated to reflect decision by PM to field 148E and 148D as a maintenance modification. 148E and 148D schedule shifted further to the right due to delayed contract award. Per agreement with OPNAV and COMOPTEVFOR 148E and 148D will have an Observation of Operational Capability (OOC) in conjunction with their respective Developmental Tests. As a result, 148E and 148D will not have an FOT&E, and as such, that was deleted from the schedule.



<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			\$375.209	\$462.661	\$665.258	\$618.511	\$473.906	\$218.710	\$52.187
RDT&E Articles Qty					1	1			
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>									
<p>(U) The Mobile User Objective System (MUOS) program provides for the development of the next generation DoD advanced narrowband communications satellite constellation. The current UHF Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS program is baselined to the joint warfighter requirements stipulated in the July 2001 ORD as modified by the 2003 JROC-M and will be designed to provide increased capacity and availability to the mobile warfighter.</p> <p>(U) This MUOS RDT&amp;E effort supports a USecAF approved IOC in 2010 and FOC in 2014. A MUOS Risk Reduction &amp; 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 Department of Defense Space Major Defense Acquisition Program. FY05-FY07 MUOS efforts are focused on Preliminary Design Review (PDR) and Critical Design Review (CDR). The funding for FY07 also includes software development for UFO TT&amp;C Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation.</p>									

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 2472 Mobile User Objective System

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	375.209	462.661	665.258
RDT&E Articles Quantity			1

(U) **FY05:** Continued funding for MUOS Risk Reduction and Design Development (RRDD) contract and associated systems engineering tasks required for PDR.  
 (U) **FY06:** Continue funding MUOS RRDD contract and associated system engineering tasks in order to accomplish all FY06 CDR tasks, a necessary condition to meet IOC in 2010.  
 (U) **FY07:** Continue funding for MUOS RRDD contract to complete the CDR phase and begin work on spacecraft engineering development models. The funding for FY07 includes software development for UFO TT&C Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation.

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

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

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
2433 Mobile User Objective System (WPN Funding)					161.049	535.568	526.675	485.903	900.855	2,610.050
MUOS Ground Station Construction, PE: 0301376N (MILCON Funding)				26.180	2.100					28.280
<b>(U) D. ACQUISITION STRATEGY: *</b>										
<p>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 RRDD contract was awarded in September 2004 for the first two satellites, system engineering and associated ground infrastructure. RDT&amp;E funds will be used to procure the first two satellites. WPN funds will be used to procure the remaining four satellites and launch services for all six satellites.</p> <p>Updates to the ground UFO TT&amp;C terminals that support UFO on-orbit operations are included. RDT&amp;E funds in the amount of \$10.5M in FY07 will be used for UFO TT&amp;C software and firmware development. WPN funds in the amount of \$13.2M in FY08 and \$2M in FY09 will be used to procure UFO TT&amp;C terminal updates. MILCON funds are required to prepare MUOS ground sites located in Sicily, Virginia and Hawaii.</p>										
<b>(U) E. MAJOR PERFORMERS:</b>										
Lockheed Martin										
<b>(U) F. METRICS:</b>										
Earned Value Management (EVM) is used for metrics reporting and risk management.										
<b>* Not required for Budget Activities 1,2,3, and 6</b>										

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CLASSIFICATION: UNCLASSIFIED												
Exhibit R-3 Cost Analysis										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N Satellite Communications (Space)			2472 Mobile User Objective System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RRDD AOS Contract	CPAF/FPI	Lockheed Martin (LM)	\$ 48,000	\$ 341,262	10/04	\$ 419,003	1Q	\$ 603,160	1Q	\$ 1,206,252	\$ 2,617,677	\$ 2,617,677
CE Contracts & Demos	FFP	LM / Raytheon / Spec Astro / Boeing	\$ 21,320	\$ -		\$ -		\$ -			\$ 21,320	\$ 21,320
CAD Contracts	FFP	LM / Raytheon	\$ 105,154	\$ -		\$ -		\$ -			\$ 105,154	\$ 105,154
AoA for MUOS	MIPR	Aerospace	\$ 2,782	\$ -		\$ -		\$ -			\$ 2,782	\$ 2,782
Government Studies	VAR	VAR	\$ 0,711	\$ -		\$ -		\$ -			\$ 0,711	\$ 0,711
Crypto Procurement	MIPR	NSA	\$ 1,520	\$ 0,321		\$ 1,500		\$ 2,500		\$ -	\$ 5,841	\$ 5,841
<b>Subtotal Product Development</b>			<b>\$ 179,487</b>	<b>\$ 341,583</b>		<b>\$ 420,503</b>		<b>\$ 605,660</b>		<b>\$ 1,206,252</b>	<b>\$ 2,753,485</b>	<b>\$ 2,753,485</b>
Remarks:												
Software Development for UFO TT&C	TBD	TBD		\$ -		\$ -		\$ 10,500			\$ 10,500	
Facilities Modifications	VAR	VAR		\$ 0,673		\$ 0,799		\$ 3,000		\$ 1,602	\$ 6,073	
Leased Lines	TBD	TBD		\$ -		\$ -		\$ -		\$ 23,500	\$ 23,500	
Studies & Analyses (EELV)	MIPR	SMC/FMAIC		\$ -		\$ 0,500		\$ 1,600		\$ 2,300	\$ 4,400	
ISCS Integration	WX	NAVSOC		\$ 0,400		\$ 0,626		\$ 2,000		\$ 0,374	\$ 3,400	
JTRS JTEL Testing	TBD	TBD		\$ -		\$ -		\$ -		\$ 2,500	\$ 2,500	
<b>Subtotal Support</b>			<b>\$ -</b>	<b>\$ 1,073</b>		<b>\$ 1,925</b>		<b>\$ 17,100</b>		<b>\$ 30,276</b>	<b>\$ 50,373</b>	<b>\$ -</b>
Remarks												
Developmental Test & Evaluation	VAR	VAR	\$ 0,182	\$ 0,840		\$ 0,901		\$ 0,824		\$ 3,701	\$ 6,448	
Operational Test & Evaluation	VAR	VAR		\$ 0,223		\$ 0,597		\$ 0,715		\$ 4,433	\$ 5,968	
Live Fire Test & Evaluation				\$ -		\$ -		\$ -		\$ -	\$ -	
<b>Subtotal T&amp;E</b>			<b>\$ 0,182</b>	<b>\$ 1,063</b>		<b>\$ 1,498</b>		<b>\$ 1,539</b>		<b>\$ 8,134</b>	<b>\$ 12,416</b>	<b>\$ -</b>
Remarks												
Contractor Engineering Support	VAR	VAR	\$ 32,301	\$ 19,871		\$ 21,895		\$ 22,736		\$ 209,869	\$ 306,672	
Government Engineering Support	VAR	VAR	\$ 4,936	\$ 4,463		\$ 5,373		\$ 5,580		\$ 64,612	\$ 84,964	
Program Management Support	VAR	VAR	\$ 1,750	\$ 6,823		\$ 8,363		\$ 8,685		\$ 33,758	\$ 59,379	
Travel	VAR	VAR	\$ 0,295	\$ 0,332		\$ 0,303		\$ 0,400		\$ 10,181	\$ 11,511	
Frequency Filing	ITU	MD	\$ 0,635	\$ -		\$ 0,500		\$ 1,000		\$ 0,500	\$ 2,635	
IPA/ICAT	TBD	TBD		\$ -		\$ 0,500		\$ 0,500		\$ -	\$ 1,000	
PEO Management Support	VAR	VAR		\$ -		\$ 1,800		\$ 2,059		\$ -	\$ 3,859	
<b>Subtotal Management</b>			<b>\$ 39,917</b>	<b>\$ 31,490</b>		<b>\$ 38,735</b>		<b>\$ 40,959</b>		<b>\$ 318,919</b>	<b>\$ 470,020</b>	<b>\$ -</b>
Remarks												
<b>Total Cost</b>			<b>\$ 219,586</b>	<b>\$ 375,209</b>		<b>\$ 462,661</b>		<b>\$ 665,258</b>		<b>\$ 1,563,580</b>	<b>\$ 3,286,294</b>	<b>\$ 2,753,485</b>
Remarks												





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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-7</b>	0303109N Satellite Communications (Space)				2472 Mobile User Objective System			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
System Design Review (SDR)	1Q							
Component Advanced Development (CAD)	1Q-4Q							
Key Decision Point B	4Q							
Preliminary Design (PD) Phase		1Q-4Q	1Q-4Q					
Test and Evaluation Master Plan (TEMP)		2Q	4Q	4Q				
Segment/Intersegment Testing			1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q		
Preliminary Design Review (PDR)			1Q					
Key Decision Point C			4Q					
DT-C				1Q-4Q				
Critical Design Review (CDR)				3Q				
Complete Design (CD) Phase			4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
DT-D1					1Q-4Q			
Build Approval					1Q			
MUOS Ground Systems Site Prep and Installation				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q
Operational Assessment (OA-1)					4Q			
Operational Test Readiness Review (OTRR)					4Q		2Q	
Follow-On Buy Decision						1Q		
DT-D3							1Q-4Q	1Q
Developmental Testing (DT-11A) (On Orbit)							1Q	
Mission Readiness Review (MRR)							1Q	
Operational Assessment (OA-11)							1Q	
Launch 1 (M1)							1Q	
IOC							2Q	
On-Orbit Testing							1Q-4Q	1Q-4Q
Multi-Service Operational Testing & Evaluation (MOT&E)							3Q	
Launch 2 (M2)								1Q
Follow-On Test Evaluation (FOT&E)								1Q-4Q
Deployment Decision Review (DDR)								3Q
UFO TT&C Terminal Software Development				1Q-4Q				

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<b>Classification:</b>							
Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 2472 Mobile User Objective System		
<b>Program Title</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY2010</b>	<b>FY2011</b>
2472 Mobile User Objective System	\$ 41.689	\$ 61.144	\$ 50.486	\$ 30.855	\$ 23.873	\$ 15.327	\$ -

Notes:

- 1) Values are in millions of dollars.
- 2) The 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 FY05 are obligated at the the beginning of FY05, but are required for expenditure at the beginning of FY06 (in October and November of CY05), assuming no termination occurs.
- 3) Termination values were obtained from the Contract Funds Status Report (CFSR), a contractually required deliverable on the RRDD contract.

<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			17.567	20.187	0.000	0.000	6.475	72.846	50.029
RDT&E Articles Qty								4	
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>									
<p>(U) The Navy Transformational Communications Integrated Terminal Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), Anti-Jam (AJ), 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 LAN to Antenna capability, including quality of service required for Navy unique missions. 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.</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	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 05	FY 06	FY 07
AWS/TC Concept Development	17.567	20.187	0.000
RDT&E Articles Quantity			

(U) **FY05:** Migrated component prototypes tested in FY 2004 into a terminal level design. Began system level engineering process to determine optimal tradeoffs between cost and performance. Continued prototype build of terminal level components (multi band antenna system, multi-band IF and RF generation systems).

(U) **FY06:** Continue system level engineering process to determine optimal tradeoffs between cost and performance. Mitigate risks that have been identified. Products to support the acquisition include the terminal suite acquisition specification flowdown, the Acquisition Strategy Report, and the draft Capability Development Document (CDD). Hardware products include the development of a prototype advanced Transmissions Security (TRANSEC)/Communications Security (COMSEC) computer chip that will be required for the operation of every Navy Transformations Communications terminal.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications		
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>							
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
321500 - OPN Ship and Shore							
 <b>(U) D. ACQUISITION STRATEGY:</b>							
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 Milestone B decision, including, but not limited to, a terminal specification, statement-of-work, Acquisition Strategy Report, and Source Selection Plan.							
 <b>(U) E. MAJOR PERFORMERS:</b>							
Naval Undersea Warfare Center (NUWC), Newport, RI SSC San Diego (SD), San Diego, CA							
 <b>(U) F. METRICS:</b>							
Earned Value Management (EVM) is used for metrics reporting and risk management.							

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications
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Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various	11.774	11.456	11/04	12.944	10/05			Continuing	Continuing	
Systems Engineering	Various	Various	1.359	1.569	10/04	1.173	10/05			Continuing	Continuing	
Systems Engineering	WR	NUWC	0.895	1.141	10/04	1.472	10/05			Continuing	Continuing	
Subtotal Product Development			14.028	14.166		15.589		0.000		Continuing	Continuing	

Remarks:

Development Support	WR	SSC SD	0.860	1.494	10/04	1.086	10/05			Continuing	Continuing	
Studies & Analyses	WR	Various	2.275	1.200	10/04	2.000	10/05			Continuing	Continuing	
Information Assurance	WR	Various				0.939	10/05					
Subtotal Support			3.135	2.694		4.025		0.000		Continuing	Continuing	

Remarks:

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2) DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**      PROGRAM ELEMENT: 0303109N Satellite Communications (Space)      PROJECT NUMBER AND NAME: 9122 Advanced Wideband System / Transformational Communications

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												0.000
Operational Test & Evaluation												0.000
												0.000
												0.000
												0.000
Subtotal T&E			0.000			0.000		0.000		0.000	0.000	

Remarks:

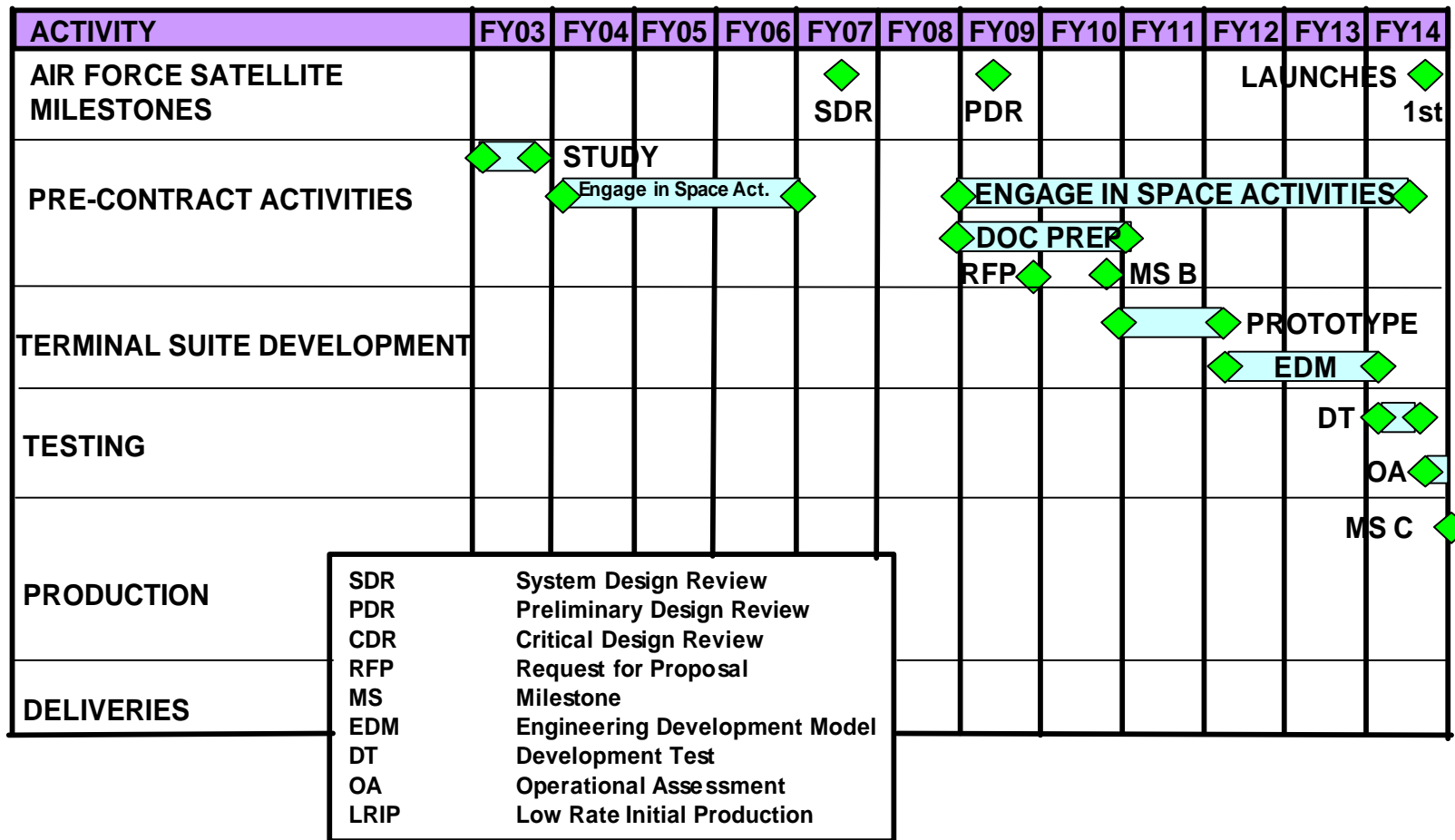
Contractor Engineering Support						0.494	10/05			Continuing	Continuing	
Development Support												
Program Management Support	Various	Various	0.446	0.632	10/04	0.079	10/05			Continuing	Continuing	
Studies & Analyses												
Travel			0.047	0.075	10/04							
Subtotal Management			0.493	0.707		0.573		0.000		Continuing	Continuing	

Remarks:

Total Cost			17.656	17.567		20.187		0.000		Continuing	Continuing	
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Remarks:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications







<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification							DATE:		
							<b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0303109N - Satellite Communications (Space)			9999 - Congressional Increases			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			5.688	6.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty									
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>									
<b>(U) Congressional ADDs for Satellite Communications</b>									

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROJECT NUMBER AND NAME 9999 - Congressional Increases																						
<b>(U) B. Accomplishments/Planned Program</b>																								
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;"></th> <th style="width:15%;">FY 05</th> <th style="width:15%;">FY 06</th> <th style="width:15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Software Development / Systems Engineering (9421)</td> <td></td> <td style="text-align: center;">4.720</td> <td style="text-align: center;">3.500</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b>FY05:</b> Conducted JIST-NET software development and engineering analysis operations with the following deliverable outputs for FY05: bandwidth study (delivered Dec 05 with monthly updates through Aug 06) and 2 software deliverables (due in May 06 and Aug 06).            (U) <b>FY06:</b> Conducted JIST-NET software development and engineering analysis operations with 1 software deliverable for FY06.</p>							FY 05	FY 06	FY 07	Software Development / Systems Engineering (9421)		4.720	3.500	0.000	RDT&E Articles Quantity									
		FY 05	FY 06	FY 07																				
Software Development / Systems Engineering (9421)		4.720	3.500	0.000																				
RDT&E Articles Quantity																								
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;"></th> <th style="width:15%;">FY 05</th> <th style="width:15%;">FY 06</th> <th style="width:15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Cover and Comm &amp; Information Transfer (9429)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td style="text-align: center;">0.968</td> <td style="text-align: center;">0.500</td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b>FY05:</b> Covert Communications required for operational utilization.</p>							FY 05	FY 06	FY 07	Cover and Comm & Information Transfer (9429)					Accomplishments/Effort/Subtotal Cost		0.968	0.500		RDT&E Articles Quantity				
		FY 05	FY 06	FY 07																				
Cover and Comm & Information Transfer (9429)																								
Accomplishments/Effort/Subtotal Cost		0.968	0.500																					
RDT&E Articles Quantity																								
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;"></th> <th style="width:15%;">FY 05</th> <th style="width:15%;">FY 06</th> <th style="width:15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Navy Multiband Terminal (NMT) (9889)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td></td> <td style="text-align: center;">2.000</td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b>FY06:</b> Supports hardware and software prototype development efforts.</p>							FY 05	FY 06	FY 07	Navy Multiband Terminal (NMT) (9889)					Accomplishments/Effort/Subtotal Cost			2.000		RDT&E Articles Quantity				
		FY 05	FY 06	FY 07																				
Navy Multiband Terminal (NMT) (9889)																								
Accomplishments/Effort/Subtotal Cost			2.000																					
RDT&E Articles Quantity																								

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>				R-1 ITEM NOMENCLATURE 0303140N Information Systems Security Program (ISSP)			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	25.696	21.569	23.037	28.535	33.100	31.316	32.601
0734 Information Systems Security	15.799	18.196	21.038	26.347	30.955	29.119	30.371
0734 Communications Security	2.089	2.073	1.999	2.188	2.145	2.197	2.230
9999 Congressional Plus Up	7.808	1.300					
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 information, telecommunications, and information systems from hostile exploitation and attack. The 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 DOD 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 US 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.

(U) The interconnectivity of Naval networks, connections to the public information infrastructure, and their use in modern Naval and Joint warfighting 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. No longer can information security divorce the information infrastructure.

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2, RD TEN Budget Item Justification

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY BA-7</b>	R-1 ITEM NOMENCLATURE 0303140N Information Systems Security Program (ISSP)	
<p>(U) The Navy ISSP RDT&amp;E program works to provide the Navy with these essential 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. The goal of all ISSP RDT&amp;E activities is to produce the best USN operational system that can meet the certification and accreditation requirements outlined in Department of Defense (DOD) Instruction 5200.40 (new DODI 85xx series pending). Modeling DOD and commercial information and telecommunications systems evolution (rather than being one-time developments), the ISSP RDT&amp;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.</p> <p>(U) All ISSP RDT&amp;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 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 Standards Organization (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&amp;E program complies with the Joint Technical Architecture. The FORCEnet architecture and standards documents reflects this emphasis on interoperable standards.</p> <p>(U) The interconnection of FORCEnet into the DoD Global Information Grid (GIG) requires all ISSP RDT&amp;E activities to adopt a minimum standard of "best commercial IA practice." The ISSP RDT&amp;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&amp;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.</p> <p>(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 USC Chapter 25 Sec 1452, and the ISSP cryptographic RDT&amp;E program is the implementation of requirements in Executive Orders 12333 and 12958 and National Security Decision Directive 145.</p>		

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2, RD TEN Budget Item Justification

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>		0303140N Information Systems Security Program (ISSP)		
<b>(U) B. PROGRAM CHANGE SUMMARY:</b>				
(U) Funding:		FY 2005	FY 2006	FY 2007
FY 06 President's Budget:		26.511	28.660	33.490
FY 07 President's Budget Submit:		25.696	21.569	23.037
Total Adjustments		-0.815	-7.091	-10.453
Summary of Adjustments				
FORCenet Information Assurance (IA) Management Tools		0	0	-603
Contract Support Reduction		0	0	-1392
Information Systems Security Program (ISSP) Adjustment		0	0	-8400
NWCF Civpers Efficiencies		0	0	-211
Small Business Innovation Research (SBIR) Tax		-288	0	0
Nuclear Physical Security (OSD-09)		5	0	0
Inflation Adjustment		0	0	146
CIVPERS Pay Raise Rate Changes		0	0	7
Sec. 8125: Revised Economic Assumptions		0	-131	0
Congressional Reduction in base program		0	-7960	0
Congressional Add		0	1300	0
Congressional Action 1% Reduction		0	-300	0
Department of Energy Transfer		-21	0	0
Execution Realignments by Fund Holder		-511	0	0
Subtotal		-815	-7,091	-10,453
(U) Schedule:				
(U) Technical:				
N/A.				

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>																	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>				<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0303140N Information Systems Security Program (ISSP)																			
<p><b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2010</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2011</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">OPN 3415 Info Sys Security Program (ISSP)</td> <td style="text-align: right; padding: 5px;">91.924</td> <td style="text-align: right; padding: 5px;">97.478</td> <td style="text-align: right; padding: 5px;">101.749</td> <td style="text-align: right; padding: 5px;">113.839</td> <td style="text-align: right; padding: 5px;">132.029</td> <td style="text-align: right; padding: 5px;">156.804</td> <td style="text-align: right; padding: 5px;">159.159</td> </tr> </tbody> </table> <p><b>(U) D. ACQUISITION STRATEGY: *</b></p> <p><b>EKMS Phase V-</b> The Navy's ISSP EKMS program is linked to NSA's strategy in implementing EKMS in evolutionary phases and migrating to Key Management Initiative (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 Common Increment 2 (CI-2). KMI is currently a Pre-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&amp;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 the modification of the Navy EKMS Net Key Server. PEO C4I &amp; Space/PMW160 is collaborating with Naval Research Lab (NRL) to integrate COTS/GOTS devices into the Navy architecture to be compatible with Phase 5 and KMI architectures. 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. PMW160 procures National Security Agency (NSA) certified COTS/GOTS devices to support Navy requirements. The EKMS Phase V program will utilize existing competitively awarded NSA and SSC 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 ASN/RDA policies to reduced cost and the streamline the integration, installation, logistics and training efforts.</p> <p><b>Crypto Modernization (KW-46 Replacement)-</b>The KW-46 is a device that performs on-line decryption of digital messages, record, and data traffic over the broadcast system at data rates from 50 to 9,600 bits per second (BPS) that processes information up to and including TOP SECRET. The KWR-46 is used primarily on ships and submarines while the KWT-46 is located exclusively on shore sites, consisting of the KWT-46 transmitter and the KWR-46 receiver, <b>which are no longer in production</b>. The PMW 160 is also evaluating acquisition development replacements of the KG-45, KL-51, KG-68B cryptographic devices per the UCD effort. Navy is currently refining the requirement specs, preparing formal Analysis of Alternatives, Request For Information (RFI's), and LCEE's to be completed in FY 06 and the plan is to competitively award the development contract by 1Q FY07.</p> <p><b>Crypto Modernization (Universal Crypto Device)-</b> Navy is currently refining the requirement specs, preparing formal Analysis of Alternatives, Request For Information (RFI's), and LCEE's to be completed in FY 06 and the plan is to competitively award the development contract by 1Q FY08. The evaluation of requirements of Crypto Modernization (Thorton-KEESEE) cryptographic system will also necessitate preparation of formal AOA, RFI within FY06 &amp; FY07.</p> <p><b>* Not required for Budget Activities 1,2,3, and 6</b></p>								<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>																
OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159																

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Exhibit R-2, RDTEN Budget Item Justification

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 0734 Information Systems Security			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>15.799</b>	<b>18.196</b>	<b>21.038</b>	<b>26.347</b>	<b>30.955</b>	<b>29.119</b>	<b>30.371</b>	
RDT&E Articles Qty								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Information Systems Security Program (ISSP), RDT&E provides Information Assurance (IA) solutions for the United 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 (QoA) 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) communities. ISSP RDT&E developed systems must dynamically change the Navy's current assurance vector, 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 Naval Information Warfare Activity (NIWA).

(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 DoD GIG Capabilities Requirements Document (CRD) requirement for the development of Content Based Encryption (CBE) continuing in FY 06 -11.

(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 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 Computer 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 base efforts include developing or applying: (1) new secure voice prototypes; (2) technology for a new family of programmable COMSEC and TRANSEC modules; (3) security appliances and software for switched and routed networks; (4) technology to interconnect networks of dissimilar classification, known as Cross Domain Security; (5) techniques for assuring code and data residing in and transiting the Navy's computing base and information store; and (6) 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 5239.1B.

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<p>(U) The ISSP RDT&amp;E 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 (COTS)/Non-developmental Item (NDI) 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).</p> <p>(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:</p> <p>(U) Under the Navy Secure Voice (NSV) program, ISSP RDT&amp;E assesses technology to provide high grade, secure tactical and strategic voice connectivity.</p> <p>(U) Under the Navy Cryptographic Modernization Program, ISSP RDT&amp;E provides high assurance and other cryptographic technologies protecting information and telecommunication systems.</p> <p>(U) Under the Navy Security Management Infrastructure (SMI) program, ISSP RDT&amp;E develops, evaluates, and applies new emerging technology and enhanced capabilities to the Electronic Key Management System (EKMS) 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.</p> <p>(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, OCONUS Navy Enterprise Network (ONENet) , and the Integrated Shipboard Network Systems (ISNS), along with constituent systems such as Advanced Digital Network System (ADNS), Global Command and Control System - Maritime (GCCS-M). It includes activities to:</p> <ul style="list-style-type: none"> <li>• Ensure that USN telecommunications and networks follow a consistent architecture and are protected against denial of service.</li> <li>• Ensure that all data within the USN Enterprise is protected in accordance with its classification and mission criticality, as required by law.</li> <li>• Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event.</li> <li>• Support the USN Computer Network Defense (CND) Service Provider Enabler by providing IA response to Information Operation Conditions (INFOCONS).</li> <li>• Defend against the unauthorized modification or disclosure of data sent outside enclave boundaries.</li> <li>• Provide a risk-managed means of selectively allowing essential information to flow across the enclave boundary.</li> <li>• Provide strong authentication of users sending or receiving information from outside their enclave.</li> <li>• Defend against the unauthorized use of a host or application, particularly operating systems.</li> <li>• Maintain configuration management of all hosts to track all patches and system configuration changes.</li> <li>• Ensure adequate defenses against subversive acts of trusted people and systems, both internal and external.</li> </ul>		

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Information Systems Security
<ul style="list-style-type: none"><li>• Provide a cryptographic infrastructure that supports key, privilege and certificate management; and that enables positive identification of individuals utilizing network services.</li><li>• 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.</li></ul> <p>(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.</p> <p>(U) METRICS: Earned Value Management (EVM) is used for metrics reporting and risk management.</p>		

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

	FY 05	FY 06	FY 07
Computer Network Defense (CND)	2.834	5.009	5.592
RDT&E Articles Quantity			

FY05 Plans include:

\$2,834 - Integrated security products and new technologies for robust Computer Network Defense (CND) for both shore and afloat installation. Effort focused on CND system development to address recurring exploits against forward deployed units; to integrate CND management tools into a cohesive suite for unit level defense. Development effort to extend the security boundaries beyond the NOC's to enforce adaptive network security based on changing INFOCON policies, operator needs, and operational environments were evaluated. Provided system security engineering design, modeling, technical evaluations, testing, and validation to formulate Commercial and Government product infusion for CND enhancement. Developed advanced IA tool kits to assist information system security managers to maintain computer network security posture and provide for vulnerability self assessment and remediation verification. Assessed security systems to field capabilities to minimize the impact of the insider threat and to minimize the potential damage inflicted on information integrity or computer-network information systems. Enhanced CND with leading technologies to block attacks with intrusion prevention management; to counter increasing threats posed by system vulnerabilities, malicious code, and malevolent insiders. Addressed user authorization and authentication techniques for system administration, remote user access, and enforce access controls on critical computer-network components. IA network components were reviewed for application on UNCLASSIFIED through SECRET application networks and coordination with host application requirements to provide the broadest support solution as possible.

FY 06 Plans include:

\$5,009 - Continue to integrate security products and new technologies for robust Computer Network Defense (CND) for both shore and afloat installation. Provide IA engineering design (+\$1.644M), evaluation, and testing techniques from end-to-end and information source-to-sink to satisfy the IA element of maintaining availability. Includes IA appliances, software, and implementation techniques for policies such as IAVA requirements. Begin development of a tier level management system (+\$2M) between Unit Level Ships and Global Enterprise Management for real-time display of security risk as: Computer-Network Threats, Vulnerabilities, and Critical System Security Performance. Begin development of a Global Enterprise Management system to integrate a secure means of hierarchically managing Network Operating Center security systems, Ship Security Monitors, and other Network Security Monitoring products. Begin development of enhanced fielded Security Management Tools (+\$1.365M) with new capabilities to support system configuration management and monitoring. Support development of online engineering support to access subject matter security system experts; automate security system IAVA distributions, web based information server, NOC site 'As Built' Configuration Data, and Emergency Restoration Files. Develop an IAVA verification assessment system to status Network Operation Center IAVA status for fielded security equipment.

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<p>FY 07 Plans include:            \$5,592 - Provide the broadest range of Information Assurance (IA) research and development support across Joint, Fleet, and ashore networks. Provide on-going security design engineering of new ships, aircraft, and submarines to ensure reduced manning and greater operational dependency on networks. Provide IA engineering design (+\$2.905M), evaluation, and testing techniques from end-to-end, through base-band networks, RF communications links, and information source-to-sink to satisfy the IA element of maintaining availability. Includes IA appliances, software, and implementation techniques for policies such as IAVA requirements, INFOCON response, and USN firewall policy. Provide continuous development of a tier level management system (+\$1.202M) between Unit Level Ships and Global Enterprise Management for real-time display of security risk. Continue the development of enhance fielded Security Management Tools (+\$0.970M) with new capabilities to support system configuration management and monitoring. Begin development of improved real-time computer-network security policy administration (+\$0.515M) with analytical tools to identify application or computer-network issues with operational compliance. Establish a management process to enforce common unit level fleet firewall policies across the Navy Network Enterprise using products/techniques to centrally manage and push security policies to controllable devices such as Firewalls, Intrusion Prevention Systems (IPS), and Filtering Routers at unit level ships and fleet Network Operation Centers.</p>		

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	FY 05	FY 06	FY 07
Crypto	3.780	4.627	5.402
RDT&E Articles Quantity			
<p><b>FY05 Plans Include:</b>                      \$3,780 - Provided sustained IA security system engineering support for the development, evaluation and integration of emerging cryptographic products/components and devices, including type-1 US only, allied and coalition, and commercial-off-the-shelf. Includes design, development, testing, and evaluation of link, network, session, data transfer devices, and associated equipments. Provided IA engineering support for the development of Crypto Modernization products and components KG-3X, KG-40AR, CTIC/CDH, IFF Mode 5, Link Encryption Family, Universal Crypto Device (UCD)/Expendable Crypto devices, and Next Generation COMSEC devices such as PEIP follow-on, Modern Legacy Crypto Solution, HAIPE and KW-46, KG-45, KL-51, KG-68B based on UCD development. Continued to provide the coordination of development efforts with the Information Systems Security Office at the National Security Agency. Continue to develop specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Continued to develop, model, test, and evaluated deployment of architectures supporting next-generation structures such as remote-keyed, gateways, "lights-out" facilities, and wireless devices. Includes architecture modeling, end-to-end security analysis, and integration cryptographic products into USN platform specific architecture. Provided continuous support for the development and integration of embedded cryptographic products.</p> <p><b>FY06 Plans Include:</b>                      \$4,627 - Provide for the integration of cryptographic products, including type-1 US only, allied and coalition, and commercial-off-the-shelf. Provide support of development efforts in coordination with the Information Systems Security Office, Joint Services, and the National Security Agency. Provide (+\$1.700M) specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Provide sustained IA engineering support for the development, integration, and installation of Crypto Modernization products including KG-3X, KG-40AR, CTIC/CDH, IFF Mode 5, Link Encryption Family, Universal Crypto Device (UCD)/Expendable Crypto devices, and Next Generation COMSEC devices such as: PEIP follow-on, Modern Legacy Crypto Solution, KIV-7M/KIV-19M Walburn and SAVILLE (+\$.797M), Thorton-KEESEE (+\$2.130M ) and KW-46, KG-45, KL-51, KG-68B (based on UCD development) sustainment/replacement. Additional efforts have to also focus on replacing NSA decertified products. Continue development and integration on the next generation network encryption devices, to include application and implementation of HAIPE in transformational architectures such as FORCEnet and JTRS WNW, and analysis of critical harmonization/integration solutions between modernized INE devices and Key Management, FNBDT and Wireless standards to ensure net-centric capability. Research potential uses of type-2 &amp; 3 for use in type-1 historical environments.</p> <p><b>FY07 Plans Include:</b>                      \$5,402 - Continue to provide cryptographic products, including type-1 US only, allied and coalition, and commercial-off-the-shelf. Provide consistent IA engineering support for the development and integration of Crypto Modernization (+\$2.377M) products including KG-3X, KG-40AR, CTIC/CDH, IFF Mode 5, Link Encryption Family, Universal Crypto Device (UCD)/Expendable Crypto devices, and Next Generation COMSEC devices such as: PEIP follow-on, KIV-19, KIV 7M, KG-194 (Walburn) (+\$.594M), Thorton-KEESEE (+\$2.431M ) and KW-46, KG-45, KL-51, KGV-68B (based on UCD development). Continue development and integration on the next generation network encryption devices, to include application and implementation of HAIPE in transformational architectures such as FORCEnet and JTRS WNW, and develop integration solutions for modernized INE devices and Key Management, FNBDT and Wireless capabilities. Continue to research and develop potential uses of type-2 &amp; 3 for use in type-1 historical environments.</p>			

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	FY 05	FY 06	FY 07
Information Assurance Readiness	0.298	0.000	0.270
RDT&E Articles Quantity			

FY05 Plans include:  
 \$298 - Provided systems security engineering support to all USN organizations in the certification and accreditation of emerging information systems. Provided Antivirus Tools Support and Capabilities for R&D support systems and software to meet Navy Anti-Virus requirements. Completed the development and integration of tools for automatic updating and incorporation of EKMS certification and accreditation information. Completed integrations of Perl-based custom sniffer script to monitor network traffic the following into the INFOSEC Web site. Continue to update and maintain the USN infrastructure security policy. Continued follow-on development and integration of NIC Web single point-of-presence website for POR compliance reporting, fleet information and patch data, initially addressing PEO-C4I POR/CMS systems and adding other Navy SYSCOMs and PEOs.

FY06 N/A

FY07 Plans include:  
 \$270 - Continue to provide systems security engineering support to all USN organizations in the certification and accreditation of information systems. A primary responsibility is the C&A for the Navy Marine Corps Intranet and various coalition networks. Provide continued Antivirus Tools support and capabilities for R&D support systems and software to meet Navy Anti-Virus requirements.

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	FY 05	FY 06	FY 07	
Secure Voice	0.895	0.624	0.700	
RDT&E Articles Quantity				

FY05 Plans Include:  
 \$895 - Continued development and integration efforts of Secure Communication Interoperability Protocol (SCIP, formally Future Narrowband Digital Terminal (FNBDT)) standard compression to provide the Sea-Shore and Sea-Shore-Sea Secure Voice communications. Develop survey for collecting secure voice mission and operational requirements from users for a new COMSEC device that will replace various legacy voice devices. Develop and test the Tactical Shore Gateway (TSG) to provide interoperability between tactical secure voice equipment (i.e., KY-57 KY58, KY-68, KY99A, KY-100 and ANDVT) and STE/FNBDT devices as well as secure conference capabilities. Researching development of a Secure Voice/Data Terminal (e.g., Universal Voice Terminal (UVT) and Personal Secure Telephone (PST)) that uses new variable data rate encryption and voice algorithms (Secure Voice Core Technology) and supports low bandwidth secure voice and data applications over High Frequency (HF), Ultra High Frequency (UHF), Extreme High Frequency (EHF), and Super High Frequency (SHF) designated Radio Frequency (RF) mediums. Develop the first draft version of 21st Century Secure Voice Architecture (i.e., Naval Advanced Secure Voice Architecture, NASVA) to establish a baseline for synchronized secure voice evolution in net-centric environment.

FY06 Plans Include:  
 \$624 - Continue development of the 21st Century Secure Voice Architecture (NASVA) to provide a transition to bridge from channel-centric to net-centric Secure Voice capability, guide the next generation of Secure Voice and facilitate decision making on systems to be refreshed, retired and/or replaced. Continue development of the variable data rate voice algorithm (a component of Secure Voice Core Technology). Research and develop a compression technique (SCIP IWF or gateway) to allow SCIP signaling be transmitted off-ship for underway submarines.

FY07 Plans Include:  
 \$700 - Complete development and integration test of submarine SCIP IWF/gateway to provide off-ship secure communication capabilities while underway. Begin development and test a SCIP IWF to provide off-ship secure voice communications to underway Military Sealift Command ships and Coast Guards ships. Complete development of the Variable Data Rate Voice Encoder and its baseline interface software. Initiate 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 (UVT and PST).

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	FY 05	FY 06	FY 07
Cross Domain Solutions (CDS)	0.905	1.296	0.712
RDT&E Articles Quantity			

Note: Multiple Security Level (MSL) nomenclature changed to Cross Domain Solutions (CDS)

**FY05 Plans include:**

\$905 - Continued to provide systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation. Continued to examine, evaluate and analyze multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Continue to develop and integrate MSL/CDS prototype architecture at NOC facilities. Continued development of Block One CDS solution as a follow-on to Block Zero. The Block One CDS solution focused on providing a robust coalition interoperability using Multi-Level Thin Client (MLTC), secure guarding devices and afloat coalition network systems.

**FY06 Plans include:**

\$1,296 - Provide systems security engineering for the development, testing, and evaluation of complex multi-level security solutions, including complicated evaluations involving allied and coalition participation. Analyze, evaluate and examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Develop and integrate MSL/CDS prototype architecture at NOC facilities. Continue development and integration of Block One CDS solutions to focus on providing a robust coalition interoperability using Multi-Level Thin Client (MLTC), secure guarding devices and afloat coalition network systems. Begin development of follow-on Block Two CDS upgrade to reduce footprint and provide reconfigurable, enabling IT network architecture for fleet combatants as well as ashore command centers that support data transfer service at multiple security levels.

**FY07 Plans include:**

\$712 - Continue to provide systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation. Examine and evaluate multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Develop and integrate MSL/CDS prototype architecture at NOC facilities.

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RDTEN Budget Item Justification



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Information Systems Security
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	FY 05	FY 06	FY 07
Key Management Infrastructure	5.310	3.869	4.734
RDT&E Articles Quantity			

**FY05 Plans include:**

\$5,310 - Began security and functionality testing and evaluation of PKI tokens, readers and middleware for the SIPRNET. Began prototyping and certification/accreditation of the Navy's Key management system. Began Common User Application Software (CUAS), Data Mgmt Device (DMD) and Simple Key Loader (SKL) development and integration. Begin and complete Mode 5 Identify Friend or Foe (IFF) (Time of Day) design and development. Began development and integration of Future fill device. Provided engineering design evolution for the supporting key management infrastructure, to include: Electronic Key management System (EKMS Phase IV for Tier 0,1,2,3), Defense Messaging System (DMS) specific products, DOD Public Key Infrastructure (DOD-PKI), and additional Certificate Management Infrastructures (CMI). Performed design, evaluation, integration, and test of key-related platforms, such as smart cards, authentication mechanisms and biometric devices. Provided systems security engineering, test, evaluation, and development program support for organizations utilizing cryptographic equipments and associated keying systems. Completed design and development of the Certificate Authorization Workstation (CAW) regionalization strategy and begin to implement and integrate the CAW Remote Key/Re-key capability.

**FY06 Plans include:**

\$3,869- Continue design and development of the KMI local management workstation. Begin EKMS Phase V to include development and implementation of an extended , networked architecture (key distribution over SIPRNET) to improve distribution and reliability for deployed forces, modernized key processors, common user application software and data transfer devices. Continue to develop and integrate Online Certificate Status Protocol. Continue development and integration of Future fill device. Begin security and functionality testing and evaluation of (OCSP) architecture for the SIPRNet. Continue security and functionality testing and evaluation of PKI tokens, readers and middleware for the SIPRNET. Complete prototyping and certification/accreditation of the Navy's Key management system. Begin Common User Application Software (CUAS), Data Mgmt Device (DMD) and Simple Key Loader (SKL) development and integration. Continue CUAS, DMD and SKL development and integration. Conduct requirements definition for the End IA Unit (EIAU) Encryption device. Begin Wireless Key Fill technology design and development. Begin the Key Loading and Initialization Facility (KLIF) design and development.

**FY07 Plans include:**

\$4,734 - Complete security and functionality testing and evaluation of PKI tokens, readers and middleware for the SIPRNET. Continue to streamline the 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. Continue EKMS Phase V to include development and implementation of an extended , networked architecture (key distribution over SIPRNET) to improve distribution and reliability for deployed forces, modernized key processors, common user application software and data transfer devices. Continue to develop and integrate Online Certificate Status Protocol. Complete Wireless Key Fill technology design and development . Complete development and integration of Online Certificate Status Protocol. Complete DMS migration to PKI. Complete the initial desian for EIAU managemnt. Complete the Key Loading and Initialization Facilitv desian and development.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Information Systems Security

	FY 05	FY 06	FY 07
Emerging Technology	1.777	2.771	3.628
RDT&E Articles Quantity			

**FY05 Plans include:**

\$1,777 - Provide sustained IA security engineering and technical expertise for the transition, application and integration of new technologies to Navy Information Assurance challenges. Provided IA R&D support for specific programs that included the following projects: (1) Secure Network Communications Including Coalition Applications, (2) Recognition and Prevention of Network Intrusions, (3) Convenient Wireless Applications with Adequate Security, (4) Synergistic Operation of IA and IO Functions, (5) Improved Access Control Using Biometrics, to include applications of commercially available biometrics technology to Navy logical and physical access problems, as well as applications that are now considered ready for larger scale implementation, and (6) Rapid Transition of Technology to the Fleet, in support of Fleet Battle Experiments, CNDID, TF WEB, Teleport, SCN and other transition opportunities. Completed initial concept refinement for INHIBT System that will proactively analyze transactions at the operating system level for normal behavior and initiate workstation and network survival systems for anomalous activity. Continued AWC technology project with proof of concept demonstration and initial production development. Released v2.0 of NESSO which will be a full featured, open source, production quality product including an enhanced Java based Identity Server, completed implementation of Biometric Authentication, and the Liberty Alliance Federated Identity framework.

**FY 06 Plans include:**

\$2,771 - Continue to provide security systems engineering (+\$1.053M) support for the transition and application of new technologies to Navy Information Assurance challenges. Continue development of open source Single Sign-On solution (+\$.610M) by incrementally adding new features/enhancements for federated identity, Public Key Infrastructure (PKI), Role Based Access Control (RBAC), Common Access Card (CAC) and Next Generation Access Systems. Provide standardized security design and installation baselines to ensure enhancements of configuration management. Develop and integrate IA Components into programs such as FORCenet, Computer Network Defense in Depth (CND-ID) Strategy, Transformational Communication (TC), Global Information Grid Enterprise Services (GIG-ES), Secure Voice over Internet Protocol (SVoIP), and Horizontal Fusion. Begin development of INHIBT system (+\$.693M) that will proactively analyze transactions at the operating system level for normal behavior and initiate workstation and network survival systems for anomalous activity. Develop Next Generation Access Systems solutions (+\$.138M) to provide improved security for access to computers, networks, and sensitive spaces or buildings. Seamless integration with CAC is necessary. Provide IA engineering (+\$.277M) for development of Wireless Networks and PDA security readiness of Naval wireless networks and mobile computing devices .

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RDTEN Budget Item Justification

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Information Systems Security
<p>FY 07 Plans include:            \$3,628 - Provide security systems engineering (+\$1.524M) support for the transition and application of new technologies to Navy Information Assurance challenges. Continue technology development and begin transition of open source Single Sign-On solutions (+\$.617M) for federated identity, Public Key Infrastructure (PKI), Role Based Access Control (RBAC), Common Access Card (CAC) and Next Generation Access Systems across multiple trusted domains. Provide standardized security design and installation baselines to ensure enhancements of configuration management. Provide security systems engineering to develop and integrate IA Components, technologies and solutions into programs such as FORCEnet, CND-ID Strategy, TC, GIG-ES, SVoIP and Horizontal Fusion. Begin integration of INHIBT system (+\$.980M) that will proactively analyze transactions at the operating system level for normal behavior and initiate workstation and network survival systems for anomalous activity. Continue to develop and begin integration of Next Generation Access Systems solutions (+\$0.181M) to provide improved security for access to computers, networks, and sensitive spaces or buildings. Seamless integration with CAC is necessary. Provide IA engineering for development of Wireless Networks and PDA security (+\$0.326M) readiness of Naval wireless networks and mobile computing devices, continue to evaluate products for security issues and develop guidance and procedures.</p>		

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RDTEN Budget Item Justification

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Information Systems Security
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**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159

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

**EKMS Phase V-** The Navy's ISSP EKMS program is linked to NSA's strategy in implementing EKMS in evolutionary phases and migrating to Key Management Initiative (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 Common Increment 2 (CI-2). KMI is currently a Pre-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 the modification of the Navy EKMS Net Key Server. PEO C4I & Space/PMW160 is collaborating with Naval Research Lab (NRL) to integrate COTS/GOTS devices into the Navy architecture to be compatible with Phase 5 and KMI architectures. 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. PMW160 procures National Security Agency (NSA) certified COTS/GOTS devices to support Navy requirements. The EKMS Phase V program will utilize existing competitively awarded NSA and SSC 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 ASN/RDA policies to reduced cost and the streamline the integration, installation, logistics and training efforts.

**Crypto Modernization (KW-46 Replacement)-**The KW-46 is a device that performs on-line decryption of digital messages, record, and data traffic over the broadcast system at data rates from 50 to 9,600 bits per second (BPS) that processes information up to and including TOP SECRET. The KWR-46 is used primarily on ships and submarines while the KWT-46 is located exclusively on shore sites, consisting of the KWT-46 transmitter and the KWR-46 receiver, **which are no longer in production**. The PMW 160 is also evaluating acquisition development replacements of the KG-45, KL-51, KG-68B cryptographic devices per the UCD effort. Navy is currently refining the requirement specs, preparing formal Analysis of Alternatives, Request For Information (RFI's), and LCEE's to be completed in FY 06 and the plan is to competitively award the development contract by 1Q FY07.

**Crypto Modernization (Universal Crypto Device)-** Navy is currently refining the requirement specs, preparing formal Analysis of Alternatives, Request For Information (RFI's), and LCEE's to be completed in FY 06 and the plan is to competitively award the development contract by 1Q FY08. The evaluation of requirements of Crypto Modernization (Thorton-KEESEE) cryptographic system will also necessitate preparation of formal AOA, RFI within FY06 & FY07.

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

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0303140N Information Systems Security Program (ISSP)			0734 Information Systems Security						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	VIASAT, San Diego, CA	7.282								7.282	7.282
Primary Hardware Development	C/MIPR	MITRE, San Diego, CA	5.522								5.522	5.522
Primary Hardware Development	C/CPAF	TBD	6.771	1.354	01/05	1.027	01/06	1.291	01/07	Continuing	Continuing	
Primary Hardware Development	C/VAR	Various	65.313	2.457	VAR	2.555	VAR	2.965	VAR	Continuing	Continuing	
Systems Engineering	C/VAR	Various	47.391	7.787	VAR	9.122	VAR	10.539	VAR	Continuing	Continuing	
Subtotal Product Development			132.279	11.598		12.704		14.795		Continuing	Continuing	12.804
Remarks:												
Software Development	CPAF	SAIC, San Diego, CA	32.877							0.000	32.877	42.590
Software Development	C/WX	NRL, Washington D.C.	0.145	0.640	10/04	1.013	10/05	1.233	10/06	Continuing	Continuing	
Subtotal Support			33.022	0.640		1.013		1.233		Continuing	Continuing	42.590
Remarks: SAIC target Value of contract includes other service's funding (ARMY RDT&E).												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			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 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	Various	16.337	3.360	Various	3.534	Various	3.997	Various	Continuing	Continuing	Continuing
Subtotal T&E			16.337	3.360		3.534		3.997		Continuing	Continuing	
Remarks:												
Program Management Support	VAR	Various	4.601	0.201	Various	0.945	Various	1.013	Various	Continuing	Continuing	Continuing
Subtotal Management			4.601	0.201		0.945		1.013		Continuing	Continuing	
Remarks:												
Total Cost			186.239	15.799		18.196		21.038		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																DATE: <b>February 2006</b>											
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME															
<b>RDTE, N / BA-7</b>				0303140N Information Systems Security Program (ISSP)								0734 Information Systems Security															
2005				2006				2007				2008				2009				2010				2011			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition *</b> <b>Milestones</b> Crypto Mod KW-46 M/S B (UCD) Crypto Mod KW-46 CDR (UCD) EKMS Phase V IOC EKMS Phase V FOC CND Inc 1 CPD CND RFP Released CND Inc 1 M/S C CND Inc 1 IOC CDS-M Inc 1 M/S C CDS-M Inc 2 M/S B KG-3X Inc 1 M/S C KG-3X Inc 2 M/S C KMI M/S C KMI CI-2 IOC KMI CI-2 FOC																											
<b>Test &amp; Evaluation</b> <b>Milestones</b> <b>Development Test</b> EKMS Phase V Dev Test EKMS Phase V Qual Test KMI Pilots for CI-2 Spiral 1 KIV 7M Testing KG-40AR IV/V Test KG-40AR NSA Certification <b>Operational Test</b> KW-46 Full Rate Production Op Test (UCD) EKMS Phase V Op Test																											
<b>Production Milestones</b> KIV 7M Production KIV 7M Installs begin KG-40AR PM Prod Decision Rev/Award KG-3X Inc 1 First Articles KMI Client/AKP FRP CND Inc 1 LRIP Installs Begin CND Inc 1 FRP Deliveries EKMS Phase V S/W Delivery LCMS 5.1 KW-46 LRIP Deliveries (UCD)																											
EKMS Phase V IOC (2005 Q2) CND Inc 1 CPD (2006 Q1) CND RFP Released (2006 Q1) KG-3X Inc 1 M/S C (2006 Q2) KW-46 M/S B (UCD) (2007 Q1) CND Inc 1 M/S C (2008 Q1) KG-3X Inc 2 M/S (2008 Q2) KMI M/S C (2008 Q3) KW-46 CDR (UCD) (2009 Q1) EKMS Phase V FOC (2009 Q1) CDS Inc 1 M/S C (2009 Q2) CND Inc 1 IOC (2010 Q1) CDS Inc 2 M/S B (2010 Q2) KMI CI-2 IOC (2010 Q3) KMI CI-2 FOC (2011 Q1)																											
EKMS Phase V Dev Test (2005 Q2) EKMS Phase V Qual Test (2007 Q2) KIV 7M Testing (2006 Q1) KG-40AR IV/V Test (2006 Q2) KG-40AR NSA Cert (2006 Q3) KW-46 FRP OP Test (UCD) (2009 Q3)																											
KIV 7M Production (2006 Q2) KIV 7M Installs begin (2007 Q1) KG-40AR Decision Rev/Award (2006 Q3) KG-3X Inc 1 First (2006 Q3) KMI Client/AKP FRP (2008 Q2) CND Inc 1 LRIP Installs (2008 Q3) CND Inc 1 FRP (2009 Q2)																											
EKMS Phase V S/W LCMS 5.1 Delivery (2007 Q2) KW-46 LRIP Deliveries (UCD) (2010 Q3)																											

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\* Note: MLCS Deliveries support the MLCS Capability Certifications

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>					PROJECT NUMBER AND NAME 0734 Information Systems Security		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
EKMS Phase V IOC	1Q						
EKMS Phase V FOC					1Q		
Crypto Modernization KW-46 M/S B (UCD)			4Q				
Crypto Modernization KW-46 CDR (UCD)					1Q		
CND Inc 1 CPD		2Q					
CND RFP Released		3Q					
CND Inc 1 M/S C				2Q			
CND Inc 1 IOC						3Q	
CDS-M Inc 1 M/S C					1Q		
CDS-M Inc 2 M/S B						2Q	
KG-3X Inc 1 M/S C		3Q					
KG-3X Inc 2 M/S C				4Q			
KMI M/S C				4Q			
KMI CI-2 IOC						3Q	
KMI CI-2 FOC							3Q
<b>Developmental Test</b>							
EKMS Phase V Developmental Test	3Q						
EKMS Phase V Qualification Test			2Q				
KMI Pilots for CI-2 Spiral 1					2Q		
KIV 7M Testing		2Q					
KG-40AR IV/V Test		4Q					
KG-40AR NSA Certification			1Q				
<b>Operational Test</b>							
EKMS Phase V Operational Test			4Q				
Crypto Modernization KW-46 FRP Operational Test (UCD)					4Q-	Cont'd-Q4	
<b>Production Milestones</b>							
KIV 7M Production		4Q					
KIV 7M Installs begin			4Q				
KG-40AR PM Prod Decision Rev/Award			1Q				
KG-3X Inc 1 First Articles			1Q				
KMI Client/AKP FRP					1Q		
CND Inc 1 LRIP Installs Begin					2Q		
CND Inc 1 FRP					4Q		
<b>Deliveries</b>							
EKMS Phase V S/W Delivery LCMS 5.1			3Q				
Crypto Mod KW-46 LRIP Deliveries (UCD)						4Q-	Cont'd-Q4

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Exhibit R-4, Schedule Detail

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 0734 Communications Security			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Project Cost	<b>2.089</b>	<b>2.073</b>	<b>1.999</b>	<b>2.188</b>	<b>2.145</b>	<b>2.197</b>	<b>2.230</b>		
RDT&E Articles Qty									
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> 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.</p> <p>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. No longer can information security divorce the information infrastructure. The ISSP enables the Navy's war fighter to trust in the availability, integrity, authentication, privacy, and non-repudiation of information.</p> <p>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 battlespace 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 battlespace. 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.</p> <p>A Memorandum of Agreement (MOA) was signed in FY01 between the Office of Naval Research Department of Information, Electronics &amp; Surveillance (ONR31) and Office of the Chief of Naval Operations, Directorate of Space, Information Warfare, Command and Control, Information Warfare Division (N64), and provides for interagency coordination with ONR, N71, and PEO C4I and Space (PMW160) in pursuance of this effort.</p> <p>This Project under Program Element 0303140N is a restructuring with the transfer of responsibility from SPAWAR to ONR in FY 2003 for prototyping IA concepts.</p> <p>JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing,</p>									

R-1 SHOPPING LIST - Item No. 196

**Exhibit R-2a, RDTEN Budget Item Justification**

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 0734 Communications Security

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

	FY 05	FY 06	FY 07
Software and Systems Research	2.089	2.073	1.999
RDT&E Articles Quantity			

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 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 interoperability 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification						DATE:	
						<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N / BA-7</b>		0303140N Information Systems Security Program (ISSP)			0734 Communications Security		
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>							
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159
<b>(U) D. ACQUISITION STRATEGY: *</b>							
N/A.							
* Not required for Budget Activities 1,2,3, and 6							

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RDTE Budget Item Justification

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**CLASSIFICATION**

Exhibit R-3, Code Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/ BA-7</b>			PROGRAM ELEMENT 0303140N/ INFORMATION SYSTEMS SECURITY PROGRAM				PROJECT NUMBER AND NAME R0734 COMMUNICATIONS SECURITY R&D (INFORMATION ASSURANCE)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Software Development	C/WX	NRL, Washi NRL, Washing	0.000	2.089	10/05	2.073	10/06	1.999	10/07	Continuing	Continuing	
Subtotal Support			0.000	2.089		2.073		1.999		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION**

Exhibit R-3, Code Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E,N/ BA-7			0303140N/ INFORMATION SYSTEMS SECURITY PROGRAM				R0734 COMMUNICATIONS SECURITY R&D (INFORMATION ASSURANCE)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Program Management Support											0.000	
Subtotal Management			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Total Cost			0.000	2.089		2.073		1.999		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME 9999 Congressional Plus Up			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			<b>7.808</b>	<b>1.300</b>					
RDT&E Articles Qty									
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> Congressional plus-up for Navy's SECURE Kit . Develop systems that will allow a user at a single workstation seat to access multiple security networks based on the user's access clearance and need to know. The web architecture-based solution will allow the user to access this information at the Navy enterprise level and eliminates 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 by the FORCENet vision document, we have developed a component-based architecture called SECUREkit. SECUREkit will provide the necessary components to meet the Naval warfighter needs, which can be summarized as three.</p> <p>(1) Single points of entry anywhere on the network to any place on the network with complete transparency to the tiers of enterprise services.</p> <p>(2) Access from that single point to all appropriate security domains.</p> <p>(3) Provide the ability to dynamically, or on the fly, reconfigure the Multi-Level System (MLS) enterprise.</p> <p>The evolutionary the component architecture of the SECUREkit architecture is being accomplished through partnering efforts with the National Security Agency (NSA) and the PEO(C4I&amp;Space). This architecture is made up of trusted servers, trusted pathways, and trusted clients. The goal of SECUREkit will be to make available to warfighters in the Global Information Grid Enterprise Services (GIG ES) all components that are certified at Evaluated Assurance Level 6 (EAL6).</p> <p>Congressional plus-up for the Collaborative Information Warfare Network (CIWN). The CIWN will provide an architecture by which other networks (Marine Corps (MC), Navy, Homeland Security (HLS), Health Services Department (HSD), National Guard Bureau ( NGB), Federal Bureau of Investigation ( FBI ) , can be integrated and interoperate securely. The CIWN architecture provides the interfaces by which agencies with specific network requirements can maintain their networks in a distributed fashion and interoperate and share critical infrastructure data and information. This CIWN architecture enables a distributed network solution that reduces the risk of attack on a single national network. CIWN includes the network architecture by which the CIPCs and CIPC partners and subscribers interoperate and conduct information operations (to include data and information sharing, knowledge engineering, and data and infrastructure protections). Embedded within the CIWN architecture is the National Technology Assessment Network (NTAN). The NTAN is a virtual network designed to provide a virtual environment in which technologies can be assessed by CIPC partners for inclusion in their IT Infrastructures without the building the additional infrastructure required to support its assessment. In addition, the NTAN provides an environment in which Federal, State, Local, Industry and Academia can assess existing and future technologies for compatibility and interoperability within the CIWN.</p> <p>U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.</p>									

R-1 SHOPPING LIST - Item No. 196

**Exhibit R-2a, RDTEN Budget Item Justification**

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME 9999 Congressional Plus Up
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**(U) B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
(9430) SECUREKit	4.434	1.300	
RDT&E Articles Quantity			

FY05 Plans include:

\$4,434 - Completed the initial design of network access device that includes multi-factor identification, identity management process, and inline encryption engine. The design is currently still a work in progress but may be either internal PCI card or and external black box device. These components are based on open architecture and designed for enabling web-based enterprise services in the Department of the Navy and coalition participants. These components provide for a trusted path, or high assurance transactions, between servers, clients, and other resources in the FORCEnet enterprise.

FY06 Plans include:

\$1,300 - Further refine design of authorization software to include integration with authentication service, Navy Enterprise Single Sign-On (NESSO). This year the program will work to integrate the product within test networks and work with the user community for feedback using a well defined authorization language approach. The final design, still a work in progress, is based on open architecture and designed for enabling web-based enterprise services in the Department of the Navy and coalition participants. The software components provide authorization services for the Global Information Grid (GIG) and for the FORCEnet enterprise.

	FY 05	FY 06	FY 07
(9647 CIWN)	3.374		
RDT&E Articles Quantity			

FY05 Accomplishment include:

\$3,374 - The FY 05 RDT&E Congressional increase provided for the development of the Collaborative Information Warfare Network architecture and publish a guide that frames processes to both Federal and Military organizations for the monitoring, detection, protection and remediation of potential threats to the operation of the nations' critical infrastructure. The CIWN network architecture establishes a collaborative environment linking center's in four regional geographic areas and in Canada and Mexico.

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RDTEN Budget Item Justification

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>																									
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-7</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0303140N Information Systems Security Program (ISSP)			<b>PROJECT NUMBER AND NAME</b> 9999 Congressional Plus Up																										
<p><b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2010</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2011</u></th> </tr> </thead> <tbody> <tr> <td>OPN 3415 Info Sys Security Program (ISSP)</td> <td style="text-align: right;">91.924</td> <td style="text-align: right;">97.478</td> <td style="text-align: right;">101.749</td> <td style="text-align: right;">113.839</td> <td style="text-align: right;">132.029</td> <td style="text-align: right;">156.804</td> <td style="text-align: right;">159.159</td> </tr> <tr> <td>RDT&amp;E 0303140N Info Sys Security (ISSP)</td> <td style="text-align: right;">15.799</td> <td style="text-align: right;">18.196</td> <td style="text-align: right;">21.038</td> <td style="text-align: right;">26.347</td> <td style="text-align: right;">30.955</td> <td style="text-align: right;">29.119</td> <td style="text-align: right;">30.371</td> </tr> </tbody> </table> <p style="margin-top: 20px;"><b>(U) D. ACQUISITION STRATEGY: *</b></p> <p>The Navy intends to continue SECUREKit development on existing RD contract with PSI, Inc. The Navy intends to continue IASM development on existing RD contract with Promia, Inc.</p> <p style="margin-top: 40px;"><b>* Not required for Budget Activities 1,2,3, and 6</b></p>								<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159	RDT&E 0303140N Info Sys Security (ISSP)	15.799	18.196	21.038	26.347	30.955	29.119	30.371
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>																								
OPN 3415 Info Sys Security Program (ISSP)	91.924	97.478	101.749	113.839	132.029	156.804	159.159																								
RDT&E 0303140N Info Sys Security (ISSP)	15.799	18.196	21.038	26.347	30.955	29.119	30.371																								

R-1 SHOPPING LIST - Item No. 196

Exhibit R-2a, RD TEN Budget Item Justification



**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 9999 Congressional Plus Up						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	CPFF	PSI, Inc.	1.629	4.123		1.125					6.877	6.877
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.629	4.123		1.125					6.877	6.877
Remarks:												
Development Support	WX	SSC Charleston, SC		3.181								3.181
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support				3.181								3.181
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME 9999 Congressional Plus Up						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC Charleston, SC										
Developmental Test & Evaluation	WX	SSC San Diego, CA										
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	CFFF	BAH, Inc.	0.100	0.504		0.175					0.779	0.779
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.100	0.504		0.175					0.779	0.779
Remarks:												
Total Cost			1.729	7.808		1.300					10.837	10.837
Remarks:												

## CLASSIFICATION:

EXHIBIT R-2, RDT&amp;E Budget Item Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7

R-1 ITEM NOMENCLATURE

0303158N Joint Command and Control (JC2) Program

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	0.000	4.925	5.073	5.078	4.938	4.922	4.883
3146 JOINT COMMAND AND CONTROL (JC2)	0.000	4.925	5.073	5.078	4.938	4.922	4.883
Quantity of RDT&E Articles							

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

The Joint Command and Control (JC2) capability will contain the fundamental building blocks and common applications for all fielded Department of Defense (DoD) Command and Control Systems. JC2 will provide the warfighter: (1) timely access to battlefield information, and (2) state-of-the-art information processing capability to support the Command and Control of DoD, Allied and coalition forces through a combination of communications, intelligence and combat system interfaces. Global Command and Control System Maritime (GCCS-M) will begin migration to Joint Command and Control (JC2) development in coordination with the Joint Command and Control (JC2) Program. Efforts in FY06-07 will support migration of GCCS-M capabilities to commercial best practices as the JC2 architecture is further refined.

JC2 will include all Command and Control Command, Control, Communications, Computers, & Intelligence (C4I) applications required to fully support Navy/joint interoperability in the littoral environment, and includes all common functions such as track database management, message processing, display implementation, correlation and system architecture migration in order to ensure a coherent and consistent implementation of C4I architectures in the Fleet. The Joint Command and Control (JC2) capability will be the DoD principal command and control (C2) information technology system. JC2 will provide agile C2 capabilities allowing joint forces to achieve a tempo of operations, decision-making, and command that adversaries cannot match. JC2 will enable decision superiority via advanced collaborative information sharing achieved through vertical/horizontal joint C2 interoperability. Transformation to future warfighting capabilities requires enhanced battlespace awareness, timely information exchange, and net-centric forces to support critical joint and multinational operations.

Global Command and Control System (GCCS) including GCCS-M, will evolve from its current state of joint and Service variants to a single joint C2 architecture and capabilities-based implementation comprised of joint mission capability packages and Service-unique applications based on Global Information Grid (GIG) enterprise services enabling shared access to Service/Agency/joint-provided data sources. The first step in this evolution is the creation of a DoD Program Element and transfer of some funding from each of the services' GCCS program lines, beginning in FY 06. JC2 will support force-level planning, execution, monitoring, and assessment of joint and multinational operations. JC2 will employ a secure, collaborative, web-enabled, and tailored C2 architecture that provides decision superiority and vertical/horizontal interoperability. Users will access shared data sources through common Internet Protocol (IP) based network services, common data representations, and common catalogs/directories capable of utilizing intelligent thin and ubiquitous (e.g., wireless, personal digital assistant (PDA)) clients.

R-1 SHOPPING LIST - Item No. 197

## CLASSIFICATION:

EXHIBIT R-2, RDT&amp;E Budget Item Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7

R-1 ITEM NOMENCLATURE

0303158N Joint Command and Control (JC2) Program

## (U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget	0.000	5.000	5.000
FY07 President's Budget	0.000	4.925	5.073
Total Adjustments	0.000	-0.075	0.073
Summary of Adjustments			
Navy Working Capital Fund (NWCF) CIVPERS Efficiencies			-0.050
Enhancement to JC2			0.100
Inflation rate change			0.022
CIVPERS Pay Raise Rate Changes			0.001
Sec. 8125: Revised Economic Assumptions		-0.023	
Congressional Action 1% Reduction		-0.052	
Subtotal	0.000	-0.075	0.073

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVIT <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0303158N Joint Command and Control (JC2) Program			PROJECT NUMBER AND NAME 3146 Joint Command and Control (JC2)		
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Project Cost		<b>0.000</b>	<b>4.925</b>	<b>5.073</b>	<b>5.078</b>	<b>4.938</b>	<b>4.922</b>
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Command and Control (JC2) capability will contain the fundamental building blocks and common applications for all fielded DoD Command and Control Systems. JC2 will provide the warfighter: (1) timely access to battlefield information, and (2) state-of-the-art information processing capability to support the Command and Control of DoD, Allied and coalition forces through a combination of communications, intelligence and combat system interfaces. GCCS-M will begin migration to Joint Command and Control (JC2) development in coordination with the Joint Command and Control (JC2) Program. Efforts in FY06-07 will support migration of GCCS-M capabilities to commercial best practices as the JC2 architecture is further refined.

JC2 will include all C4I applications required to fully support Navy/joint interoperability in the littoral environment, and includes all common functions such as track database management, message processing, display implementation, correlation and system architecture migration in order to ensure a coherent and consistent implementation of C4I architectures in the Fleet. The Joint Command and Control (JC2) capability will be the Department of Defense (DoD) principal command and control (C2) information technology system. JC2 will provide agile C2 capabilities allowing joint forces to achieve a tempo of operations, decision-making, and command that adversaries cannot match. JC2 will enable decision superiority via advanced collaborative information sharing achieved through vertical/horizontal joint C2 interoperability. Transformation to future warfighting capabilities requires enhanced battlespace awareness, timely information exchange, and net-centric forces to support critical joint and multinational operations.

Global Command and Control System (GCCS) including GCCS-M, will evolve from its current state of joint and Service variants to a single joint C2 architecture and capabilities-based implementation comprised of joint mission capability packages and Service-unique applications based on Global Information Grid (GIG) enterprise services enabling shared access to Service/Agency/joint-provided data sources. The first step in this evolution is the creation of a DoD Program Element and transfer of some funding from each of the services' GCCS program lines, beginning in FY 06. JC2 will support force-level planning, execution, monitoring, and assessment of joint and multinational operations. JC2 will employ a secure, collaborative, web-enabled, and tailored C2 architecture that provides decision superiority and vertical/horizontal interoperability. Users will access shared data sources through common Internet Protocol (IP) based network services, common data representations, and common catalogs/directories capable of utilizing intelligent thin and ubiquitous (e.g., wireless, PDA) clients.

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0303158N Joint Command and Control (JC2) Program	PROJECT NUMBER AND NAME 3146 Joint Command and Control (JC2)
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**(U) B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	4.925	5.073
RDT&E Articles Quantity			

FY 06 - Migrate GCCS-M capabilities to commercial standards and architectures envisioned to be used by the JC2 capability.

FY 07 - Migrate additional GCCS-M capabilities to standards-based architectures.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0303158N Joint Command and Control (JC2) Program			PROJECT NUMBER AND NAME 3146 Joint Command and Control (JC2)					
<b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
N/A										
<b>(U) D. ACQUISITION STRATEGY:</b>										
N/A										
<b>(U) E. MAJOR PERFORMERS:</b>										
Space & Naval Warfare Systems Command Systems Center (SPAWARSYSCEN) San Diego provides support as the Government research and development facility.										

R-1 SHOPPING LIST - Item No. 197

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA 5</b>			0303158N Joint Command and Control (JC2) Program			3146 Joint Command and Control (JC2)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering	WX	SSC SD				1.175		1.250		Continuing	Continuing	0.000
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			0.000	0.000		1.175		1.250		Continuing	Continuing	0.000

Remarks:

Development Support	WX	SSC SD				0.625		0.625		Continuing	Continuing	0.000
Software Development	WX	SSC SD				0.625		0.625		Continuing	Continuing	0.000
Training Development											0.000	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	0.000		1.250		1.250		Continuing	Continuing	0.000

Remarks:

R-1 SHOPPING LIST - Item No. 197

UNCLASSIFIED



UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT 0303158N Joint Command and Control (JC2) Program	PROJECT NUMBER AND NAME 3146 Joint Command and Control (JC2)
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Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC SD				1.250		1.323		Continuing	Continuing	0.000
Operational Test & Evaluation											0.000	0.000
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			0.000	0.000		1.250		1.323		Continuing	Continuing	0.000

Remarks:

Contractor Engineering Support											0.000	0.000
Government Engineering Support	WX	SSC SD				1.250		1.250		Continuing	Continuing	0.000
Program Management Support											0.000	0.000
Travel											0.000	0.000
Subtotal Management			0.000	0.000		1.250		1.250		0.000	2.500	0.000

Remarks:

Total Cost			0.000	0.000		4.925		5.073		Continuing	Continuing	0.000
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Remarks:

R-1 SHOPPING LIST - Item No. 197

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: <b>February 2006</b>															
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0303158N Joint Command and Control (JC2) Program								PROJECT NUMBER AND NAME 3146 Joint Command and Control (JC2)																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones			▲ 4.0 FRP						▲ 4.1 MS C			▲ 4.1 FRP					▲ 4.2/JC2 Inc 1 MS C				▲ 4.2/JC2 Inc 1 FRP											
Software Deliveries	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Test & Evaluation Milestones									▲ 4.1 DT								▲ 4.2/JC2 Inc 1 DT								▲ 4.3/JC2 Inc 2 DT							
Development Test																																
Operational Test	▲ 4.0 OT									▲ 4.1 OT									▲ 4.2/JC2 Inc 1 OT												▲ 4.3/JC2 Inc 2 OT	
Production Milestones																																
Deliveries																																

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**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0305149N/COBRA JUDY</b>			PROJECT NUMBER AND NAME <b>4021/CJR System Engineering</b>		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>92.661</b>	<b>117.749</b>	<b>135.372</b>	<b>138.266</b>	<b>89.766</b>	<b>49.853</b>	<b>26.255</b>
RDT&E Articles Qty	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
A. (U) Mission Description							
Cobra Judy Replacement is a program that has been transferred from the Air Force to the Navy, per an Office of the Secretary of Defense (OSD) Milestone A Acquisition Decision Memorandum dated 6 August 2002. Funding depicted herein represents approximately half of the total budget.							
Cobra Judy funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable and due to leave service no later than 2012. 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.							

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0305149N/COBRA JUDY</b>	PROJECT NUMBER AND NAME <b>4021/CJR System Engineering</b>

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	68.493	82.423	92.982
RDT&E Articles Quantity	0	0	0

**DESIGN AND RISK REDUCTION**

Planned:  
Complete critical detailed designs for prime mission (X-band & S-band) radars

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	6.000	9.701	28.500
RDT&E Articles Quantity	0	0	0

**SHIPBUILDING**

Accomplishments:  
- Completed ship selection studies  
- Awarded ship concept and preliminary design contract

Planned:  
- Initiate ship detailed design and commence construction

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	14.310	20.725	5.206
RDT&E Articles Quantity	0	0	0

**SYSTEM ENGINEERING**

Planned:  
- Development of specifications / interface design documents and detailed test plans  
- Complete designs for non-prime mission equipment (C4I, data handling, classified mission equipment)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0305149N/COBRA JUDY</b>	PROJECT NUMBER AND NAME <b>4021/CJR System Engineering</b>

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

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.788	2.425	5.977
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 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.070	2.475	2.707
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

Total Cost:	92.661	117.749	135.372
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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0305149N/COBRA JUDY</b>	PROJECT NUMBER AND NAME <b>4021/CJR System Engineering</b>	
<b>C. (U) PROGRAM CHANGE SUMMARY:</b>			
Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget:	92.712	121.261	132.832
FY 2007 President's Budget:	92.661	117.749	135.372
Total Adjustments	-0.051	-3.512	2.540
Summary of Adjustments			
General Provisions	-0.051	-1.077	0.000
Congressional Action 1% Reduction	0.000	-2.435	0.000
Revised rates & inflation indices	0.000	0.000	1.140
Programmatic adjustments	0.000	0.000	1.400
	-0.051	-3.512	2.540
Schedule:			
Not Applicable.			
Technical:			
Not Applicable.			

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE:		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E,N / BA-7</b>			<b>0305149N/COBRA JUDY</b>			<b>4021/CJR System Engineering</b>				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	To Complete	Total Cost
P.E. 0303901N									Continuing	Continuing
* Details and funding profile for this Program Element are classified.										
<b>E. ACQUISITION STRATEGY:</b>										
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.										
<b>F. MAJOR PERFORMERS:</b>										
Raytheon Company - Sudbury, Massachusetts Northrop Grumman (subcontractor) - Baltimore, Maryland										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NUMBER AND NAME						
RDT&E, N / BA - 7			0305149N/COBRA JUDY			4021/CJR System Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prototype Development	CPAF	Raytheon	69.532	68.493	03/05	82.423	02/06	92.982	TBD	Continuing	Continuing	TBD
	Various	PEO Ships	9.332	6.000	11/05	9.701	04/06	28.500	TBD	Continuing	Continuing	TBD
System Engineering	WX/RX	Various	1.252	2.457	11/05	0.155	02/06	5.206	TBD	Continuing	Continuing	TBD
	MIPR	Various	1.143	1.182	11/05	1.115	02/06					
	GSA	Various	1.691	0.000	N/A	0.000	N/A					
	CPAF	BAE	0.000	0.000	N/A	0.840	02/06					
	C NF	GTRI	0.850	0.645	11/05	0.580	02/06					
	CPFF	JHU/APL	3.124	1.400	11/05	2.160	03/06					
	MIPR	MIT/LL	1.844	1.000	11/05	1.620	02/06					
	WX	NRL	0.800	0.480	11/05	0.432	02/06					
	WX	NSWC CSS	2.942	0.000	N/A	0.000	N/A					
	WX	NSWC DD	5.559	1.902	11/05	3.080	02/06					
	WX	NSWC PHD	1.185	0.350	11/05	0.200	02/06					
	Various	PEO Ships	0.000	0.000	N/A	3.000	04/06					
	WX	SEG	1.195	0.000	N/A	0.000	N/A					
	WX/PD	SPAWAR	1.028	1.894	11/05	4.808	03/06					
Subtotal Product Development			101.477	85.803		110.114		126.688		Continuing	Continuing	TBD
Remarks:												
Test and Evaluation												
Test and Evaluation	CPAF/WX/RX	Various	0.000	0.000	TBD	0.828	02/06	1.328	TBD	Continuing	Continuing	TBD
	CPAF	Raytheon	0.100	0.300	03/05	1.187	02/06	4.649	TBD	Continuing	Continuing	TBD
		AFOTEC	0.135	0.050	11/05	0.050	02/06					
		COMOPTEVFOR	0.199	0.070	11/05	0.050	02/06					
		JITC	0.225	0.000	N/A	0.000	N/A					
	WX	NSWC DD	0.341	0.368	11/05	0.310	02/06					
		PMS 325	0.365	0.000	N/A	0.000	N/A					
		TSC	0.250	0.000	N/A	0.000	N/A					
Subtotal T&E:			1.615	0.788		2.425		5.977		Continuing	Continuing	TBD
Remarks:												
Total Cost			103.092	86.591		112.539		132.665		Continuing	Continuing	TBD

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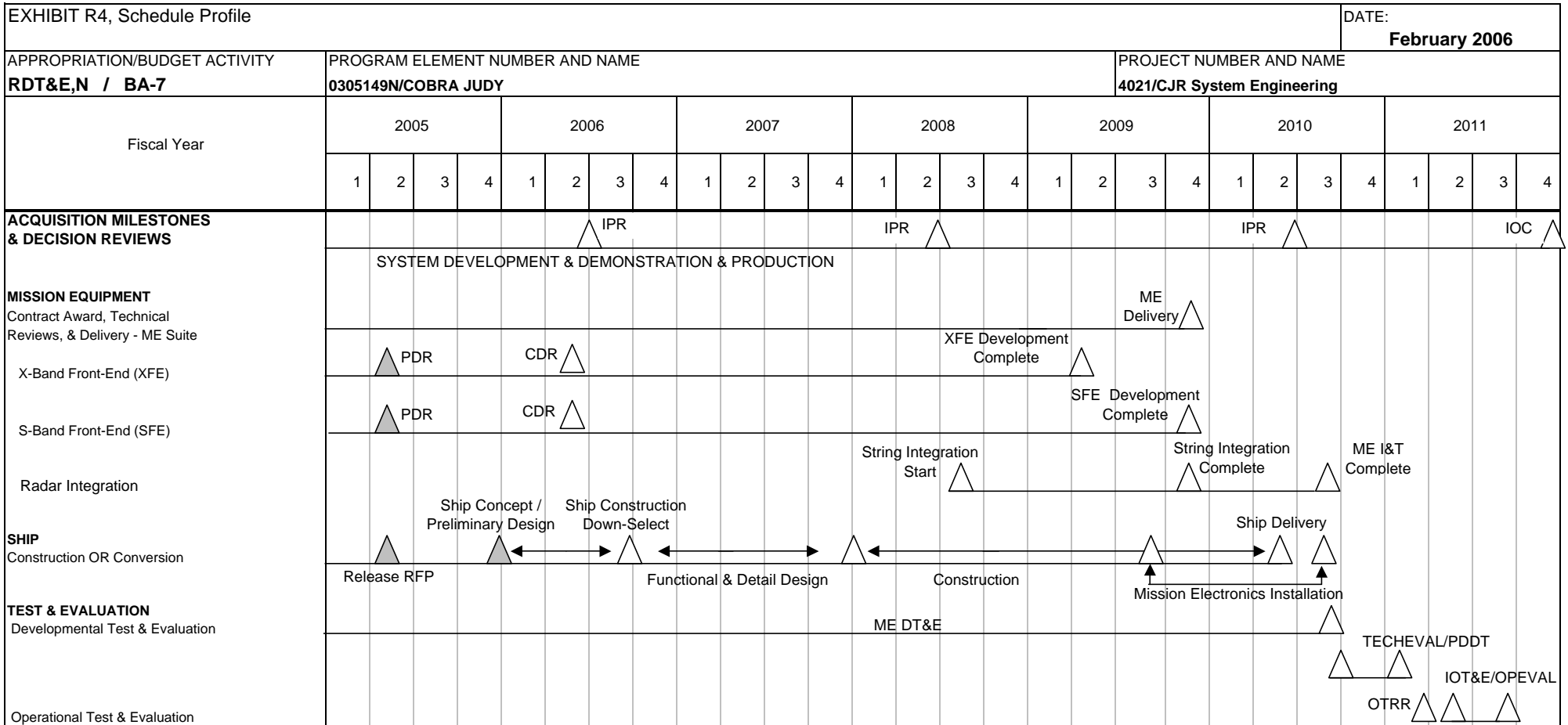
**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER					PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-7</b>			<b>0305149N/COBRA JUDY</b>					<b>4021/CJR System Engineering</b>				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		Continuing	Continuing	TBD
Remarks:												
Contractor Engineering	WX/RX	Various	0.885									
	CPAF	BAE Systems	3.986	3.000	02/05	2.735	02/06					
	GSA	Computer Science Corp	3.155									
	GSA	Systems Planning & Analysis	1.900									
Program Management	CPAF	BAE Systems	5.476	3.000	02/05	2.425	02/06	2.657	TBD	Continuing	Continuing	TBD
	CPFF	DTI	0.435									
Travel			0.100	0.070	11/05	0.050	02/06	0.050	TBD			
Subtotal Management			15.937	6.070		5.210		2.707		Continuing	Continuing	TBD
Remarks:												
Total Cost			119.029	92.661		117.749		135.372		Continuing	Continuing	TBD
Remarks:												

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

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LEGEND			
CDR	Critical Design Review	OPEVAL	Operational Evaluation
DT&E	Developmental Test and Evaluation	OTRR	Operational Test Readiness Review
IOC	Initial Operational Capability	PDR	Preliminary Design Review
IPR	Interim Progress Review	PDDT	Post Delivery Test & Trials
IOC	Initial Operational Capability	SDR	System Design Review
IOT&E	Initial Operational Test & Evaluation	TECHEVAL	Technical Evaluation
MS	Milestone		

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N / BA-7</b>	PROGRAM ELEMENT <b>0305149N/COBRA JUDY</b>			PROJECT NUMBER AND NAME <b>4021/CJR System Engineering</b>			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
<b>ACQUISITION MILESTONES &amp; DECISION REVIEWS</b>							
Interim Progress Review (IPR)		2Q		2Q		2Q	
System Development & Demonstration & Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Initial Operational Capability (IOC)							4Q
<b>MISSION EQUIPMENT</b>							
Delivery					4Q		
<b>X-Band Radar</b>							
Preliminary Design Review (PDR)	2Q						
Critical Design Review (CDR)		2Q					
<b>S-Band Radar</b>							
Preliminary Design Review (PDR)	2Q						
Critical Design Review (CDR)		2Q					
<b>Radar Integration</b>							
String Integration Start				3Q			
String Integration Complete					4Q		
ME I&T Complete						3Q	
<b>SHIP</b>							
Release RFP	2Q						
Ship Concept/Preliminary Design	4Q	1Q-3Q					
Ship Construction Down Select		3Q					
Delivery						2Q	
<b>TEST AND EVALUATION</b>							
Mission Equipment Developmental Test & Evaluation (DT&E)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q-3Q	
TECHEVAL / Post Delivery Test & Trials						3Q	1Q
OTRR							1Q
IOT&E/OPEVAL							2Q-3Q

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>				<b>BA-7</b>		R-1 ITEM NOMENCLATURE PE 0305160N Defense Meteorological Satellite Program (Space)		
<b>COST (\$ in Millions)</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	
Total PE Cost	<b>5.958</b>	<b>9.985</b>	<b>7.307</b>	<b>20.641</b>	<b>21.711</b>	<b>19.414</b>	<b>19.943</b>	
0524 Navy METOC Support (Space)	<b>3.165</b>	<b>7.769</b>	<b>6.237</b>	<b>19.546</b>	<b>20.594</b>	<b>18.286</b>	<b>18.787</b>	
1452 Geosat Follow-on	<b>0.864</b>	<b>1.216</b>	<b>1.070</b>	<b>1.095</b>	<b>1.117</b>	<b>1.128</b>	<b>1.156</b>	
9999 Congressional Adds	<b>1.929</b>	<b>1.000</b>						

Quantity of RDT&E Articles

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

This program element supports the naval services' unique requirements in meteorological and oceanographic (METOC) space-based remote sensors. Navy participates in joint efforts to leverage national polar-orbiting and geostationary satellite programs to demonstrate and validate improved warfighter capabilities. These requirements include the need to insure a smooth transition from the current joint Defense Meteorological Satellite Program (DMSP) to the future National Polar-orbiting Operational Environmental Satellite System (NPOESS). NPOESS readiness and risk reduction preparations to develop hardware and software that will allow ground stations to receive, ingest and exploit the NPOESS Preparatory Project (NPP) data. Unique naval warfighter capabilities will be transitioned to NPOESS and planned upgrades to NPOESS. These requirements also include the development of alternatives and required capabilities to replace the Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) satellite which was launched on February 10, 1998 and is nearing end of life. A replacement to GFO is required to ensure continued support to Naval operations.

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 converged National Polar-orbiting Operational Environmental Satellite System (NPOESS), 2) the joint Defense Meteorological Satellite Program (DMSP), 3) the jointly funded Coriolis satellite which includes the Navy WindSat and Air Force SMEI (Solar Mass Injection Imager) instruments, and 4) the Geodetic/geophysical Satellite (GEOSAT) Follow-On (GFO) funded entirely by Navy. GFO altimeter data are used to observe significant wave height, ocean thermal and acoustic structure. The Navy METOC Support (Space) 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' Conical Microwave Imaging Sensor (CMIS) instrument. Congressional Adds for a Radiation Hardened Vector Processor system to advance the science of spacecraft based data and imagery processing were provided in FY04 and FY05. Both the GEOSAT and Navy METOC Support (Space) projects fulfill Navy's obligation to develop naval service-unique, mission critical space-based METOC technology.

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

FY06 includes Congressional Add for the Radiation Hardened Vector Processor (RHVP) project. RHVP will enable signal processing to be performed onboard a satellite rather than on the ground, reducing the bandwidth requirements of the downlink and increasing the information content of data that can be provided by a satellite payload. Radiation hardening for on-orbit processing of imagery and sensor data is a critical technology needed by ongoing Navy and national satellite programs. In FY06, demonstrate application of scalable/configurable architecture to specific DoD Future Space programs.

**(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.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE		
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>		PE 0305160N Defense Meteorological Satellite Program (Space)		
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>				
(U) Funding:		FY 2005	FY 2006	FY 2007
FY06 President's Budget		6.084	9.122	11.492
FY07 President's Budget		5.958	9.985	7.307
Total Adjustments		(0.126)	0.863	(4.185)
Summary of Adjustments				
FORCENET Space METOC Reduction		0	0	-4
Contract Support Reduction		0	0	-0.141
NWCF Civpers Efficiencies		0	0	-0.079
Small Business Innovation Research (SBIR) Tax		-0.120	0	0
Nuclear Physical Security		0.001	0	0
Inflation		0	0	0.033
CIVPERS Pay Raise Rate Changes		0	0	0.002
Sec. 8125: Revised Economic Assumptions		0	-0.042	0
Congressional Add		0	1.000	0
Congressional Action 1% Reduction		0	-0.095	0
Department of Energy Transfer		-0.005	0	0
Misc. Navy Adjustments		-0.002	0	0
Subtotal		(0.126)	0.863	(4.185)
(U) Schedule:				
(U) Technical:				
Not Applicable				

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME PE 305160N Defense Meteorological Satellite Program (Space)				PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>3.165</b>	<b>7.769</b>	<b>6.237</b>	<b>19.546</b>	<b>20.594</b>	<b>18.286</b>	<b>18.787</b>	
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 services' unique sensor development efforts (WindSat and Advanced Altimeters) and Navy participation in Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager (SSM/I) and Special Sensor Microwave Imager Sounder (SSMIS) calibration 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 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 Navy METOC Support (Space) project ensures the naval services' 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. The project also provides for participation in efforts leading to operational improvements of satellite derived products and naval service participation as a voting member of the DMSP Configuration Control Board (CCB) and as a technical advisor to the NPOESS Joint Agency Requirements Group (JARG). Future funding plans respond to emerging Chief of Naval Operations requirements for Navy and Marine Corps METOC data.

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

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**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 3 of 17)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-7</b>	PE 305160N Defense Meteorological Satellite Program (Space)	0524 Navy METOC Support (Space)

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

WINDSAT/Sensor/Observing Systems (Space)	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	1.677	6.386	3.420	
RDT&E Articles Quantity				

FY05 - Controlled Coriolis Satellite and monitored health of WindSat on-orbit payload that provided fleet ocean wind speed and direction data. Performed sensor calibration and data validation of environmental algorithms generated for Fleet use.

FY06 - Develop additional warfighter products (e.g. sea surface temperature) from the existing Windsat data stream. Control Coriolis Satellite and monitor health of the WindSat on-orbit payload that provides fleet ocean wind speed and direction data. Perform sensor calibration and data validation of environmental algorithms generated for Fleet use.

FY07: Determine system design for advanced altimetry mission. Develop additional War fighter products (sea ice coverage); continue risk reduction to CMIS through WindSat data exploitation and control Coriolis and monitor state of health of the WindSat on-orbit payload. Monitor SSMIS performance and continue calibration and validation. Prepare for launch of F-18; Phase C Approval for Advanced Altimeter; Preliminary Design Review for Advanced Altimeter; GDPS update for sea ice; and F-17 SSMIS Cal/Val Final Report.

Calibration and Validation Activities/ Sensor/Observing Systems (Space)	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	1.275	1.153		
RDT&E Articles Quantity				

FY05 - Prepared and supported launch of Defense Meteorological Satellite Program (DMSP) (F-17). Monitored performance of F-17's Special Sensor Microwave Imager Sounder (SSM/IS). Monitored SSM/I performance and continued calibration and validation support effort associated with the DMSP SSM/IS and WindSat sensor. Used Airborne Polarimetric Microwave Imaging Radiometer (APMIR) as an underflight resource for calibration/validation of Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager (SSM/I) and Special Sensor Microwave Imager Sounder (SSM/IS) sensors.

FY06 - Complete validation report for F17. Monitor Special Sensor Microwave/Imager (SSM/I) performance and continue calibration and validation support effort associated with the Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave Imager Sounder (SSM/IS) and WindSat sensor.

FY07 - Efforts incorporated into the "Sensors/Observation Systems (Space)" investment line.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE 305160N Defense Meteorological Satellite Program (Space)	PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)
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**(U) B. Accomplishments/Planned Program**

Advanced Altimeter/ Sensors/Observing Systems (Space)	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	0.213	0.230		
RDT&E Articles Quantity				

FY05 - Completed support of Advanced Altimeter program development and trade studies.

FY06 - Perform Analysis of Alternatives including investigating the Centre Nationale Etudes Spatiale's (CNES) Altimeter Ka band (AltiKa) for littoral region application. Begin concept development and market research for Advanced Altimeter and future sensors.

FY07 - Efforts incorporated into the "Sensors/Observation Systems (Space)" investment line.

Assim/Prediction Models (Atm/Ocn)	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost			2.817	
RDT&E Articles Quantity				

FY07 - Deliver initial set of advanced NPP/NPOESS data assimilation algorithms. Conduct test and evaluation of these algorithms with NPP data.

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# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME PE 305160N Defense Meteorological Satellite Program (Space)	PROJECT NUMBER AND NAME 0524 Navy METOC Support (Space)
<p><b>(U) C. OTHER PROGRAM FUNDING SUMMARY:</b></p> <p><u>Line Item No. &amp; Name</u></p> <p>Not Applicable</p> <p><b>(U) D. ACQUISITION STRATEGY: *</b></p> <p>Naval service unique space based METOC requirements are not fully funded through Joint or converged national program plans. Particular sensors or data sources with unique naval service mission needs are targeted to accelerate acquisition or ensure threshold accomplishment. WindSat provides risk reduction data and developmental technology that the NPOESS IPO will use in the development of the Conical Microwave Imager Sounder (CMIS). CMIS will collect global microwave radiometry and sounding data to produce microwave imagery and other meteorological and oceanographic data. 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. The Advanced Altimeter technologies will improve radar altimeter resolution and arial coverage to support Navy requirements for sea surface topography measurement in the littorals.</p> <p><b>(U) E. MAJOR PERFORMERS: **</b></p> <p>FY05 - FY07 - Naval Research Laboratory, Washington D.C. 49% Satellite Mission and Technical Support, Sensor Calibration and Data Validation</p> <p>* Not required for Budget Activities 1,2,3, and 6 ** Required for DON and OSD submit only.</p>		

R-1 SHOPPING LIST - Item No. 199

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			PE 305160N Defense Meteorological Satellite Program (Space)			0524 Navy METOC Support (Space)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Spacecraft Development	FF	Spectrum Astro, AZ	2.500								2.500	
Spacecraft Development	CP	TRW, Redondo Beach, CA	4.885								4.885	
Subtotal Product Development			7.385								7.385	
Windsat-Sensor/Observing Systems (Space)	CP	Various	75.630	2.436		6.386		3.420		Continuing	Continuing	
*IOMI PM and System Engineering	CP	Various	3.754								3.754	
*SSMIS Cal/Val	CP	Various	7.496	0.643		1.153		0.000		Continuing	Continuing	
*Future Mission Engineering	CP	Various		0.086		0.230		0.000		Continuing	Continuing	
*APMIR	CP	Various	1.590								1.590	
NPP/NPOESS Algorithms- Assimilation/Prediction Models (Atmosphere/Ocean)		NRLs						2.817		Continuing	Continuing	
Subtotal Support			88.470	3.165		7.769		6.237			5.344	
Total Cost			95.855	3.165		7.769		6.237			12.729	
<p>Remarks:</p> <ul style="list-style-type: none"> <li>*Indian Ocean METOC Imager (IOMI)</li> <li>*Special Sensor Microwave Imager Sounder (SSMIS)</li> <li>*Airborne Polarimetric Microwave Imaging Radiometer (APMIR)</li> </ul> <p>Remarks: Future Mission Engineering will address Navy unique METOC requirements for littoral applications.</p>												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																						DATE: <b>February 2006</b>										
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME															
<b>RDT&amp;E, N / BA-7</b>					PE 305160N Defense Meteorological Satellite Program (Space)												0524 Navy METOC Support (Space)															
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>X0524</b>																																
WindSat / Sensor/Obs Sys (Space)	Monitor Health/Cal/Val				Product Development																											
CAL/VAL/ Sensor/Obs Sys (Space)	Prep for F-17				Monitor SSM/IS				F17 Val Report																							
Advanced Altimeter/ Sensor/Obs Sys (Space)	Concept Development Studies																															
Sensor/Obs Sys (Space)									Adv Alt Svs Desian								F-18 SSMIS CAL/VAL				Adv Alt Development											
Assim/Pred Models (Space)									CMIS Risk Reduction												Windsat Final Report											
									F18 Preps																							
					Adv NPP Data Assimilation Alg Development								NPP Launch				Algorithm T&E				Adv NPOESS Data Assimilation				Algorithm Development							

\* Airborne Polarimetric Microwave Imaging Radiometer(APMIR) Underflights will be conducted as part of the Special Sensor Microwave Image Sounder (SSMIS) Calibration and Validation.

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**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 8 of 17)



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space			PROJECT NUMBER AND NAME 1452 GEOSAT			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>0.864</b>	<b>1.216</b>	<b>1.070</b>	<b>1.095</b>	<b>1.117</b>	<b>1.128</b>	<b>1.156</b>	
RDT&E Articles Qty								

**(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. 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 GEOSAT Follow-On (GFO) satellite which was launched in February 1998 provides altimetry data until its end of life and if not replaced there will be a gap in altimetry coverage until an Advanced Altimeter or a National Polar-orbiting Operational Environmental Satellite System (NPOESS) altimeter is available.

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

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space	PROJECT NUMBER AND NAME 1452 GEOSAT

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

Algorithm Development and Sensor Cal/Val/ Sensors/Observing Systems (Space)	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	0.864	1.216	1.070	
RDT&E Articles Quantity				

FY05 - Assessed on-orbit system performance, conducted payload calibration and data validation, refined orbits and resolved performance anomalies.

FY06 - Investigate and implement life extension solutions (e.g. develop work arounds for degraded components). Assess on-orbit system performance, conduct payload calibration and data validation, refine orbits and resolve performance anomalies. Develop GFO metrics for warfighter applications.

FY07: Investigate and implement life extension solutions to work around for degraded components. Assess on-orbit system performance, calibrate payload and validate data, resolve anomalies. Assess impact of differing orbits on metric effectiveness. Complete GFO Performance Validation Reports (every 17 days) and GFO Engineering Anomaly Resolution Reports (upon retirement of anomaly). Complete MetOc metric end of year report.

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space	PROJECT NUMBER AND NAME 1452 GEOSAT

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name

Not Applicable

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

The Naval services require 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 GeoSat Follow-On satellite reaches its end of life, the program will transition to satisfy naval service unique altimetry requirements through a free-flying Advanced Altimeter or a National Polar-orbiting Operational Environmental Satellite System (NPOESS) altimeter.

**(U) E. MAJOR PERFORMERS:**

FY05 to FY07 - Ball Aerospace, Boulder, CO 32% Satellite Mission Support; Computer Sciences Corporation (CSC), Monterey, CA 50% Sensor Calibration, Data Validation and Technical Support.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-7</b>			0305160N Navy Meteorological and Oceanographic Sensors - Space				1452 GEOSAT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	CP	Ball Aerospace	85.984		N/A		N/A		N/A		85.984	
		Various	8.045		N/A		N/A		N/A		8.045	
Subtotal Product Development			94.029								94.029	
Remarks:												
Systems Engineering	CP	Ball Aerospace	2.672	0.300	N/A	0.269	N/A	0.370	N/A	Continuing	Continuing	
		Various	1.556	0.564	N/A	0.947	N/A	0.700	N/A	Continuing	Continuing	
Subtotal Support			4.228	0.864		1.216		1.070			7.378	
Remarks:												
Total Cost			98.257	0.864		1.216		1.070			101.407	

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
<b>RDT&amp;E, N / BA-7</b>					0305160N Navy Meteorological and Oceanographic Sensors - Space												1452 GEOSAT											
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Algorithm Development/ Sensor/Obs Systems (Space)	Cal/Val				GFO Metrics ▲				Life Extension Solutions				Metric Assessment of OSTM				Execute GFO Life Extension Solutions											

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space			PROJECT NUMBER AND NAME 9999 Congressional Adds				
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost			<b>1.929</b>	<b>1.000</b>					
9999 Radiation Hardened Vector			<b>1.929</b>	<b>1.000</b>					
RDT&E Articles Qty									

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

Congressional Add for the Radiation Hardened Vector Processor (RHVP) project will enable signal processing to be performed onboard a satellite rather than on the ground, reducing the bandwidth requirements of the downlink and increasing the information content of data that can be provided by a satellite payload. Radiation hardening for on-orbit processing of imagery and sensor data is a critical technology needed by ongoing Navy and national satellite programs.

FY05 supported the development of Scalable Signal Processing Architecture to provide a dynamic solution for spacecraft based data and imagery processing. In FY06, demonstrate application of scalable/configurable architecture to specific DoD Future Space programs.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305160N Navy Meteorological and Oceanographic Sensors - Space	PROJECT NUMBER AND NAME 9999 Congressional Adds

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

9282 Radiation Hardened Vector/Scalable Signal Processor Archite	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost	1.929	1.000		
RDT&E Articles Quantity				

FY05 - Developed and demonstrated scalable/reconfigurable architecture.  
 FY06 - Demonstration application of scalable/configurable architecture to specific DoD Future Space programs.

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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# UNCLASSIFIED

<b>CLASSIFICATION:</b>								
EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /</b>				<b>BA-7</b>	R-1 ITEM NOMENCLATURE 0305188N - Joint C4ISR Battle Center (JBC)			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	43.064	67.255						
3043 - Joint Interoperability and Integration	42.029	67.255						
9649 - Ice Protection Technologies for UAVs	1.035							
Quantity of RDT&E Articles								
<p><b>In accordance with the FY 05 National Defense Authorization Act, PDM II dated Dec 2005, and PBD 723 dated Dec 2005, RDT&amp;E funding for Joint Forces Command transfers from Navy to Defense-Wide beginning in FY 07. The new program element for 0305188N is 0607XXXD, under BA 7.</b></p> <p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                      The Unified Command Plan 2002 assigned Commander, U.S. Joint Forces Command (USJFCOM) with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&amp;I), located within Headquarters USJFCOM, is responsible for joint interoperability and integration of future and fielded capabilities critical to Joint, Multi-National, and Interagency warfighting operations. USJFCOM JI&amp;I works closely with Combatant Commanders/Services/Agencies (C/S/A) to ensure warfighting deficiencies are identified, develops synchronized Doctrine, Organizational, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) capability plans to ensure the warfighter has interoperable capabilities.</p> <p>In addition, on 7 January 2003 the Deputy Secretary of Defense directed the expansion of the USJFCOM JI&amp;I role to increase operational through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable Joint Fires, Maneuver, and Intelligence; and Integrated Joint Battle Management Command and Control. Evidencing this increased mission, baseline funds of \$10M were provided to USJFCOM to develop a repeatable Joint Mission Thread interoperability test and assessment methodology for use in evaluating Joint Battle Management Command and Control Roadmap execution and to demonstrate this methodology in Joint Close Air Support.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>                      This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it provides rapid assessment of required Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interoperability, as well as rapid insertion of capabilities across the DOTMLPF spectrum that meet the joint warfighter's need.</p>								

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	R-1 ITEM NOMENCLATURE 0305188N - Joint C4ISR Battle Center (JBC)
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2005	FY 2006	FY2007
FY 06 President Budget	44.238	55.326	50.906
FY 07 President Budget	43.064	67.255	0.000
Total Adjustments	-1.174	11.929	-50.906

Summary of Adjustments

SBIR	-1.140		
Department of Energy Transfer	-0.034		
Program Adjustment		-3.000	
Congressional Undistributed		-0.746	
SEC 8125		-0.325	
Congressional Directed Transfer of JFCOM to Defense Wide			-50.906
TJS - Joint Blue Force Situational Awareness / BFT		16.000	
	-1.174	11.929	-50.906

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 200

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	R-1 ITEM NOMENCLATURE 0305188N - Joint C4ISR Battle Center (JBC)							
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table><thead><tr><th><u>Line Item No. &amp; Name</u></th><th><u>FY 2005</u></th><th><u>FY 2006</u></th></tr></thead><tbody><tr><td>Not Applicable</td><td></td><td></td></tr></tbody></table> <p><b>(U) E. ACQUISITION STRATEGY:</b> Not Applicable</p> <p><b>(U) F. MAJOR PERFORMERS:</b> NONE</p> <p><b>(U) G. PERFORMANCE METRICS:</b></p>			<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	Not Applicable		
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>						
Not Applicable								

R-1 SHOPPING LIST - Item No. 200



<b>CLASSIFICATION:</b>									
EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)		
COST (\$ in Millions)			FY 2005	FY 2006					
Project Cost			<b>42.029</b>	<b>67.255</b>					
RDT&E Articles Qty									
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                  The Unified Command Plan 2002 assigned Commander, U.S. Joint Forces Command (USJFCOM) with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) designated Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&amp;I), located within Headquarters USJFCOM, is responsible for joint interoperability and integration of future and fielded capabilities critical to Joint, Multi-National, and Interagency warfighting operations. USJFCOM JI&amp;I works closely with Combatant Commanders/Services/Agencies (C/S/A) to ensure warfighting deficiencies are identified, develops synchronized Doctrine, Organizational, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) capability plans to ensure the warfighter has interoperable capabilities.</p> <p>In addition, on 7 January 2003 the Deputy Secretary of Defense directed the expansion of the USJFCOM JI&amp;I role to increase operational through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable Joint Fires, Maneuver, and Intelligence; and Integrated Joint Battle Management Command and Control. Evidencing this increased mission, baseline funds of \$10M were provided to USJFCOM to develop a repeatable Joint Mission Thread interoperability test and assessment methodology for use in evaluating Joint Battle Management Command and Control Roadmap execution and to demonstrate this methodology in Joint Close Air Support.</p>									

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)

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

	FY 05	FY 06		
Integrated Combat Identification and Situational Awareness Capabilities	3.265	19.498		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Integrated joint forces capabilities to enhance blue force situational awareness. USJFCOM JI&I executed Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with interoperable combat identification and situational awareness capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** Implementation of these capabilities through ongoing strategic to tactical situational awareness initiatives are required to eliminate blue force fratricide. USJFCOM JI&I continues efforts to integrate among joint forces efforts to enhance blue force situational awareness. USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with interoperable combat identification and situational awareness capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY 05	FY 06		
Interoperable Joint Fires and Intel Capabilities	13.500	20.158		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Executed Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with interoperable Joint Fires (Time Sensitive Targets, Precision Engagement, and Close Air Support) and intelligence capabilities among United States Forces, Interagencies, and Allied, and coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with interoperable Joint Fires (Time Sensitive Targets, Precision Engagement, and Close Air Support) and intelligence capabilities among United States Forces, Interagencies, and Allied, and coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY 05	FY 06		
Common Operational and Tactical Pictures Capabilities	6.227	9.514		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Executed Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with Common Operational and Tactical Pictures capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with Common Operational and Tactical Pictures capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)

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

	FY 05	FY 06		
Integrated Joint Battle Management C2 Capabilities	6.953	6.123		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Executed Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with integrated Joint Battle Management Command and Control capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations. This effort includes mission thread analysis, testing and engineering support.

**FY06 Plan:** USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff efforts to provide Regional and Functional Combatant Commanders with integrated Joint Battle Management Command and Control capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations. This effort includes mission thread analysis, testing and engineering support.

	FY 05	FY 06		
Joint Operational Concepts and Integrated Architectures	3.400	3.297		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Developed, maintained, and updated Joint Mission Area Joint Operational Concepts and Integrated Architectures in close coordination with OSD, Joint Staff, COCOMS and Services to support the warfighter.

**FY06 Plan:** In support of Joint Battle Management Command and Control (BMC2), USJFCOM JI&I is responsible to continue to develop, maintain, and update Joint Mission Area Joint Operational Concepts and Integrated Architectures which provides support to the warfighter across the "Range of Military Operations." This Joint Operational Concept will describe the doctrinally based tasks and activities, operational elements, and the time-phased information flows required to accomplish joint military operations. The Joint Integrated Architecture efforts will be utilized to assess and analyze doctrine, Concept of Operations (CONOPS), Tactical Technical Procedures (TTPs), system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. The Joint Operational Concepts and Integrated Architectures provide the baseline to identify warfighter requirements and were developed in close coordination with OSD, Joint Staff, COCOMs, and Services.

	FY 05	FY 06		
Integrated Service and Agencies Intelligence Capabilities	3.000	2.826		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Executed Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with integrated Service and Agencies Intelligence capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders with integrated Service and Agencies Intelligence capabilities among United States Forces, Interagencies, and Allied, and Coalition Forces in support to the Global War on Terrorism (GWOT) and in multiple theaters of operations.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)

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

	FY 05	FY 06		
Ability to Exchange Information Between Multiple Security Domains	1.500	2.037		
RDT&E Articles Quantity				

**FY05 Accomplishments:** USJFCOM JI&I executed Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders the ability to exchange information between multiple security domains among United States Forces, Interagency, and Allied, and Coalition Forces in support of the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** USJFCOM JI&I is continuing to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to provide Regional and Functional Combatant Commanders the ability to exchange information between multiple security domains among United States Forces, Interagency, and Allied, and Coalition Forces in support of the Global War on Terrorism (GWOT) and in multiple theaters of operations.

	FY 05	FY 06		
Define Operational Requirements and Functional Concepts	0.550	1.884		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Executed Secretary of Defense and Chairman Joint Chiefs of Staff directives to define operational requirements and functional concepts for Department of Navy Deployable Joint Command and Control which supports integration with Joint BMC2, Standing Joint Force Headquarters, and Service Battle Management Command and Control capabilities and goals.

**FY06 Plan:** USJFCOM JI&I will continue to execute Secretary of Defense and Chairman Joint Chiefs of Staff directives to define operational requirements and functional concepts for Department of Navy Deployable Joint Command and Control which supports integration with Joint BMC2, Standing Joint Force Headquarters, and Service Battle Management Command and Control capabilities and goals.

	FY 05	FY 06		
Enroute Mission Capabilities	2.000	0.565		
RDT&E Articles Quantity				

**FY05 Accomplishments:** Provided command and control communications (both onsite and remote) capabilities across the Regional Combatant Commanders and Service Components to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

**FY06 Plan:** To continue efforts to provide command and control communications (both onsite and remote) capabilities across the Regional Combatant Commanders and Service Components to support the Global War on Terrorism (GWOT) and in multiple theaters of operations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)																
<b>(U) B. Accomplishments/Planned Program</b>																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY 05</th> <th style="width: 10%;">FY 06</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>Combatant Commander Capability Office (C3O)</td> <td style="text-align: center;">1.634</td> <td style="text-align: center;">0.154</td> <td></td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					FY 05	FY 06			Combatant Commander Capability Office (C3O)	1.634	0.154			RDT&E Articles Quantity				
	FY 05	FY 06																
Combatant Commander Capability Office (C3O)	1.634	0.154																
RDT&E Articles Quantity																		
<p><b>FY05 Accomplishments:</b> Identified the Combatant Commanders' warfighting shortfalls. The C3O collected and identified commander requirements, coordinate the prioritization of the information into COCOM issue categories, and subsequently worked with Services and Agencies to identify and define DOTMLPF capability solutions. The C3O identified operational problems applicable from the Joint Task Force down to the Tactical Level and those areas where assistance was necessary to achieve operational enhancements with US, Allied, and Coalition forces.</p> <p><b>FY06 Plan:</b> USJFCOM JI&amp;I will continue to identify the Combatant Commanders' warfighting shortfalls. The C3O will collect and identify commander requirements, coordinate the prioritization of the information into COCOM issue categories, and subsequently work with Services and Agencies to identify and define DOTMLPF capability solutions. The C3O identifies the operational problems applicable from the Joint Task Force down to the Tactical Level and those areas where assistance is necessary to achieve operational enhancements with US, Allied, and Coalition forces.</p>																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY 05</th> <th style="width: 10%;">FY 06</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>T2 Architecture Support of Joint Training Environment</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">1.199</td> <td></td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					FY 05	FY 06			T2 Architecture Support of Joint Training Environment	0.000	1.199			RDT&E Articles Quantity				
	FY 05	FY 06																
T2 Architecture Support of Joint Training Environment	0.000	1.199																
RDT&E Articles Quantity																		
<p><b>FY06 Plan:</b> USJFCOM JNTC will develop the new overarching Training Transformation (T2) architecture to support the Joint training environment as tasked by the Deputy Secretary of Defense (DEPSECDEF) in the DoD T2 Implementation Plan. Mission planning and rehearsal capabilities will be developed within the operational environment utilizing rapid spiral development methodology to establish a real-time simulation emphasizing crisis-action planning, joint force organization, and mission rehearsal to meet Combatant Commanders' requirements while providing a realistic system that enables the warfighter to learn, improvise, and adapt rapidly to constantly changing threats.</p>																		

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<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering											0.000	0.000
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			0.000	0.000		0.000				0.000	0.000	0.000
Remarks:												
Development Support											0.000	0.000
Software Development											0.000	0.000
Training Development											0.000	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	0.000		0.000				0.000	0.000	0.000
Remarks:												

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<b>CLASSIFICATION:</b>												
Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME 3043 - Joint Interoperability and Integration (JI&I)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Support	C-CPFF	Science Application International Corp.	5.225	4.515	10/04	5.100	10/05			Continuing	Continuing	0.000
Government Support	MIPR	Various DoD	17.599	35.176	Various	59.685	Various			Continuing	Continuing	0.000
Contractor Support	C-CPFF	Old Dominion University	1.530	1.886	04/05	2.010	04/06			Continuing	Continuing	0.000
Contractor Support	C-CPFF	General Dynamics	1.820	0.352	11/04	0.358	11/05			Continuing	Continuing	0.000
Travel		Various DoD	0.431	0.100	Various	0.102	Various			Continuing	Continuing	0.000
												0.000
Subtotal T&E			26.605	42.029		67.255				Continuing	Continuing	0.000
Remarks:												
Contractor Engineering Support											0.000	0.000
Government Engineering Support											0.000	0.000
Program Management Support											0.000	0.000
Travel											0.000	0.000
Subtotal Management			0.000	0.000		0.000				0.000	0.000	0.000
Remarks:												
Total Cost			26.605	42.029		67.255				Continuing	Continuing	0.000
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME 9649 - Ice Protection Technologies for UAVS			
COST (\$ in Millions)		FY 2005	FY 2006					
Project Cost		1.035	0.000					
RDT&E Articles Qty								
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                  Congressional Add Project 9649: JFCOM JI&amp;I received congressional add in FY05 for Ice Protection Technologies for Unmanned Aerial Vehicles (UAVs).</p>								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 9649 - Ice Protection Technologies for UAVS	
<b>(U) B. Accomplishments/Planned Program</b>			
	FY 05	FY 06	
Ice Protection Technologies for UAVs	1.035	0.000	
RDT&E Articles Quantity			
<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>FY05 Accomplishment:</b> Funds transferred from RDT&amp;E, Air Force to USJFCOM to oversee Ice Protection Technologies efforts for Unmanned Aerial Vehicles (UAVs).</p> </div>			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME 9649 - Ice Protection Technologies for UAVS
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>		
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>
Not Applicable		
<b>(U) E. ACQUISITION STRATEGY:</b>		
Not Applicable.		
<b>(U) F. MAJOR PERFORMERS:</b>		
None		
<b>(U) F. PERFORMANCE METRICS :</b>		

R-1 SHOPPING LIST - Item No. 200

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		0305204N Tactical Unmanned Aerial Vehicles						
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		76.943	115.173	115.950	40.510	11.647	11.862	12.471
2478 Tactical Control System		13.286	10.762	9.156	9.453	8.932	9.094	9.326
2768 VTUAV		59.096	74.215	105.124	29.347	0.971	0.989	1.328
2910 Joint Technology Center/ Sys Integ Lab		1.590	1.634	1.670	1.710	1.744	1.779	1.817
3135 USMC VUAV			3.862					
9650 Advanced Airship Flying Laboratory		2.971						
9999 Congressional Adds			24.700					

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** These programs provide for the development of Tactical Unmanned Aerial Vehicle (TUAV) systems that provide warfighters with dedicated day/night aerial Intelligence, Surveillance, Reconnaissance, and Target Acquisition (ISR&TA) capabilities; and communications/data dissemination; electronic warfare; weather data collection to support combat operations; minefield detection; and nuclear/biological/chemical reconnaissance in limited adverse weather.

**Tactical Control System (TCS):** TCS provides interoperability for command and control of the present and future Tactical and Medium Altitude Endurance (MAE) UAVs and their payloads utilized for ISR&TA and combat assessment. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station (GCS), implementation of NATO (North Atlantic Treaty Organization) Standardization Agreement (STANAG) 4586, and through the use of the Tactical Common Data Link (TCDL). TCS provides connectivity to designated Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems for the Navy Vertical Takeoff and Landing (VTOL) Tactical UAV (VTUAV). TCS and VTUAV will implement NATO STANAG 4586 compliance, and weaponization and plug-and-play functionality. TCS will also be evaluated for future Naval UAVs.

**Vertical Takeoff and Landing Tactical UAV (VTUAV):** VTUAV (also referred to as the Fire Scout VTUAV) provides real-time and non-real-time intelligence, surveillance and reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation and battle management (including communications relay). The VTUAV 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, and autonomous waypoint navigation with command override capability. 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 VTUAV will be provided through standard DoD C4ISR system architectures and protocols.

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## CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-7</b>	R-1 ITEM NOMENCLATURE 0305204N Tactical Unmanned Aerial Vehicles
<p><b>JTC/SIL:</b> The Joint Technology Center/System Integration Laboratory provides experimentation for UAV technology assessment, insertion, demonstration, transfer, as well as simulation and exercise support.</p> <p><b>USMC Vertical Unmanned Aerial Vehicle (VUAV):</b> The USMC VUAV will provide the Marine Corps a Tier III UAV supporting Marine Expeditionary Force (MEF) and Joint Task Force (JTF) level commanders with the required speed and survivability to support USMC Expeditionary Maneuver Warfare (EMW) operations. The system will build on Navy VTUAV and Coast Guard Eagle Eye technology. Pre-Milestone A activities will be conducted.</p> <p><b>Advance Airship Flying Laboratory:</b> FY 2005 Congressional Add - Initial capability studies for development of a modernized naval airship featuring contemporary composited, digital flight controls, vectored thrust and remote piloted capabilities that can provide immediate utility for missions requiring heavy lift (logistics and/or sensor suites), long endurance (measured in days vs. hours), and persistent broad-area Intelligence, Surveillance, and Reconnaissance (ISR).</p> <p><b>Congressional Adds.</b></p> <p><b>Joint Operational Test Bed System (JOTBS)</b> JOTBS is an experimental, ground-based control system that is designed to fly, operate and receive data from all the services and individual UAVs from a single interface.</p> <p><b>Fire Scout RQ-8B (MQ-8B)</b> The Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) was designed to provide real-time intelligence, surveillance and reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay). The VTUAV launches and recovers vertically and can operate from all 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 ability to incorporate 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, through implementation of NATO Standardization Agreement (STANAG) 4586 and through the use of the Tactical Common Data Link (TCDL). The data from the VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.</p> <p><b>Center for Coastline Security Technology</b> Office of Naval Research (ONR) is working with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along United States Coastlines.</p> <p><b>Advanced Airship Flying Laboratory Phase II</b> Capability studies for development of a modernized naval airship featuring contemporary composited, digital flight controls, vectored thrust and remote piloted capabilities that can provide immediate utility for missions requiring heavy lift (logistics and/or sensor suites), long endurance (measured in days vs. hours), and persistent broad-area Intelligence, Surveillance, and Reconnaissance (ISR).</p>	

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

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 2478 Tactical Control System			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
2478 Tactical Control System		<b>13.286</b>	<b>10.762</b>	<b>9.156</b>	<b>9.453</b>	<b>8.932</b>	<b>9.094</b>	<b>9.326</b>
RDT&E Articles Qty - Not Applicable								

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

The Tactical Control System (TCS) is developing 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 Navy Unmanned Aerial Vehicles (UAVs), including the Navy Vertical Takeoff and Landing (VTOL) Tactical UAV (VTUAV). Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, NATO STANAG-4586 compliance and through the use of the Tactical Common Data Link (TCDL). TCS and VTUAV will implement NATO STANAG 4586 and plug-and-play functionality. TCS will also be evaluated for future Naval UAVs.

TCS provides a full range of scaleable Unmanned Air System (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 UAV data from different UAS types for reconnaissance, surveillance, and combat assessment.

TCS provides UAS command, control and processing from land and sea based ground control stations. TCS development continues to meet the updated VTUAV Operational Requirements Document (ORD) and add key technologies that will be used by UAS.

TCS maximizes the use of contractor and government off-the shelf hardware and software whenever possible. TCS software is interoperable, and is compliant with the OSD Command and Control, Communications, Intelligence (C3I) Joint Technical Architecture (JTA), and Distributed Common Ground System (DCGS) standards.

Includes FY 2005 Congressional add of \$4.5M for the Joint Operational Test Bed System (JOTBS), less \$.121M Congressional undistributed reductions. The FY 2006 Congressional add of \$3.0M for JOTBS is shown in project 9999.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2478 Tactical Control System
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**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		5.840	7.390	5.968
RDT&E Articles Quantity				

Continue TCS integration with VTUAV 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 VTUAV required C4ISR systems. Complete multi-vehicle UAS control through FY2008.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.379		
RDT&E Articles Quantity				

JOTBS enhancements and support of UAV experimentation.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.067	3.372	3.188
RDT&E Articles Quantity				

Continue government engineering support, contractor support, program support, and travel for the TCS program.

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EXHIBIT R-2a, RDT&E Project Justification		<b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2478 Tactical Control System	
<b>C. PROGRAM CHANGE SUMMARY:</b>			
Funding:		FY 05	FY 06
Previous President's Budget:		13.293	10.902
Current BES/President's Budget:		13.286	10.762
Total Adjustments		-0.007	-0.140
			FY 07
			9.110
			9.156
			0.046
Summary of Adjustments			
Congressional Reductions			
Congressional Recissions			
Congressional Undistributed Reductions		-0.010	-0.097
Congressional Increases		0.003	
Economic Assumptions			0.046
Miscellaneous			
Subtotal		-0.007	-0.140
			0.046
Schedule:			
Schedule changes support an integration between VTUAV and Littoral Combat Ship.			
Technical:			
Not applicable			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2478 Tactical Control System
<p><b>D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <p>Not Applicable</p> <p><b>E. ACQUISITION STRATEGY:</b></p> <p>These acquisitions have been made by modifying the competitively awarded TCS contract (awarded to Raytheon in 2000), as well as through the TCS Basic Order Agreement with Raytheon, both of which are cost-plus contracts. TCS development and testing will be accomplished via a Government/Industry team.</p>		

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2478 Tactical Control System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Raytheon, Falls Church, VA	75.321	4.970	11/04	6.934	12/05	5.193	11/06	13.401	105.819	105.819
Award Fees	C/CPAF	Raytheon, Falls Church, VA	7.005	0.840	06/05	0.426	06/06	0.745	06/07	1.608	10.624	10.624
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			82.326	5.810		7.360		5.938		15.009	116.443	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2478 Tactical Control System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Various	1.140	0.030	11/04	0.030	02/06	0.030	11/06	Continuing	Continuing	
Test Assets	WX	USJFCOM, Norfolk, VA	6.078	4.379	01/05						10.457	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			7.218	4.409		0.030		0.030		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various	0.100	0.610	12/04	0.625	12/05	0.641	12/06	Continuing	Continuing	
Government Engineering Support	WX	NAWCAD, Pax River, MD	4.083	1.368	12/04	1.322	10/05	1.190	11/06	Continuing	Continuing	
Government Engineering Support	WX	SPAWAR, San Diego, CA	0.050	0.050	11/04	0.096	01/06	0.097	11/06	Continuing	Continuing	
Program Management Support	Various	Various	2.631	1.006	11/04	1.314	02/06	1.244	11/06	Continuing	Continuing	
Travel	TO	NAVAIR-HQ, Pax River, MD	1.489	0.033	11/04	0.015	10/05	0.016	11/06	Continuing	Continuing	
											0.000	
Subtotal Management			8.353	3.067		3.372		3.188		Continuing	Continuing	
Remarks:												
Total Cost			97.897	13.286		10.762		9.156		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - 202

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Exhibit R-2, RD TEN Budget Item Justification  
(Exhibit R-2, page 8 of 43)

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																					DATE: <b>February 2006</b>																			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 7</b>					PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles										PROJECT NUMBER AND NAME 2478 Tactical Control System																									
Fiscal Year	2005				2006				2007				2008				2009				2010				2011															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
<b>Acquisition Milestones</b>				TCS CDR ▲																																				
Completion of baseline TCS / VTUAV Requirements																																								
Requirements Development to support STANAG 4586, Weaponization, and Plug & Play					▶																																			
<b>Test &amp; Evaluation Milestones</b>				TCS/VTUAV DT-IIB																																				
Development Test													▶ TCS/VTUAV Combined DT/OT-IIB																											
Operational Test																	▶ OPEVAL																							
<b>Production Milestones</b>																																								
Software/Updates																	▶																							

R-1 SHOPPING LIST - 202

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0305204N Tactical Unmanned Aerial Vehicles				PROJECT NUMBER AND NAME 2478 Tactical Control System		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TCS Critical Design Review (CDR)	4Q						
TCS/VTUAV Initial Operating Capability (IOC)				4Q			
Completion of baseline TCS / VTUAV Requirements	1Q-4Q						
Requirements Development to support STANAG 4586, Weaponization, and Plug & Play	1Q-4Q	1Q-4Q	1Q-2Q				
TCS/VTUAV DT-IIB	1Q-4Q	1Q-4Q	1Q-4Q				
TCS/VTUAV Combined DT/OT-IIB				1Q-2Q			
TCS/VTUAV OT-IIB OPEVAL				3Q-4Q			
Software/Updates				3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - 202

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 2768 VTUAV			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
2768 VTUAV		59.096	74.215	105.124	29.347	0.971	0.989	1.328
RDT&E Articles Qty		2	5 *					

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

The Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) (also referred to as the Fire Scout VTUAV) was designed to provide real-time intelligence, surveillance and reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay). The VTUAV launches and recovers vertically and can operate from all 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 ability to incorporate 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, through implementation of NATO Standardization Agreement (STANAG) 4586 and through the use of the Tactical Common Data Link (TCDL). The data from the VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols. The program complies with FY06 Defense legislation and resultant DoD policy concerning Tactical Common Data Links.

A VTUAV system is comprised of three air vehicles, three electro-optical/infrared/laser designator-rangefinder payloads, two Ground Control Stations (with TCS and TC DL integrated for interoperability), one UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment.

A program to continue development of the VTUAV to meet the Littoral Combat Ship (LCS) mission requirements was initiated in FY04. Engineering and Manufacturing Development (EMD) is continuing in FY07 and will include design activities for system upgrades, and TCS integration. Procurement of two EMD MQ-8B Air Vehicles was initiated in FY04, two additional EMD MQ-8B Air Vehicles initiated in FY05, and five EMD MQ-8B Air Vehicles will be initiated in FY06.

The Air Vehicle was redesignated from RQ-8B to MQ-8B on 24 June 2005 per letter from HQ USAF/XPPE.

The VTUAV system is scheduled for a 1st quarter FY07 Milestone C LRIP decision.

The U.S. Army has selected the MQ-8B as their Class IV UAV for the Future Combat System (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.

\* Two of the five articles initiated in FY06 are funded by a Congressional plus-up, and identified in Project 9999 of this exhibit.

R-1 SHOPPING LIST -202

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2768 VTUAV
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**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		46.233	56.715	89.994
RDT&E Articles Quantity		2	5 *	

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.  
 \* Two of the five articles initiated in FY06 are funded by a Congressional plus-up, and identified in Project 9999 of this exhibit.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		2.900	4.600	7.670
RDT&E Articles Quantity				

Continue ILS, technical data, and training system development. Procurement of trainers and spares to support OPEVAL.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		1.196	2.500	3.093
RDT&E Articles Quantity				

Complete developmental testing of the VTUAV system. Continue combined developmental and operational testing TECHEVAL and planning for OPEVAL.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2768 VTUAV

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

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	8.767	10.400	4.367
RDT&E Articles Quantity			

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																																				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2768 VTUAV																																																																				
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY05</th> <th style="text-align: right;">FY 06</th> <th style="text-align: right;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">59.129</td> <td style="text-align: right;">77.601</td> <td style="text-align: right;">53.172</td> </tr> <tr> <td>Current BES/President's Budget:</td> <td style="text-align: right;">59.096</td> <td style="text-align: right;">74.215</td> <td style="text-align: right;">105.124</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.033</td> <td style="text-align: right; border-top: 1px solid black;">-3.386</td> <td style="text-align: right; border-top: 1px solid black;">51.952</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Rescissions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Undistributed Reductions</td> </tr> <tr> <td></td> <td style="text-align: right;">-0.045</td> <td style="text-align: right;">-0.805</td> <td></td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Increases</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Economic Assumptions</td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">-0.351</td> <td style="text-align: right;">0.539</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Other Adjustments</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">52.600</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Miscellaneous Adjustments</td> </tr> <tr> <td></td> <td style="text-align: right;">0.012</td> <td style="text-align: right;">-2.230</td> <td style="text-align: right;">-1.187</td> </tr> <tr> <td>Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-0.033</td> <td style="text-align: right; border-top: 1px solid black;">-3.386</td> <td style="text-align: right; border-top: 1px solid black;">51.952</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule:</p> <p>Schedule change due to revision of optimum phasing of milestones and reviews. Procurement of two VTUAV EMD MQ-8B air vehicles in 3Q, FY05. Procurement of three VTUAV EMD MQ-8B air vehicles planned for 2Q, FY06. Two additional EMD MQ-8B articles are being initiated in FY06, funded by a Congressional plus-up, and identified in Project 9999 of this exhibit. Milestone C is planned for 1Q, FY 07. Combined DT/OT planned for 4Q, FY07-2Q, FY08. OPEVAL planned for 2Q-4Q, FY08. IOC planned for 4Q, FY08. Full Rate Production (FRP) planned for 1Q, FY09.</p> <p style="margin-top: 20px;">Technical:</p> <p>Not applicable</p>			Funding:	FY05	FY 06	FY 07	Previous President's Budget:	59.129	77.601	53.172	Current BES/President's Budget:	59.096	74.215	105.124	Total Adjustments	-0.033	-3.386	51.952	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions					-0.045	-0.805		Congressional Increases				Economic Assumptions						-0.351	0.539	Other Adjustments							52.600	Miscellaneous Adjustments					0.012	-2.230	-1.187	Subtotal	-0.033	-3.386	51.952
Funding:	FY05	FY 06	FY 07																																																																			
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	-0.045	-0.805																																																																				
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R-1 SHOPPING LIST - 202

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2768 VTUAV
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
APN: 044300 VTUAV			37.570	64.501	104.866	100.383	94.133	972.244	1,373.697
APN Initial Spares: 060510 VTUAV			7.426	7.821	26.308	8.425	3.421	144.058	197.459

**E. ACQUISITION STRATEGY:**

Continue with the VTUAV EMD program. Design and development of an improved system initiated in FY04 to support the Littoral Combat Ship Program. Nine EMD MQ-8B Air Vehicles will be procured. A Milestone C LRIP decision is scheduled for 1Q, FY07. A FRP and IOC will follow completion of OPEVAL.

R-1 SHOPPING LIST -202

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2768 VTUAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	NGC, San Diego, CA	181.501	46.233	06/05	56.715	02/06	89.994	11/06	92.463	466.906	466.906
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			181.501	46.233		56.715		89.994		92.463	466.906	
Remarks:												
Integrated Logistics Support	WX	Various	8.723	2.900	11/04	4.600	12/05	7.670	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			8.723	2.900		4.600		7.670		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2768 VTUAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Various	1.691	1.196	11/04	2.500	12/05	3.093	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			1.691	1.196		2.500		3.093		Continuing	Continuing	
Remarks:												
Government Engineering Support	WX	Various	12.220	4.150	11/04	5.550	12/05	2.134	11/06	Continuing	Continuing	
Program Management Support	Various	Various	8.272	4.567	11/04	4.800	12/05	2.183	11/06	Continuing	Continuing	
Travel		NAVAIR, Pax River, MD	0.517	0.050	11/04	0.050	10/05	0.050	11/06	Continuing	Continuing	
											0.000	
											0.000	
Subtotal Management			21.009	8.767		10.400		4.367		Continuing	Continuing	
Remarks:												
Total Cost			212.924	59.096		74.215		105.124		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

**Exhibit R-2, RDTEEN Budget Item Justification**  
(Exhibit R-2, page 17 of 43)

EXHIBIT R4, Schedule Profile																			DATE: February 2006													
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	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>				IBR ▲								MSC ▲																				
<b>VTUAV EMD MQ-8B</b>		AV CDR ▲																														
<b>Block Upgrade Planning</b>		MS PDR ▲		MS CDR ▲																												
<b>Test &amp; Evaluation</b>		MS SRR ▲																														
<b>Production Milestones</b>																																
EMD MQ-8B Air Vehicles			▲					▲																								
LRIP MQ-8B Air Vehicles																																
FRP MQ-8B Air Vehicles																																
<b>Deliveries</b>																																



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 2910 Joint Technology Center/Systems Integration Lab			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
2910 Joint Technology Center/Sys Integ Lab		<b>1.590</b>	<b>1.634</b>	<b>1.670</b>	<b>1.710</b>	<b>1.744</b>	<b>1.779</b>	<b>1.817</b>
RDT&E Articles Qty - Not Applicable								

**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 its 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, Shadow 200, and Pioneer 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.

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**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 20 of 43)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2910 Joint Technology Center/Systems Integration Lab
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**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.270	0.339	0.340
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.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.820	0.795	0.830
RDT&E Articles Quantity				

MUSE Development - Initial development of VTUAV model, continued 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.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.500	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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2910 Joint Technology Center/Systems Integration Lab		
<b>C. PROGRAM CHANGE SUMMARY:</b>				
Funding:		FY 05	FY 06	FY 07
Previous President's Budget:		1.591	1.659	1.662
Current BES/President's Budget:		1.590	1.634	1.670
Total Adjustments		-0.001	-0.025	0.008
Summary of Adjustments				
Congressional Reductions				
Congressional Rescissions				
Congressional Undistributed Reductions		-0.001	-0.017	
Congressional Increases				
Economic Assumptions			-0.008	0.008
Miscellaneous Adjustments				
Subtotal		-0.001	-0.025	0.008
Schedule:				
Not Applicable				
Technical:				
Not Applicable				

R-1 SHOPPING LIST - 202

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 2910 Joint Technology Center/Systems Integration Lab
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>  Not Applicable		
<b>E. ACQUISITION STRATEGY:</b>  Not Applicable		

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2910 Joint Technology Center/Systems Integration Lab						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	Redstone Arsenal, AL	2.678	0.820	11/04	0.795	03/06	0.830	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			2.678	0.820		0.795		0.830		Continuing	Continuing	
Remarks:												
Development Support	MIPR	Redstone Arsenal, AL	1.900	0.500	11/04	0.500	03/06	0.500	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.900	0.500		0.500		0.500		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			2910 Joint Technology Center/Systems Integration Lab						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Government Engineering Support	MIPR	Redstone Arsenal, AL	0.990	0.270	11/04	0.339	03/06	0.340	11/06	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.990	0.270		0.339		0.340		Continuing	Continuing	
Remarks:												
Total Cost			5.568	1.590		1.634		1.670		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - 202

# UNCLASSIFIED

**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 25 of 43)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 7</b>					PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles										PROJECT NUMBER AND NAME 2910 Joint Technology Center/Systems Integration Lab																	
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																
<b>Test &amp; Evaluation Milestones</b>																																
<b>Provide MUSE support to UAV developers</b>																																



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 3135 USMC VUAV			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
3135 USMC VUAV			<b>3.862</b>					
RDT&E Articles Qty - Not Applicable								

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

The USMC Vertical Unmanned Aerial Vehicle (VUAV) will provide the Marine Corps a Tier III UAV supporting Marine Expeditionary Force (MEF) and Joint Task Force (JTF) level commanders with the required speed and survivability to support USMC Expeditionary Maneuver Warfare (EMW) operations. The system will build on Navy Vertical Takeoff and Landing Tactical UAV (VTUAV) and Coast Guard Eagle Eye technology. FY06 funds will support an Analysis of Alternatives (AoA) for a subsequent acquisition program.

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 28 of 43)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 3135 USMC VUAV
---	---	---

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.862	
RDT&E Articles Quantity			

Conduct studies and analysis, government engineering support, program management support, and travel for the USMC VUAV program.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 3135 USMC VUAV																																																
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 05</th> <th style="text-align: right;">FY 06</th> <th style="text-align: right;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">9.187</td> <td style="text-align: right;">7.994</td> </tr> <tr> <td>Current BES/President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">3.862</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">-5.325</td> <td style="text-align: right; border-top: 1px solid black;">-7.994</td> </tr> <tr> <td colspan="4" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 20px;">Congressional Reductions</td> <td></td> <td style="text-align: right;">-5.187</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Rescissions</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Undistributed Reductions</td> <td></td> <td style="text-align: right;">-0.096</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Increases</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Economic Assumptions</td> <td></td> <td style="text-align: right;">-0.042</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Miscellaneous Adjustments</td> <td></td> <td></td> <td style="text-align: right;">-7.994</td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0</td> <td style="text-align: right; border-top: 1px solid black;">-5.325</td> <td style="text-align: right; border-top: 1px solid black;">-7.994</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule:</p> <p style="margin-left: 40px;">Current schedule reflects new Analysis of Alternatives (AoA). Due to program restructuring, other activities identified in PB06 submit were eliminated.</p> <p style="margin-top: 20px;">Technical:</p> <p style="margin-left: 40px;">Not Applicable</p>			Funding:	FY 05	FY 06	FY 07	Previous President's Budget:	0.000	9.187	7.994	Current BES/President's Budget:	0.000	3.862	0.000	Total Adjustments	0.000	-5.325	-7.994	Summary of Adjustments				Congressional Reductions		-5.187		Congressional Rescissions				Congressional Undistributed Reductions		-0.096		Congressional Increases				Economic Assumptions		-0.042		Miscellaneous Adjustments			-7.994	Subtotal	0	-5.325	-7.994
Funding:	FY 05	FY 06	FY 07																																															
Previous President's Budget:	0.000	9.187	7.994																																															
Current BES/President's Budget:	0.000	3.862	0.000																																															
Total Adjustments	0.000	-5.325	-7.994																																															
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Congressional Increases																																																		
Economic Assumptions		-0.042																																																
Miscellaneous Adjustments			-7.994																																															
Subtotal	0	-5.325	-7.994																																															

R-1 SHOPPING LIST - 202

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 3135 USMC VUAV
<p><b>D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <p>Not Applicable</p> <p><b>E. ACQUISITION STRATEGY:</b></p> <p>Conduct a follow-on Analysis of Alternatives (AoA) for the current Marine Corps Pioneer UAV.</p>		

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			3135 USMC VUAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Studies & Analyses	TBD	TBD				3.600	04/06				3.600	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		3.600		0.000			3.600	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2006</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-7</b>			0305204N Tactical Unmanned Aerial Vehicles			3135 USMC VJAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River, MD				0.130	02/06				0.130	
Program Management Support	TBD	TBD				0.132	02/06				0.132	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.262		0.000		0.000	0.262	
Remarks:												
Total Cost			0.000	0.000		3.862		0.000		0.000	3.862	
Remarks:												

R-1 SHOPPING LIST - 202

# UNCLASSIFIED

**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 33 of 43)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 7</b>					PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles									PROJECT NUMBER AND NAME 3135 USMC VUAV																		
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>							AcA																									
<b>Test &amp; Evaluation Milestones</b>																																



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 9650 Advanced Airship Flying Laboratory			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9650 Advanced Airship Flying Lab		<b>2.971</b>						
RDT&E Articles Qty - Not Applicable								

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

Congressional Add of \$3.0M, less \$.029M Congressional undistributed reductions. The Navy needs efficient airborne platforms for the development and test of transformational airborne sensors and platforms. Airships boast very low cost-per-hour operation and can economically support those portions of flight-testing that concentrate on sensor performance (vice platform integration).

Develop an airship-based platform for affordable testing of transformational airborne sensors in a stable, vibration-free, laboratory-like environment. Conduct initial capability studies for development of a modernized naval airship featuring contemporary composites, digital flight controls, vectored thrust and remote piloted capabilities that can provide immediate utility for missions requiring heavy lift (logistics and/or sensor suites), long endurance (measured in days vs. hours), and persistent broad-area Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems.

The FY 2006 Congressional add for Advanced Airship Flying Laboratory Phase II is reflected in project 9999.

R-1 SHOPPING LIST - 202

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2006</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9650 Advanced Airship Flying Laboratory																	
<b>B. Accomplishments/Planned Program</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;"></th> <th style="width: 15%;">FY 05</th> <th style="width: 15%;">FY 06</th> <th style="width: 15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td style="text-align: center;">2.650</td> <td></td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost		2.650			RDT&E Articles Quantity				
		FY 05	FY 06	FY 07															
Accomplishments/Effort/Subtotal Cost		2.650																	
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px; min-height: 40px;">                     Develop new technologies to advance modern airships, such as digital automated flight controls, bow thrusters, and heavy fuel engines.                 </div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;"></th> <th style="width: 15%;">FY 05</th> <th style="width: 15%;">FY 06</th> <th style="width: 15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td style="text-align: center;">0.321</td> <td></td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost		0.321			RDT&E Articles Quantity				
		FY 05	FY 06	FY 07															
Accomplishments/Effort/Subtotal Cost		0.321																	
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px; min-height: 40px;">                     Government Engineering Support, contractor support services, and travel.                 </div>																			

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9650 Advanced Airship Flying Laboratory		
<b>C. PROGRAM CHANGE SUMMARY:</b>				
Funding:		FY 05	FY 06	FY 07
Previous President's Budget:		2.972	0.000	0.000
Current BES/President's Budget:		2.971		
Total Adjustments		-0.001	0.000	0.000
Summary of Adjustments				
Congressional Reductions				
Congressional Rescissions				
Congressional Undistributed Reductions		-0.002		
Congressional Increases				
Economic Assumptions				
Miscellaneous Adjustments		0.001		
Subtotal		-0.001	0.000	0.000
Schedule:				
Not applicable				
Technical:				
Not Applicable				

R-1 SHOPPING LIST - 202

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9650 Advanced Airship Flying Laboratory
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>  Not Applicable		
<b>E. ACQUISITION STRATEGY:</b>  Not Applicable		

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 9999, Congressional Adds			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9999 Congressional Adds			24.700					
RDT&E Articles Qty			2 *					

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

**Congressional Adds.**

**Joint Operational Test Bed System (JOTBS) (\$3.0M)**

The Joint Operational Test Bed System is an experimental, ground-based control system that is designed to fly, operate and receive data from all the services; individual UAVs from a single interface.

**Fire Scout RQ-8B (MQ-8B) (\$17.0M)**

The Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) was designed to provide real-time intelligence, surveillance and reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay). The VTUAV launches and recovers vertically and can operate from all 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 ability to incorporate 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, through implementation of NATO Standardization Agreement (STANAG) 4586 and through the use of the Tactical Common Data Link (TCDL). The data from the VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.

A program to continue development of the VTUAV to meet the Littoral Combat Ship (LCS) mission requirements was initiated in FY04. Engineering and Manufacturing Development (EMD) is continuing in FY07 and will include design activities for system upgrades, and TCS integration. Fabrication of the RQ-8A LRIP 1 system was completed in FY03. Procurement of two EMD MQ-8B Air Vehicles was initiated in FY04, two additional EMD MQ-8B Air Vehicles initiated in FY05, and five EMD MQ-8B Air Vehicles will be initiated in FY06. Two of the five articles initiated in FY06 are funded by this Congressional plus-up, and identified in this exhibit.

\* These quantities are also reflected in project 2768 for display purposes. The total quantity in FY06 is 5 air vehicles.

**Center for Coastline Security Technology (\$2.2M)**

Congressional Add in RDTE,N for the Coastline Security Technology Initiative that is only for continuation of work with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along US Coastlines.

**Advanced Airship Flying Laboratory Phase II (\$2.5M)**

Capability studies for development of a modernized naval airship featuring contemporary composited, digital flight controls, vectored thrust and remote piloted capabilities that can provide immediate utility for missions requiring heavy lift (logistics and/or sensor suites), long endurance (measured in days vs. hours), and persistent broad-area Intelligence, Surveillance, and Reconnaissance (ISR).

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 40 of 43)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9999 Congressional Adds

**B. Accomplishments/Planned Program**

2478		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			3.000	
RDT&E Articles Quantity				

Joint Operational test bed systems. Continue JOTBS enhancements and support of UAV experimentation.

2768		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			17.000	
RDT&E Articles Quantity			2	

Fire Scout RQ-8B (MQ-8B): Continue incremental procurement, development, and integration of VTUAV EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program.

9432		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			2.200	
RDT&E Articles Quantity				

Office of Naval Research (ONR) is working with the Institute for Ocean and Systems Engineering to develop surface and airborne autonomous and remotely operated platform surveillance systems for deployment along US Coastlines.

9650		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			2.500	
RDT&E Articles Quantity				

Advanced airship flying laboratory Phase II. 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9999 Congressional Adds																																																				
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R-1 SHOPPING LIST - 202

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 9999 Congressional Adds
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>  Not Applicable		
<b>E. ACQUISITION STRATEGY:</b>  Not Applicable		

R-1 SHOPPING LIST - 202

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>	R-1 ITEM NOMENCLATURE 0305205N Endurance Unmanned Aerial Vehicles
---	--

COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		64.045	0.000	26.357	118.964	251.780	240.494	124.989
3061 Global Hawk Maritime Demonstration		24.700						
4020 BAMS UAV		39.345	0.000	26.357	118.964	251.780	240.494	124.989

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

This program element provides for the development of High Altitude Endurance (HAE) Unmanned Aerial Vehicle (UAV) Systems for DoD that provide warfighters with the dedicated capability for Broad Area Maritime Surveillance (BAMS) as standoff persistent, Intelligence, Surveillance and Reconnaissance (ISR) asset. This program includes:

**Broad Area Maritime Surveillance (BAMS) UAV.** Along with the Multi-mission Maritime Aircraft (MMA), the BAMS UAV is integral in recapitalizing the Navy's airborne ISR force. BAMS UAV will provide a persistent maritime ISR capability that will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, BAMS UAV's on-station persistence enables unmatched awareness of the maritime battlespace by sustaining the maritime common operational picture for Surface Warfare (SUW) and Global War On Terrorism (GWOT). The system will serve as a Fleet Response Plan enabler while acting as a trip wire for surge forces.

BAMS UAV will be an endurance-class UAV that will operate from land-based sites around the world. Because BAMS UAV and the MMA/P-3 have related, complementary missions, it is intended that BAMS UAV be an adjunct to the P-3 community to enhance manpower, training and maintenance efficiencies. Systems of up to 5-6 air vehicles at each operating location provide persistence by being airborne 24 hours a day, 7 days a week out to on-station ranges of 2,000 nautical miles. Worldwide access will be achieved by providing coverage over nearly all the world's high-density sea-lanes, littorals, and areas of national interest from its operating locations.

BAMS UAV sensor capabilities will include active imaging radar, passive optical imaging, and limited signals collection. Additionally it will have a communications relay capability linking dispersed forces in the theater of operation and serving as a communications node in the Navy's FORCEnet strategy. The BAMS UAV will contribute to providing the Fleet Commander a common operational tactical picture of the battlespace day and night. It will queue other Navy assets for further situational investigation and/or attack, and after attack, will provide battle damage assessment. Data analysis will occur in real-time at shore installations via satellite reach back. Further exploitation can be conducted at shore-based exploitation sites or aboard CVNs / LHDs.

**Global Hawk Maritime Demonstration (GHMD) Program.** As part of a transformational initiative begun in the fall of 2001, the Navy is procuring two Global Hawk UAVs from the Air Force to support Naval ISR concepts of operation and tactics, training and techniques development; Fleet exercises and familiarization; and cultural acclimation. The program, known as the GHMD Program, participated in the TRIDENT WARRIOR 05 Fleet exercise in December 05.

Capitalizing on an existing production line, the Navy, in February 2003, contracted through the Air Force Global Hawk Program Office for the purchase of two Global Hawk air vehicles, one mission control element (MCE), two launch and recovery elements (LREs), and related support equipment from Northrop Grumman. Baseline sensors include electro-optical, infrared, and synthetic aperture radar. The Navy Global Hawks are identical to the Air Force's except for the inclusion of radar software modifications with inverse synthetic aperture radar (ISAR) and maritime moving target indicator (MMTI) modes that provide limited capabilities in a maritime environment, and LR-100 hardware modules that provide direction-sensing capability of radar emitting targets. GHMD assets will be based at Patuxent River, MD.

Note: \$14.5M in FY 2005 BAMS UAV funds will be used to forward finance FY2006 efforts.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 3061 Global Hawk Maritime Demonstration			
COST (\$ in Millions)	FY2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3061 Global Hawk Maritime Demonstration	<b>24.700</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
RDT&E Articles Qty								

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

**Global Hawk Maritime Demonstration (GHMD) Program.** As part of a transformational initiative begun in the fall of 2001, the Navy is procuring two Global Hawk UAVs from the Air Force to support Naval ISR concepts of operation and tactics, training and techniques development; Fleet exercises and familiarization; and cultural acclimation. The program, known as the GHMD Program, participated in the TRIDENT WARRIOR 05 Fleet exercise in December 05.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 3061 Global Hawk Maritime Demonstration		
<b>B. Accomplishments/Planned Program</b>				
		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		24.700	0.000	0.000
RDT&E Articles Quantity				
<p>Spares buy for Global Hawk Maritime Demonstration (GHMD) program.</p>				

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**UNCLASSIFIED**



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R-1 SHOPPING LIST - Item No. 203

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 3061 Global Hawk Maritime Demonstration
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable									

**E. ACQUISITION STRATEGY:**

Not Applicable

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME 4020 BAMS UAV			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
4020 BAMS UAV	<b>39.345</b>	<b>0.000</b>	<b>26.357</b>	<b>118.964</b>	<b>251.780</b>	<b>240.494</b>	<b>124.989</b>	
RDT&E Articles Qty								

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

**Broad Area Maritime Surveillance (BAMS) UAV.** Along with the Multi-mission Maritime Aircraft (MMA), the BAMS UAV is integral in recapitalizing the Navy's airborne intelligence, surveillance, and reconnaissance (ISR) force. BAMS UAV will provide a persistent maritime ISR capability that will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, BAMS UAV's on-station persistence enables unmatched awareness of the maritime battlespace by sustaining the maritime common operational tactical picture for Surface Warfare (SUW) and Global War On Terrorism (GWOT). The system will serve as a Fleet Response Plan enabler while acting as a trip wire for surge forces.

BAMS UAV will be an endurance-class UAV that will operate from land-based sites around the world. Because BAMS UAV and the MMA/P-3 have related, complementary missions, it is intended that BAMS UAV be an adjunct to the P-3 community to enhance manpower, training and maintenance efficiencies. Systems of up to 5-6 air vehicles at each operating location provide persistence by being airborne 24 hours a day, 7 days a week out to on-station ranges of 2,000 nautical miles. Worldwide access will be achieved by providing coverage over nearly all the world's high-density sea-lanes, littorals, and areas of national interest from its operating locations.

BAMS UAV sensor capabilities will include active imaging radar, passive optical imaging, and limited signals collection. Additionally it will have a communications relay capability linking dispersed forces in the theater of operation and serving as a communications node in the Navy's FORCENet strategy. The BAMS UAV will contribute to providing the Fleet Commander a common operational tactical picture of the battlespace day and night. It will queue other Navy assets for further situational investigation and/or attack, and after attack, will provide battle damage assessment. Data analysis will occur in real-time at shore installations via satellite reach back. Further exploitation can be conducted at shore-based exploitation sites or aboard CVNs / LHDs.

The program is in a pre-Milestone B phase over FY05-07 that will address technical risk reduction. Milestone B is planned for late FY07 and, based on a competitive system integrator selection process, the System Development and Demonstration (SDD) phase will begin in FY08. Low rate initial production is planned for FY11, with deliveries supporting an initial operational capability (IOC) in FY13.

The BAMS UAV ORD was signed by the CNO 17 May 2004. The BAMS requirements are being updated through the Joint Capabilities Integration and Development System (JCIDS) process. Two mission needs statement (MNS) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability MNS.

The BAMS UAV will be an evolutionary based acquisition and will use a competitive acquisition strategy. The program will be conducting pre-systems acquisition activities prior to MS B. These activities will consist of documentation development, demonstrations, and study contracts. FY 2005 funding is being used to forward finance FY 2006 requirements.

R-1 SHOPPING LIST - Item No. 203

# UNCLASSIFIED

**Exhibit R-2, RDTE Budget Item Justification**  
(Exhibit R-2, page 6 of 13)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 4020 BAMS UAV

**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		12.019		7.018
RDT&E Articles Quantity				

Industry contracts are being used to obtain UAV air vehicle and sensor performance data. Contracts will be used to support the demonstrations and risk reductions.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		9.776		5.503
RDT&E Articles Quantity				

Contractor Support Services, Program Management Support and Travel.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		17.550		13.836
RDT&E Articles Quantity				

Activities include requirement flow-down and development of functional and detailed systems specifications (including air vehicle and ground station avionics, software and logistics); conduct systems trade studies; solicitation activities; development of milestone and acquisition-related documentation; capability refinement and open systems architecture development; metric development and tracking; affordability assessments and cost analyses; test and evaluation planning, demonstrations using surrogate and UAV platforms; logistics supportability analyses and environmental planning; development of manpower and basing assessments; risk reduction and risk management; system integration and interoperability planning; systems engineering and technology maturity reviews; program protection planning, corrosion prevention planning, anti-tamper provisioning planning, and Joint and International Cooperation.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME 4020 BAMS UAV
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
APN 044200 BAMS UAV							304.236		
APN Initial Spares: 060510 BAMS UAV							6.654		

**E. ACQUISITION STRATEGY:**

The BAMS UAV Program will develop and field a persistent maritime ISR capability. Commercial of-the-shelf (COTS) technology will be utilized to the greatest extent possible for all segments of the BAMS UAV system (i.e., air vehicle, ground segment and payloads).

The BAMS UAV will be an evolutionary based acquisition. The program is in a pre-Milestone B phase over FY05-07 that will address technical risk reduction. Milestone B is planned for late FY07 and, based on a competitive system integrator selection process, the System Development and Demonstration (SDD) phase will begin in FY08. Low rate initial production is planned for FY11, with deliveries supporting an initial operational capability (IOC) in FY13.

R-1 SHOPPING LIST - Item No. 203

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305205N Endurance Unmanned Aerial Vehicles			4020 BAMS UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Studies & Analysis	Various	Various		12.019	08/05			7.018	11/06	0.000	19.037	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	12.019		0.000		7.018		0.000	19.037	
Remarks:												
Development Support/Demo's	Various	Various		3.191	02/05			2.268	11/06		5.459	
Software Development											0.000	
Integrated Logistics Support	Various	Various	2.196	1.739	12/04			1.245	11/06	Continuing	Continuing	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	Various	Various		3.424	02/05			3.655	11/06	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.196	8.354		0.000		7.168		Continuing	Continuing	
Remarks:.												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0305205N Endurance Unmanned Aerial Vehicles			4020 BAMS UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation										Continuing	Continuing	
Operational Test & Evaluation										Continuing	Continuing	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various	0.512	0.822	12/04			0.972	11/06	Continuing	Continuing	
Government Engineering Support	WX	Various	12.523	9.196	12/04			6.668	11/06	Continuing	Continuing	
Program Management Support	Various	Various	4.500	8.804	02/05			4.456	11/06	Continuing	Continuing	
Travel	TO	NAVAIR-HQ, Pax River, MD	0.075	0.150	10/04			0.075	10/06	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			17.610	18.972		0.000		12.171		Continuing	Continuing	
Remarks:												
Total Cost			19.806	39.345		0.000		26.357		Continuing	Continuing	
Remarks:												

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**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 11 of 13)



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>								PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles								PROJECT NUMBER AND NAME 4020 BAMS UAV																
Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>												MS B △																				MS C △
<b>Systems Engineering Activities</b>					Pre-Systems Acquisition Activities																											
<b>Contracting Various Activities</b>																																
<b>Test &amp; Evaluation Activities</b>																																
<b>System Deliveries</b>																																

R-1 SHOPPING LIST - Item No. 203

# UNCLASSIFIED



EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0305206N, AIRBORNE RECONNAISSANCE SYSTEMS		
BA 7								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	13.866	31.399	35.038	35.417	36.629	26.876	27.212	
2694 ADVANCED SIGNAL RECOGNITION	9.517	27.499	35.038	35.417	36.629	26.876	27.212	
2807 Hyperspectral Upgrade to Airborne Cameras	3.361							
9651 Passive Collision Avoidance and Recon	.988							
9999 CONGRESSIONAL ADD		3.900						

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

In FY05, the advanced sensor developments provided the technology transition modules for operational use necessary to support the EP-3E JMOD Common Configuration (JCC) program and provide the mechanism required for timely dissemination of intelligence information to operational forces.

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 (ARITA). 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 Special Projects (SP) 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 Integrated Airborne Reconnaissance Strategy (IARS). These technology investments are also identified in the Airborne Reconnaissance Technology Program Plan (ARTPP), published in November 1994. Congress added funds in FY 2005 to (1) Initiate flight test preparations for Advanced Camera, (2) assess effectiveness of target detection and false alarm rejection algorithms.

EXHIBIT R-2a, RDT&E Project Justification							DATE:		
							February 2006		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N /	BA 7	0305206N, AIRBORNE RECONNAISSANCE SYSTEMS					2694, ADVANCED SIGNAL RECOGNITION		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
2694 ADVANCED DIGITAL SENSORS	9.517	27.499	35.038	35.417	36.629	26.876	27.212		
RDT&E Articles Qty		1		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 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, 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 (est. 2017 IOC, 2019 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 to support the system Low Rate Initial Production (LRIP) Decision in FY08. 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) in FY10 and the Full Rate Production (FRP) Decision and procurement in FY11. 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.

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.

EXHIBIT R-2a, RDT&E Project Justification				DATE:
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0305206N, AIRBORNE RECONNAISSANCE SYSTEMS</b>		February 2006
PROJECT NUMBER AND NAME 2694, ADVANCED SIGNAL RECOGNITION				
B. ACCOMPLISHMENTS / PLANNED PROGRAM:				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.992	.556		
RDT&E Articles Qty				
Spiral 1 integration and test includes high band and special collection subsystems (Story Finder and MPEG) and data dissemination (Story Teller), developed under 2694 in previous years.				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	2.603	8.790	2.586	
RDT&E Articles Qty		1		
Restructured Spiral 2 development includes, obsolescence and data fusion capabilities. Additional special collection signal capabilities, Data Fusion and MPEG frequency extension development. Procure one Engineering Development Model (EDM) in FY06 for FY07 Developmental Testing (DT).				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		3.400	17.342	
RDT&E Articles Qty				
Spiral 3 development includes low-band Radio Frequency Distribution (RFD) and Direction Finding (DF) subsystem replacement, Data Communication equipment replacement, special signal processing and exploitation upgrades, Remote Tuning Receivers, Intergrated Information Operations (I/O) and Environmental Control System (ECS) upgrades.				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost		2.383	6.875	
RDT&E Articles Qty				
The Technical Refresh and Obsolescence includes QRCs, low-band Radio Frequency Distribution (RFD) and Direction Finding (DF) subsystem replacement, Data Communications equipment replacement and special signal processing upgrades, as well as development of solutions for emerging obsolescence discovered via Diminishing Manufacturing Sources and Material Shortages (DMS&MS) process.				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	3.922	12.370	8.235	
RDT&E Articles Qty				
Imagery engineering investigations completed. Developed and demonstrated Special Projects (SP) Direction Finding (DF) upgrades for SP Systems Requirements Review (SRR). SP Communications/Infrastructure updated. Special Projects 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.				

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
RDT&E, N /		BA 7		0305206N, AIRBORNE RECONNAISSANCE SYSTEMS			2694, ADVANCED SIGNAL RECOGNITION			
<b>C. PROGRAM CHANGE SUMMARY</b>										
Funding:		FY 2005	FY 2006	FY 2007						
Previous President's Budget:		10.023	27.918	17.732						
Current BES / President's Budget:		9.517	27.499	35.038						
Total Adjustments		-0.506	-0.419	17.306						
Summary of Adjustments										
Congressional Reductions										
Congressional Rescissions										
		-0.008	-0.292							
Congressional Increases										
		0.002								
Economic Assumptions										
			-0.127	0.142						
Miscellaneous Adjustments										
		-0.500		17.164						
	Subtotal	-0.506	-0.419	17.306						
Schedule: Adjustments due to program restructure to maintain EP-3 mission system viability until platform recapitalization.										
T&E Milestones - Spiral 2 DT moved from 3Q/06 to 2Q/07. Spiral 2 OT moved from 1Q/07 to 3Q/08. Spiral 3 DT 2Q/09. Spiral 3 OT 3Q/10.										
Contract Milestones - Spiral 2 EDM 2Q/06. Spiral 3 EDM-1 1Q/08. Spiral 3 EDM-2 1Q/09.										
Technical: Not Applicable										
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
Line Item # 34	APN-5 EP-3E (OSIP 11-01)	33.441	43.435	56.797	46.825	58.736	94.786	104.936	250.140	841.640
Line Item # 45	Special Projects Aircraft (OSIP 19-97)	16.513	26.304	14.300	14.665	14.962	15.176	15.473	95.723	311.705
<b>E. ACQUISITION STRATEGY:</b> Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDT&E efforts for technology insertions into EP-3E/SPA production programs.										

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /		0305206N, AIRBORNE RECONNAISSANCE SYSTEMS				2694 Advanced Signal Recognition						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Ancillary Hdw Develop - Spiral 1	SS-CPFF	L-3 COM. INTEGRATED SYS. WACO,TX		.462	2/28/2005						.462	.462
Ancillary Hdw Develop - Spiral 2	SS-CPFF	L-3 COM. INTEGRATED SYS. WACO,TX		1.880	5/31/2005	5.687	3/30/2006	1.480	12/30/2006		9.047	9.047
Ancillary Hdw Develop - Spiral 3	SS-CPFF	RAYTHEON TECH SVCS. INDY.IN				3.214	3/30/2006			Continuing	Continuing	
Ancillary Hdw Develop - Spiral 3	SS-CPFF	L-3 COM. INTEGRATED SYS. WACO,TX						13.138	12/30/2006	Continuing	Continuing	
Ancillary Hdw Development - OBS	SS-CPFF	L-3 COM. INTEGRATED SYS. WACO,TX				.780	3/30/2006	.600	12/30/2006	Continuing	Continuing	
Ancillary Hdw Development - OBS	TBD	TBD						5.430	12/30/2006	Continuing	Continuing	
Ancillary Hdw Development - SPA	SS-CPFF	ZETA ASS INC, FAIRFAX, VA				.648	3/30/2006	.900	12/30/2006	Continuing	Continuing	
Ancillary Hdw Development - SPA	SS-CPFF	ARGON ENG ASS, INC., FAIRFAX, VA	2.500	.920	12/30/2004	8.950	4/30/2006	3.750	12/30/2006	Continuing	Continuing	
Ancillary Hdw Develop - SPA	SS-CPFF	L-3 COM. INTEGRATED SYS. WACO,TX		2.240	12/30/2004			.400	12/30/2006	Continuing	Continuing	
Ancillary Hdw Develop - SPA	TBD	TBD				.300	3/30/2006	.200	12/30/2006	Continuing	Continuing	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>			2.500	5.502		19.579		25.898		Continuing	Continuing	
Remarks:												
<b>SUPPORT</b>												
Develop Support - Spiral 1	VARIOUS	VARIOUS		2.475	1/30/2005	.500	12/30/2005				2.975	2.975
Develop Support - Spiral 2	VARIOUS	VARIOUS		.451	1/30/2005	1.604	12/30/2005	.320	12/30/2006		2.375	2.375
Develop Support - Spiral 3	VARIOUS	VARIOUS				.150	12/30/2005	4.150	12/30/2006	Continuing	Continuing	
Develop Support - Obsolescence	VARIOUS	VARIOUS				1.548	3/30/2006	.600	12/30/2006	Continuing	Continuing	
Develop Support - SPA	VARIOUS	VARIOUS		.372	1/30/2005	1.867	12/30/2005	2.330	12/30/2006	Continuing	Continuing	
<b>SUBTOTAL SUPPORT</b>				3.298		5.669		7.400		Continuing	Continuing	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
DT/OT & Eval - Spiral 1	WX	VARIOUS				.056	12/30/2005				.056	.056
DT/OT & Eval - Spiral 2	WX	VARIOUS				1.262	12/30/2005	.750	12/30/2006	Continuing	Continuing	
Dev Test & Eval SPA	WX	VARIOUS	.520	.335	1/30/2005	.550	12/30/2005	.600	12/30/2006	Continuing	Continuing	
<b>SUBTOTAL TEST &amp; EVALUATION</b>			.520	.335		1.868		1.350		Continuing	Continuing	
Remarks:												
<b>MANAGEMENT</b>												
Systems Eng Support - Spiral 2	WX	NAWCAD, PATUXENT RIVER MD	1.000	.217	1/30/2005	.181	12/30/2005				1.398	1.398
Systems Eng Support - OBS	WX	NAWCAD, PATUXENT RIVER MD						.190	12/30/2006	Continuing	Continuing	
Travel - Spiral 1	TO	NAVAIR HQ, PATUXENT RIVER MD	.200	.055	1/30/2005						.255	.255
Travel - Spiral 2	TO	NAVAIR HQ, PATUXENT RIVER MD		.055	1/30/2005	.055	12/30/2005	.036	12/30/2006	Continuing	Continuing	
Travel - Spiral 3	TO	NAVAIR HQ, PATUXENT RIVER MD				.037	12/30/2005	.054	12/30/2006	Continuing	Continuing	
Travel - Obsolescence	TO	NAVAIR HQ, PATUXENT RIVER MD				.055	12/30/2005	.055	12/30/2006	Continuing	Continuing	
Travel - SPA	TO	NAVAIR HQ, PATUXENT RIVER MD	.250	.055	1/30/2005	.055	12/30/2005	.055	12/30/2006	Continuing	Continuing	
<b>SUBTOTAL MANAGEMENT</b>			1.450	.382		.383		.390	12/30/2006	Continuing	Continuing	
Remarks:												
<b>Total Cost</b>			4.470	9.517		27.499		35.038		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>					
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-7</b>					0305206N Airborne Reconnaissance Systems										2694 Advanced Signal Recognition													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Program Milestones</b>																												
<b>Engineering Milestones</b>																												
<b>Test &amp; Evaluation Milestones</b>																												
Development Test																												
Development Test/ Operational Test																												
<b>Contract Milestones</b>																												
<div style="display: flex; justify-content: space-between;"> <div style="width: 10%;">Spiral 1 - DT</div> <div style="width: 10%;">Spiral 2 - DT</div> <div style="width: 10%;">Spiral 3 - DT</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 10%;">Spiral 1 - OT</div> <div style="width: 10%;">Spiral 2 - OT</div> <div style="width: 10%;">Spiral 3 - OT</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 10%;">*JCC Contract</div> <div style="width: 10%;">Spiral 2 EDM</div> <div style="width: 10%;">Spiral 3 EDM-1</div> <div style="width: 10%;">Spiral 3 EDM-2</div> </div>																												

\* JCC Contract award includes Spiral 1 and Spiral 2



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Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME 2694 Advanced Signal Recognition			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Spiral 1 DT		3Q-4Q	1Q					
Spiral 1 OT			1Q-2Q					
Spiral 2 DT				2Q-4Q				
Spiral 2 OT					3Q-4Q			
Spiral 3 DT						2Q-4Q		
Spiral 3 OT							3Q-4Q	
JCC Contract Award		3Q						
Spiral 2 EDM			2Q					
Spiral 3 EDM-1					1Q			
Spiral 3 EDM-2						1Q		

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>			PROGRAM ELEMENT NUMBER AND NAME <b>0305206N, AIRBORNE RECONNAISSANCE SYSTEM</b>				PROJECT NUMBER AND NAME <b>2807, HYPERSPECTRAL UPGRADE</b>			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
2807, HYPERSPECTRAL UPGRADE		3.361								
RDT&E Articles Qty										
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
Congressional add										
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>			PROGRAM ELEMENT NUMBER AND NAME <b>0305206N, AIRBORNE RECONNAISSANCE SYSTEM</b>				PROJECT NUMBER AND NAME <b>2807, HYPERSPECTRAL UPGRADE</b>			
B. ACCOMPLISHMENTS / PLANNED PROGRAM:										
2807		FY 2005	FY 2006	FY 2007						
Accomplishments / Effort / Sub-total Cost		3.361								
RDT&E Articles Qty										
Hyperspectral Upgrade to Airborne Cameras										
The Congressional add supports the Hyperspectral Upgrade to Airborne Cameras.										
C. PROGRAM CHANGE SUMMARY										
Funding:		FY 2005	FY 2006	FY 2007						
Previous President's Budget:		3.363								
Current BES / President's Budget:		3.361								
Total Adjustments		-0.002								
Summary of Adjustments										
Congressional Reductions										
Congressional Rescissions										
Congressional Undistributed Reductions		-0.003								
Congressional Increases		0.001								
Economic Assumptions										
Miscellaneous Adjustments										
Subtotal		-0.002								
Schedule: Not Applicable										
Technical: Not Applicable										
D. OTHER PROGRAM FUNDING SUMMARY:		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
E. ACQUISITION STRATEGY:										

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7			PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEM				PROJECT NUMBER AND NAME 9651, PASSIVE COLLISION AVOIDANCE & RECON			
COST (\$ in Millions)			FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010		
9651, PASSIVE COLLISION AVOIDANCE & RECON			.988							
RDT&E Articles Qty										
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
Congressional add										
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7			PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEM				PROJECT NUMBER AND NAME 9651, PASSIVE COLLISION AVOIDANCE & RECON			
B. ACCOMPLISHMENTS / PLANNED PROGRAM:										
9651			FY 2005	FY 2006	FY 2007					
Accomplishments / Effort / Sub-total Cost			.988							
RDT&E Articles Qty										
Passive Collision Avoidance and Reconnaissance										
The Congressional add supports the Passive Collision Avoidance and Reconnaissance.										
C. PROGRAM CHANGE SUMMARY										
Funding:		FY 2005	FY 2006	FY 2007						
Previous President's Budget:		0.989								
Current BES / President's Budget:		0.988								
Total Adjustments		-0.001								
Summary of Adjustments										
Congressional Reductions										
Congressional Rescissions										
Congressional Undistributed Reductions -0.001										
Congressional Increases										
Economic Assumptions										
Miscellaneous Adjustments										
Subtotal		-0.001								
Schedule: Not Applicable										
Technical: Not Applicable										
D. OTHER PROGRAM FUNDING SUMMARY:										
		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
E. ACQUISITION STRATEGY:										

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEM				PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD				
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
9999 CONGRESSIONAL ADD			3.900							
RDT&E Articles Qty										
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
Congressional Add										
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7		PROGRAM ELEMENT NUMBER AND NAME 0305206N, AIRBORNE RECONNAISSANCE SYSTEM				PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD				
B. ACCOMPLISHMENTS / PLANNED PROGRAM:										
9754N		FY 2005	FY 2006	FY 2007						
Accomplishments / Effort / Sub-total Cost			3.900							
RDT&E Articles Qty										
Deployable UAV System for Targeting Exploitation and Reconnaissance (DUSTER)										
The Congressional add supports the Deployable UAV System for Targeting Exploitation and Reconnaissance (DUSTER).										
C. PROGRAM CHANGE SUMMARY										
Funding:		FY 2005	FY 2006	FY 2007						
Previous President's Budget:			0.000							
Current BES / President's Budget:			3.900							
Total Adjustments			3.900							
Summary of Adjustments										
Congressional Reductions										
Congressional Rescissions										
Congressional Undistributed Reductions										
Congressional Increases										
Economic Assumptions										
Miscellaneous Adjustments										
	Subtotal		3.900							
Schedule: Not Applicable										
Technical: Not Applicable										
D. OTHER PROGRAM FUNDING SUMMARY:										
		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
E. ACQUISITION STRATEGY:										

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME 2174/9440/9652 CIGSS/ETSS/PAX Node		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	13.029	12.141	16.587	10.748	8.226	8.876	9.026
2174 CIGSS (DCGS-N)	6.494	12.141	16.587	10.748	8.226	8.876	9.026
9440 Enterprise Targeting and Strike System	2.772						
9652 TES-N/DCGS-N Node at PAX River	3.763						

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

As outlined in the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN RDA) Memorandum dated 23 JAN 2004, ASN RDA has directed the programmatic merging of the previously separate Joint Service Imagery Processing System-Navy (JSIPS-N) and Joint Fires Network (JFN) programs. This new, merged program construct is hereafter referred to as the Distributed Common Ground Station-Navy (DCGS-N). Attendant to this merger, the Office of the Secretary of Defense (OSD) directed that all Budget Line Items (BLIs) associated with Program Elements (PEs) 0305208N (JSIPS-N) and 0204228N (JFN) be programmatically merged in FY05, and finally combined under the existing 0305208N PE beginning FY06 throughout the balance of the merged program life cycle. As such, the FY05 through FY06 funding breakouts represent the post merge DCGS-N merged program construct.

The Distributed Common Ground System – Navy (DCGS-N) is the Navy’s portion of the OSD DCGS effort. DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of automating, coordinating, and correlating, in real time, the reception, processing, exploiting, storing and disseminating of multiple source intelligence (MULTI-INT) from airborne and national reconnaissance assets to provide time-critical fire control solutions for advanced weapon systems and sensors and situational awareness to support C2 decision making and planning. DCGS utilizes the entire spectrum of available intelligence data including Signals Intelligence (SIGINT) data, Multi-Intelligence Reconnaissance data, and Imagery Intelligence (IMINT). The automation/correlation provided by DCGS-N will provide the Navy an ability to quickly target and re-target precision strike weapons, greatly enhancing their effectiveness and lethality.

DCGS-N brings together the proven imagery exploitation capabilities of Joint Services Imagery Processing System – Navy (JSIPS-N) Tactical Input Segment (TIS) and the precision mensuration capability of the Precision Targeting Workstation (PTW) and merges them with the Time Critical Strike/Targeting (TCS/T) capability developed by the Joint Fires Network (JFN) and disseminates this throughout the ashore and afloat nodes through the Joint Concentrator Architecture (JCA). This converged capability provides unparalleled flexibility to the warfighter and rapid response capability against rapidly relocatable, time critical targets.

DCGS-N will become part of the DoD DCGS Network Enterprise via the DCGS Integration Backbone (DIB). Engineering work is funded to migrate legacy JFN/JSIPS systems to this network environment. As DCGS 10.2 is developed by the Air Force, DCGS-N will stay abreast of expanding requirements and ensure compliance with the DoD DCGS network architecture.

DCGS-N procurement plans are based on the purchase of two (2) DCGS-N 1.0 Systems in FY05 for installation in FY06 and OPEVAL in FY07. Post testing, the program plan is based on the procurement of six (6) DCGS-N Systems in FY07, twelve (12) systems in FY08, seven (7) systems in FY09 and seven (7) systems in FY10. These new installations will replace the existing legacy JSIPS/JFN systems currently fielded. This purchase profile reaches the required 34 system FOC target and removes all legacy systems by EOY FY10. Beginning in FY10, Commercial-off-the-Shelf (COTS) refreshes of the 34 existing systems will begin.

R-1 SHOPPING LIST - Item No. 206

# UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME 2174/9440/9652 CIGSS/ETSS/PAX Node			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>13.029*</b>	<b>12.141</b>	<b>16.587</b>	<b>10.748</b>	<b>8.226</b>	<b>8.876</b>	<b>9.026</b>
RDT&E Articles Qty							
<p>*Funding includes FY05 Congressional adds for: DCGS-N Node Pax River - \$3.763M, Enterprise Targeting and Strike System - \$2.772.M</p> <p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> As outlined in the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN RDA) Memorandum dated 23 JAN 2004, ASN RDA has directed the programmatic merging of the previously separate Joint Service Imagery Processing System-Navy (JSIPS-N) and Joint Fires Network (JFN) programs. This new, merged program construct is hereafter referred to as the Distributed Common Ground Station-Navy (DCGS-N). Attendant to this merger, the Office of the Secretary of Defense (OSD) directed that all Budget Line Items (BLIs) associated with Program Elements (PEs) 0305208N (JSIPS-N) and 0204228N (JFN) be programmatically merged in FY05, and finally combined under the existing 0305208N PE beginning FY06 throughout the balance of the merged program life cycle. As such, the FY05 through FY06 funding breakouts represent the post merge DCGS-N merged program construct.</p> <p>The Distributed Common Ground System – Navy (DCGS-N) is the Navy's portion of the OSD DCGS effort. DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of automating, coordinating, and correlating, in real time, the reception, processing, exploiting, storing and disseminating of multiple source intelligence (MULTI-INT) from airborne and national reconnaissance assets to provide time-critical fire control solutions for advanced weapon systems and sensors and situational awareness to support C2 decision making and planning. DCGS utilizes the entire spectrum of available intelligence data including Signals Intelligence (SIGINT) data, Multi-Intelligence Reconnaissance data, and Imagery Intelligence (IMINT). The automation/correlation provided by DCGS-N will provide the Navy an ability to quickly target and re-target precision strike weapons, greatly enhancing their effectiveness and lethality.</p> <p>DCGS-N brings together the proven imagery exploitation capabilities of Joint Services Imagery Processing System – Navy (JSIPS-N) Tactical Input Segment (TIS) and the precision mensuration capability of the Precision Targeting Workstation (PTW) and merges them with the Time Critical Strike/Targeting (TCS/T) capability developed by the Joint Fires Network (JFN) and disseminates this throughout the ashore and afloat nodes through the Joint Concentrator Architecture (JCA). This converged capability provides unparalleled flexibility to the warfighter and rapid response capability against rapidly relocatable, time critical targets.</p> <p>DCGS-N will become part of the DoD DCGS Network Enterprise via the DCGS Integration Backbone (DIB). Engineering work is funded to migrate legacy JFN/JSIPS systems to this network environment. As DCGS 10.2 is developed by the Air Force, DCGS-N will stay abreast of expanding requirements and ensure compliance with the DoD DCGS network architecture.</p> <p>DCGS-N procurement plans are based on the purchase of two (2) DCGS-N 1.0 Systems in FY05 for installation in FY06 and OPEVAL in FY07. Post testing, the program plan is based on the procurement of six (6) DCGS-N Systems in FY07, twelve (12) systems in FY08, seven (7) systems in FY09 and seven (7) systems in FY10. These new installations will replace the existing legacy JSIPS/JFN systems currently fielded. This purchase profile reaches the required 34 system FOC target and removes all legacy systems by EOY FY10. Beginning in FY10, Commercial-off-the-Shelf (COTS) refreshes of the 34 existing systems will begin.</p>							

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305208N/Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME 2174 CIGSS

**B. Accomplishments/Planned Program**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.643	6.557	6.174
RDT&E Articles Quantity			

DCGS-N Spiral Development - Primary and ancillary system software design/development and related activities for the DCGS-N Spiral 1. Spiral 1 is currently planned to progress through three major versions during the FY05-FY07 timeframe with design/development activities for v1.0 primarily taking place in FY05, v1.1 primarily taking place in FY06 and v1.2 beginning in FY07.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.129	4.429	4.325
RDT&E Articles Quantity			

DCGS-N Systems Engineering - Requirements derivation and integration activities related to the DCGS-N Spiral 1 and 2. Requirements derivation for the three planned Spiral 1 versions is planned to take place between FY05 and FY07. Integration of system components related to the three versions of Spiral 1 will start in FY05, spanning through FY07 and beyond.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.722	1.155	1.338
RDT&E Articles Quantity			

DCGS-N Test and Evaluation - Combined system T&E activities, both ashore and afloat for the Spiral 1 DCGS-N systems. During the FY05-FY07 timeframe contractor, program level and government activity testing of the DCGS-N Spiral 1 systems will take place in preparation for a planned Spiral 1 OPEVAL in FY07.

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Item No. 206

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 3 of 11)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305208N/Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME 2174 CIGSS	
<b>B. Accomplishments/Planned Program (Cont.)</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	3.000
RDT&E Articles Quantity			
DCGS-N Testbeds - Funds the Navy's contribution to the Distributed Development, Test, Demonstration, and Experimentation Network. This effort will establish a distributed net-centric approach to demonstrate, test, and evaluate DCGS joint interoperability among Service DCGS Integration Labs, Agency test facilities, DCGS Imagery Testbed, and the Joint Systems Integration Center.			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.000
RDT&E Articles Quantity			
Common Security and Discovery Services - Funds to migrate to common security and discovery services via Net-Centric Enterprise Services (NCES) Early Adopter Program. This effort will improve the coordination and the acceleration of the introduction of NCES services into the DCGS/ISR enterprise.			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.750
RDT&E Articles Quantity			
Concept of Operations (CONOPS) - Funds to develop a CONOPS that ensures DCGS interoperability with Services and Coalition partners. This effort is necessary to maximize ISR processing capability and provide a common understanding of the direction and means to the desired end-state.			

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# UNCLASSIFIED

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME 9440/9652 eTSS/PAX River Node
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**CONGRESSIONAL PLUS-UPS:**

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity	2.772	0.000	0.000

Enterprise Targeting and Strike System (eTSS) - Congressional Plus Up to mitigate the risk of legacy component integration with a service-oriented DCGS Integration Backbone (DIB)-like infrastructure by using the eTSS infrastructure. Integration of eTSS in the DCGS-N Spiral 1 effort allows for the development of Navy specific metadata catalog elements, Java Connector Adapters (JCA), Enterprise Java Beans (EJB) and workflows capabilities.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity	3.763	0.000	0.000

DCGS-N Node Pax River - Congressional Plus Up for development of a land-based DCGS-N system at Patuxent River Naval Air Station. This system will support the Maritime Domain Awareness mission supporting the Department of Homeland Security and the Global War on Terror.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0305208N/Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME 2174/9440/9652 CIGSS/ETSS/PAX Node																																							
<b>C. PROGRAM CHANGE SUMMARY:</b>																																									
Funding:		<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">FY 2005</th> <th style="text-align: left;">FY 2006</th> <th style="text-align: left;">FY 2007</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">13.033</td> <td style="text-align: right;">12.354</td> <td style="text-align: right;">11.735</td> </tr> <tr> <td style="text-align: right;">13.029</td> <td style="text-align: right;">12.141</td> <td style="text-align: right;">16.587</td> </tr> <tr> <td style="text-align: right;">-0.004</td> <td style="text-align: right;">-0.213</td> <td style="text-align: right;">4.852</td> </tr> <tr> <td colspan="3" style="padding-top: 5px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 20px;">Congressional Reductions</td> <td style="text-align: right;">-0.157</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Rescissions</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional Undistributed Reductions</td> <td style="text-align: right;">-0.008</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Programmatic Adjustments</td> <td></td> <td style="text-align: right;">4.750</td> </tr> <tr> <td style="padding-left: 20px;">Congressional Increases</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Economic Assumptions</td> <td style="text-align: right;">-0.056</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Miscellaneous Adjustments</td> <td style="text-align: right;">0.004</td> <td style="text-align: right;">0.102</td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right;">-0.004</td> <td style="text-align: right;">4.852</td> </tr> </tbody> </table>	FY 2005	FY 2006	FY 2007	13.033	12.354	11.735	13.029	12.141	16.587	-0.004	-0.213	4.852	Summary of Adjustments			Congressional Reductions	-0.157		Congressional Rescissions			Congressional Undistributed Reductions	-0.008		Programmatic Adjustments		4.750	Congressional Increases			Economic Assumptions	-0.056		Miscellaneous Adjustments	0.004	0.102	Subtotal	-0.004	4.852
FY 2005	FY 2006	FY 2007																																							
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Economic Assumptions	-0.056																																								
Miscellaneous Adjustments	0.004	0.102																																							
Subtotal	-0.004	4.852																																							
<p>Schedule:</p> <p>Post PB06, the requirements from CFFC and OPNAV for the DCGS-N became more firm. Particularly, additional time sensitive requirements were added that were too late to be added to the 1.0/1.1 versions of spiral one, but were desired in a timeframe that would not be supported by the spiral two development timeline. Consequently, a new build was added between 1.1 and 2.0 to capture these new requirements, which resulted in the 2.0 development effort being pushed to the right.</p> <p>Technical: N/A</p>																																									

R-1 SHOPPING LIST -  
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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 6 of 11)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0305208N/Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME 2174/9440/9652 CIGSS/ETSS/PAX Node			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN LI 5112/ Naval Fires Control System	0.99							0	0.997
OPN LI 2914/ Common Imagery Ground Surface Systems	49.59	20.15	78.32	101.06	82.41	84.28	86.32	Cont.	Cont.
<b>E. ACQUISITION STRATEGY:</b>									
<p>The production DCGS-N Converged Architecture (DCA) system consists of four legacy transitional elements including the Joint Fires Network (JFN), Precision Targeting Workstation (PTW), Joint Concentrator Architecture (JCA)/National Input Segment (NIS), and Tactical Input Segment (TIS) application. The JFN is already in production and is an integrated DCA segment. The JCA/NIS is also in full rate production and is supplied as Government Furnished Equipment (GFE) by the National Geo-spatial Agency (NGA). The TIS application is acquired from the Air Force Electronic Systems Center (ESC) at Hanscom AFB. The TIS includes a Common Imagery Processor (CIP) that is supplied as GFE to the integrating contractor and is an integrated component element within the DCA. The government is the system integrator for the DCGS-N system.</p>									

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 7 of 11)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N / BA-7</b>		0305208N/Distributed Common Ground Systems		2174/9440/9652 CIGSS/ETSS/PAX Node								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	HQ/SAF, Various		3.763	11/04						3.763	
Ancillary Hardware Development												
Component Development												
Ship Integration												
Ship Suitability												
Systems Engineering	MIPR	BAE, HQ/SAF, MIT/LL, Various		2.129	11/04	4.429	11/05	4.325	11/06	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	5.892		4.429		4.325		Continuing	Continuing	
Remarks:												
Development Support	MIPR	NAWC CL, Various						1.750	11/06	Continuing	Continuing	
Software Development	MIPR	BAE, HQ/SAF, Various		5.415	11/04	6.557	11/05	6.174	11/06	Continuing	Continuing	
Software Development (SAIP)												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			0.000	5.415		6.557		7.924		Continuing	Continuing	

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 8 of 11)

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)				DATE: <b>February 2006</b>								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N / BA-7</b>		0305208N/Distributed Common Ground Systems (DCGS)		2174/9440/9652 CIGSS/ETSS/PAX Node								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	MIPR	HQ/SAF, NAWC CL, Various		1.722	11/04	1.155	11/05	4.338	11/06	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	1.722		1.155		4.338		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	13.029		12.141		16.587		Continuing	Continuing	

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2006</b>													
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>					PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)										PROJECT NUMBER AND NAME 2174/9440/9652 CIGSS/ETSS/PAX Node																		
		FY05				FY06				FY07				FY08				FY09				FY10				FY11							
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
<b>Distributed Common Ground System - Navy (DCGS-N)</b>																																	
Testing						DCGS-N 1.0 Testing				DCGS-N 1.1 Testing				DCGS-N 1.1 OPEVAL				DCGS-N 1.2 Testing				DCGS-N 1.2 FOT&E				DCGS-N 2.0 Testing				DCGS-N 2.0 OPEVAL			
Spiral Development (Migration to DCGS-N)		DIB Integration & Test								DCGS-N 1.0				DCGS-N 1.1				DCGS-N 1.2				DCGS-N 2.0				DCGS-N Follow on Spirals							
Procurement Profile *Installation schedule subject to Fleet Validation of Rqmts/Needs		2 System Purchase (CVN/LHA/LHD/Shore)				Sustain Legacy Systems/Phase Out				6 System Purchase (CVN/LHA/LHD/Shore)				12 System Purchase (CVN/LHD/LHA/Shore)				7 System Purchase (CVN/LHD/LHA/Shore)				7 System Purchase/ Recurring Product Improvement				Recurring Product Improvement							
		DIB Delivery												DCGS-N 1.1 IOC				Program Review				DCGS-N 1.2 IOC											

R-1 SHOPPING LIST - Item No. 206

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 10 of 11)

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-7</b>	0305208N Distributed Common Ground Systems (DCGS)			2174/9440/9652 CIGSS/ETSS/PAX Node				
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Fleet Experiments								
DCGS-N 1.1 OPEVAL			3Q-4Q					
DCGS-N 1.2 FOT&E					2Q-3Q			
DCGS-N 2.0 OPEVAL							3Q-4Q	
Spiral development								
DIB Integration and Test	1Q-4Q							
DCGS-N 1.0 Development	1Q-4Q	1Q						
DCGS-N 1.1 Development		2Q-3Q						
DCGS-N 1.2 Development			2Q-4Q	1Q-3Q				
DCGS-N 2.0 Development					3Q-4Q	1Q-2Q		
DCGS-N Follow On Development							1Q-4Q	
Acquisition Program								
Sustain/Phase Out Legacy Equipment	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
DCGS-N Procurement	3Q-4Q		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
DCGS-N 1.1 IOC			4Q					
DCGS-N 1.2 IOC					4Q			
Recurring Product Improvement/P3I						1Q-4Q	1Q-4Q	

R-1 SHOPPING LIST - Item No.

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# UNCLASSIFIED

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /							February 2006	
BA 7						R-1 ITEM NOMENCLATURE 0307207N, AERIAL COMMON SENSOR		
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		26.555	34.994	17.182	16.882	75.526	103.988	257.235
3015 AERIAL COMMON SENSOR		26.555	33.994	17.182	16.882	75.526	103.988	257.235
9999 CONGRESSIONAL ADD			1.000					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Provides funding for the Navy's Aerial Common Sensor (ACS) program. Provide funds for Navy ACS platform development. ACS is the Navy's recapitalization of existing EP-3E capabilities and offers a transformational platform to fulfill the Navy and OSD requirements for migration to the Joint Airborne SIGINT Architecture (JASA). RDT&E efforts under ACS will ensure connectivity to multi-service platforms and ground stations, procure five ACS test platforms and develop a mission system that will integrate Intelligence, Surveillance and Reconnaissance (ISR) mission requirements. ACS contract awarded 4th quarter FY2004 to Lockheed Martin Integrated Systems and Solutions, Littleton, Colorado. Army terminated contract for convenience on 12 January 2006. Army and Navy, in coordination with Air Force, are co-leading an OSD-directed ISR study. Results of the study are due 31 July 2006 and will determine the future program acquisition strategy.



EXHIBIT R-2a, RDT&E Project Justification								DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N /</b>		<b>BA 7</b>					<b>0307207N, AERIAL COMMON SENSOR</b>			February 2006
							<b>3015, AERIAL COMMON SENSOR</b>			
COST (\$ in Millions)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
3015 AERIAL COMMON SENSOR			26.555	33.994	17.182	16.882	75.526	103.988	257.235	
RDT&E Articles Qty										
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Provides funding for the Navy's Aerial Common Sensor (ACS) program. Provide funds for Navy ACS platform development. ACS is the Navy's recapitalization of existing EP-3E capabilities and offers a transformational platform to fulfill the Navy and OSD requirements for migration to the Joint Airborne SIGINT Architecture (JASA). RDT&amp;E efforts under ACS will ensure connectivity to multi-service platforms and ground stations, procure five ACS test platforms and develop a mission system that will integrate Intelligence, Surveillance and Reconnaissance (ISR) mission requirements. ACS contract awarded 4th quarter FY2004 to Lockheed Martin Integrated Systems and Solutions, Littleton, Colorado. Army terminated contract for convenience on 12 January 2006. Army and Navy, in coordination with Air Force, are co-leading an OSD-directed ISR study. Results of the study are due 31 July 2006 and will determine the future program acquisition strategy.</p>										

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0307207N, AERIAL COMMON SENSOR</b>	PROJECT NUMBER AND NAME 3015, AERIAL COMMON SENSOR
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		3.370	4.096	9.254
RDT&E Articles Qty				

Fund ACS government and contractor systems engineering and engineering support. Fund ACS program management. Support OSD directed joint airborne ISR study, development of an Analysis of Alternatives, Concept of Operations and requirements / capabilities documentation.

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		.790		
RDT&E Articles Qty				

Conduct development, integration and test in preparation for Developmental Test (DT) and Limited User Test (LUT) / Operational Assessment (OA).

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost		22.395	29.898	7.928
RDT&E Articles Qty				

Awarded SDD contract with Lockheed Martin. Entered into SDD for ACS Program; conduct engineering and development efforts in preparation for the Preliminary / Critical Design Reviews (PDR / CDR) for the ACS weapon system. Contract terminated for convenience on 12 Jan 2006. Set aside for Lockheed Martin termination liability cost. FY2007 effort consists of conducting Trade Study based on results of AoA.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0307207N, AERIAL COMMON SENSOR</b>	PROJECT NUMBER AND NAME 3015, AERIAL COMMON SENSOR
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	24.683	133.642	123.669
Current President's Budget:	26.555	33.994	17.182
Total Adjustments	1.872	-99.648	-106.487

Summary of Adjustments

Congressional Reductions		-97.642	
Congressional Rescissions			
Congressional Undistributed Reductions	-0.435	-1.397	
Congressional Increases			
Economic Assumptions		-0.609	0.513
Miscellaneous Adjustments	2.307		-107.000
Subtotal	1.872	-99.648	-106.487

Schedule:

Adjusted due to contract termination for convenience and program restructure.

Technical:

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				0307207N, AERIAL COMMON SENSOR					
						3015, AERIAL COMMON SENSOR					
D. OTHER PROGRAM FUNDING SUMMARY:											
		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN BLI 019100 Aerial Common Sensor (ACS)										2,285.664	2,285.664
APN BLI 060510 Initial Spares										140.090	140.090
E. ACQUISITION STRATEGY:											
<p>Army Acquisition Strategy signed by the MDA, USD (ATL) on 19 Dec 2003. Army Milestone B approval to proceed with System Development and Demonstration (SDD) occurred 4th QTR FY2004. ACS contract awarded 4th QTR FY2004 to Lockheed Martin Integrated Systems and Solutions, Littleton, Colorado. Contract terminated for convenience 12 January 2006. Revised program structure and acquisition strategy pending joint airborne ISR study to be completed 31 July 2006.</p>											

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 7		0307207N, AERIAL COMMON SENSOR				3015, AERIAL COMMON SENSOR						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>PRODUCT DEVELOPMENT</b>												
Primary Hdw Development - Army	C-CPAF	LOCKHEED MARTIN CORP, LITTLETON, CO		19.590	12/1/2004	29.898					49.488	49.488
Primary Hdw Development - Trade Study	C-CPAF	TBD						7.928	6/1/2007		7.928	7.928
Primary Hdw Development - TD Award	C-CPAF	TBD								151.000	151.000	151.000
Primary Hdw Development - SDD Award	C-CPAF	TBD								2,770.000	2,770.000	2,770.000
Systems Eng - PAX	WX	NAWCAD, PATUXENT RIVER MD		.870	11/1/2005					45.000	45.870	
Training Develop - TSD	WX	NAWCTSD, ORLANDO FL		.702	11/1/2005					50.000	50.702	
<b>SUBTOTAL PRODUCT DEVELOPMENT</b>				<b>21.162</b>		<b>29.898</b>		<b>7.928</b>		<b>3,016.000</b>	<b>3,074.988</b>	
Remarks: Original LM Army contract terminated for convenience on 12 Jan 2006. Restructured program predicated on joint airborne ISR study expected to complete 31 Jul 2006.												
<b>SUPPORT</b>												
Dev Support China Lake	WX	NAWCWD, CHINA LAKE CA		.204	12/1/2004					35.000	35.204	
Dev Support PAX	WX	NAWCAD, PATUXENT RIVER MD		.457	11/1/2004					35.000	35.457	
ILS PAX	WX	NAWCAD, PATUXENT RIVER MD		.572	11/1/2004					55.000	55.572	
Technical Data	WX	NAWCAD, PATUXENT RIVER MD								20.000	20.000	
<b>SUBTOTAL SUPPORT</b>				<b>1.233</b>						<b>145.000</b>	<b>146.233</b>	
Remarks:												
<b>TEST &amp; EVALUATION</b>												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD		.790	11/1/2004					36.000	36.790	
Oper Test & Eval	WX	NAWCAD, PATUXENT RIVER MD								20.000	20.000	
<b>SUBTOTAL TEST &amp; EVALUATION</b>				<b>.790</b>						<b>56.000</b>	<b>56.790</b>	
Remarks:												
<b>MANAGEMENT</b>												
ENGINEERING & TECH SRVC (NON-F)	C-CPFF	A T & T, VIENNA, VA		1.682	12/1/2004	2.611	2/1/2006	3.824	12/1/2006	40.000	48.117	48.117
Govt Engineering Support	WX	NAWCAD, PATUXENT RIVER MD		.839	12/1/2004	.836	1/1/2006	3.026	11/1/2006	30.000	34.701	
Govt Engineering Support	WX	NAWCWD, CHINA LAKE CA				.052	1/1/2006	.170	11/1/2006		.222	
Govt Engineering Support	WX	NAWCTSD, ORLANDO FL				.418	1/1/2006	1.588	11/1/2006		2.006	
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD		.749	12/1/2004	.169	1/1/2006	.616	11/1/2006	25.000	26.534	
Travel	WX	NAWCAD, PATUXENT RIVER MD		.100	12/1/2004	.010	1/1/2006	.030	11/1/2006	5.000	5.140	
<b>SUBTOTAL MANAGEMENT</b>				<b>3.370</b>		<b>4.096</b>		<b>9.254</b>		<b>100.000</b>	<b>116.720</b>	
Remarks:												
<b>Total Cost</b>				<b>26.555</b>		<b>33.994</b>		<b>17.182</b>		<b>3,317.000</b>	<b>3,394.731</b>	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																						DATE: <b>Feb-06</b>														
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>								PROGRAM ELEMENT NUMBER AND NAME 0307207N Aerial Common Sensor								PROJECT NUMBER AND NAME 3015 Aerial Common Sensor																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>			△	Original MS B							△	Joint Airborne ISR Study			△	AoA Complete			△	IPR							△	IPR							△	MS B
<b>Contract Milestone</b>			△	Original SDD Contract Award							△	Termination for Convenience			△	Trade Study Award			△	TD Contract Award															△	SDD Contract Award
<b>System Development</b>																												△	SRR							
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
<b>Deliveries</b>																																				



EXHIBIT R-2a, RDT&E Project Justification								DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
RDT&E, N /		0307207N, AERIAL COMMON SENSOR					9999, Congressional Add		
BA 7									
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
9999, Congressional Add			1.000						
RDT&E Articles Qty									
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Congressional add.</p>									



APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	<b>BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0307207N, AERIAL COMMON SENSOR</b>	PROJECT NUMBER AND NAME 9999, Congressional Add
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B. ACCOMPLISHMENTS / PLANNED PROGRAM:

9755N	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost			.100	
RDT&E Articles Qty				

ELINT RF converter

Fund ACS government and contractor systems engineering and engineering support. Fund ACS program management.

9755N	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost			.900	
RDT&E Articles Qty				

ELINT RF converter

Award RF Elint Converter contract to conduct engineering and development.

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME <b>BA 7 0307207N, AERIAL COMMON SENSOR</b>	PROJECT NUMBER AND NAME 9999, Congressional Add
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C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:		0.000	
Current BES / President's Budget:		1.000	
Total Adjustments	0.000	1.000	0.000

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions			
Congressional Increases		1.000	
Economic Assumptions			
Miscellaneous Adjustments			
Subtotal	0.000	1.000	0.000

Schedule:  
Not Applicable

Technical:  
Not Applicable

EXHIBIT R-2a, RDT&E Project Justification								DATE:		
								February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N /</b>	<b>BA 7</b>	<b>0307207N, AERIAL COMMON SENSOR</b>					9999, Congressional Add			
D. OTHER PROGRAM FUNDING SUMMARY:										
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
E. ACQUISITION STRATEGY:										

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N  
PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
<b>Total PE</b>	21,966	7,710	7,503	7,794	7,964	8,157	8,350
2222 MODELING AND SIMULATION	9,719	6,710	7,503	7,794	7,964	8,157	8,350
9999 CONGRESSIONAL PLUS-UPS	12,247	1,000	0	0	0	0	0

**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 the M&S tools to enable seamless access and use of operationally relevant M&S products in support of Navy operations, training, acquisition, analysis and assessment.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N  
PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT

## B. PROGRAM CHANGE SUMMARY:

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2006 President's Budget Submission	19,755	6,812	7,832
Congressional Action	0	1,000	0
Congressional Undistributed Reductions/Rescissions	-16	-102	0
Execution Adjustments	2,600	0	0
FY 2005 SBIR	-378	0	0
Program Adjustments	5	0	-328
Rate Adjustments	0	0	-1
FY 2007 President's Budget Submission	21,966	7,710	7,503

## 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:

This program supports ongoing efforts to define, develop and utilize modeling and simulation (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: Validation, Verification and Accreditation (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

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: Feb 2006

Exhibit R-2

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT

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.

R1 Line Item 208

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N      PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222      PROJECT TITLE: MODELING AND SIMULATION

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
2222 MODELING AND SIMULATION	9,719	6,710	7,503	7,794	7,964	8,157	8,350

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project addresses critical coordination of Navy Modeling and Simulation (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 2005	FY 2006	FY 2007
<b>ENGINEERING STUDIES AND ANALYSIS</b>	5,537	3,156	3,633

This activity conducts engineering studies and analyses aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy Modeling and Simulation (M&S), and at investigating 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.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222 PROJECT TITLE: MODELING AND SIMULATION

For FY06 submission, the Navy Modeling and Simulation Office (OPNAV N70M1) reallocated 2222 funds between the four functional areas (Engineering Studies and Analyses; Products and Services; M&S Quality Assurance; and Simulation Experiments) to more closely reflect current priorities for modeling and simulation support to the Fleet/Force. Overall funding totals for FY05, FY06 and FY07 remain unchanged.

**FY 2005 Accomplishments:**

- 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 2006 Plans:**

- Continue all efforts of FY05.

**FY 2007 Plans:**

- Continue all efforts of FY06.

	FY 2005	FY 2006	FY 2007
<b>PRODUCTS AND SERVICES</b>	1,411	1,346	1,500

This activity supports development of common services, tools, databases and standards to ensure the integration and connectivity of modeling and simulation (M&S) products employed in Naval assessments, in training and acquisition, and among operational communities. It manages and maintains the Navy Modeling and Simulations 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



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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N      PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222      PROJECT TITLE: MODELING AND SIMULATION

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.

For FY06 submission, the Navy Modeling and Simulation Office (OPNAV NN70M1) reallocated 2222 funds between the four functional areas (Engineering Studies and Analyses; Products and Services; M&S Quality Assurance; and Simulation Experiments) to more closely reflect current priorities for modeling and simulation support to the Fleet/Force. Overall funding totals for FY05, FY06 and FY07 remain unchanged.

#### **FY 2005 Accomplishments:**

- 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.
- Completed update of the Navy M&S Master Plan.
- Initiated development of a Navy Enterprise M&S Support Plan.

#### **FY 2006 Plans:**

- Continue all efforts of FY05 less those noted as completed above.

#### **FY 2007 Plans:**

- Continue all efforts of FY06.

	FY 2005	FY 2006	FY 2007
<b>M&amp;S QUALITY ASSURANCE PROGRAM</b>	389	500	520

This activity implements and manages the Modeling and Simulation (M&S) Quality Assurance development of the Verification, Validation and Accreditation (VV&A) process and guidelines for modeling, simulation, and data.

R1 Line Item 208  
Page 6 of 11

# UNCLASSIFIED

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222 PROJECT TITLE: MODELING AND SIMULATION

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.

For FY06 submission, the Navy Modeling and Simulation Office (OPNAV NN70M1) reallocated 2222 funds between the four functional areas (Engineering Studies and Analyses; Products and Services; M&S Quality Assurance; and Simulation Experiments) to more closely reflect current priorities for modeling and simulation support to the Fleet/Force. Overall funding totals for FY05, FY06 and FY07 remain unchanged.

**FY 2005 Accomplishments:**

- 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.
- Completed coordination with DoD and Services to identify new data entry fields for VV&A common to all M&S Resource Repositories.
- Completed the research and development of methodologies for evaluating commercial off the shelf (COTS) tools used to develop valid M&S.

**FY 2006 Plans:**

- Continue all efforts of FY05 less those noted as completed above.

**FY 2007 Plans:**

- Continue all efforts of FY06.

	FY 2005	FY 2006	FY 2007
<b>SIMULATION EXPERIMENTS</b>	2,382	1,708	1,850

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 models and simulations into Fleet Synthetic Training (FST), and develops simulation efforts to

# UNCLASSIFIED

FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N      PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222      PROJECT TITLE: MODELING AND SIMULATION

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.

For FY06 submission, the Navy Modeling and Simulation Office (OPNAV NN70M1) reallocated 2222 funds between the four functional areas (Engineering Studies and Analyses; Products and Services; M&S Quality Assurance; and Simulation Experiments) to more closely reflect current priorities for modeling and simulation support to the Fleet/Force. Overall funding totals for FY05, FY06 and FY07 remain unchanged.

## **FY 2005 Accomplishments:**

- 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.
- Completed direct support to Navy component Joint Training Confederation (JTC) at Joint Forces Command (JFCOM) and Korea Battle Center (Ulchi Focus Lens).

## **FY 2006 Plans:**

- Continue all efforts of FY05 less those noted as completed above.

## **FY 2007 Plans:**

- Continue all efforts of FY06.

R1 Line Item 208  
Page 8 of 11

# UNCLASSIFIED

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N      PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: 2222            PROJECT TITLE: MODELING AND SIMULATION

**C. OTHER PROGRAM FUNDING SUMMARY:**

NAVY RELATED RDT&E:  
    PE 0603235N (Pilot Flash)

NON-NAVY RELATED RDT&E:  
    Not applicable.

**D. ACQUISITION STRATEGY:**

Not applicable.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: R9999 PROJECT TITLE: Congressional Plus-Ups

CONGRESSIONAL PLUS-UPS:

	FY 2005	FY 2006
GLOBAL ENGINEERING METHODOLOGY INITIATIVE FOR NAVAL INTEGRATION AND INTEROPERABILITY	2,698	0

This effort integrated Navy Tool for Interoperability Risk Assessment (NTIRA) data with system attribute data from other authoritative sources. Systems and attributes were assigned to a mission thread by reading authoritative sources, i.e., Global Engineering Methodology Initiative for Integration and Interoperability (GEMINII)/ForceNet Implementation Base Line (FIBL). End-to-end "interaction requirements" and dependencies were defined between the systems supporting the mission activities and C2 processes. This model measured composability and adaptability of the end-to-end system architecture in support of the mission thread and C2 process, and optimized between legacy and FORCENet Distributed Services. An interface to M&S systems for additional modeling (performance or warfighting effects) of these threads was provided.

	FY 2005	FY 2006
JOINT ANALYTICAL MODELING IMPROVEMENT PROGRAM (JAMIP) JWARS	3,762	0

This effort addressed the significant limitations of existing theater-level simulations that provide analytic support to senior officials. JAMIP involves a four-pronged approach to upgrade the capability of joint modeling to accurately assess the capabilities of Navy forces and programs to execute U.S. strategy within the constraints of resources. Current JAMIP goals are to continue development of the top-priority joint warfare model and to provide data support for the integration and enhancement of existing models as directed by the Deputy Secretary of Defense and endorsed by the Vice Chairman of the Joint Chiefs of Staff. One of the primary components of JAMIP is the development of the Joint Warfare System (JWARS), which will be a state-of-the-art, closed-form, constructive simulation of multi-sided, joint warfare for analysis. JWARS is also used in the Global Engineering Methods Initiative for Integration and Interoperability (GEMINII) War Room Assessment Toolset. Assessments are formal processes that demonstrate the implications of proposed solutions with the insight of modeling applications. The GEMINII Process was developed to facilitate performance of capability-based assessments that define composable mission services. The toolset is currently used for Program Objective Memorandum (POM)-type assessments and JWARS provides insights to the effects on the warfighter.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0308601N PROGRAM ELEMENT TITLE: MODELING AND SIMULATION SUPPORT  
PROJECT NUMBER: R9999 PROJECT TITLE: Congressional Plus-Ups

	FY 2005	FY 2006
MODELING AND SIMULATION TO SUPPORT C4ISR DEVELOPMENT	5,787	0

This effort provided for development of emerging technologies in support of Navy and DoD transformation. These technologies were enhanced by the use of various modeling and simulation techniques that afforded a more efficient and effective use of resources in an evolving environment. The premise surrounding this effort is that the better the Navy can model and simulate actions/techniques to create greater interoperability among joint forces, the greater the success rate will be once the effort is integrated into the operational environment.

	FY 2005	FY 2006
US NAVY SPACE AND NAVAL WARFARE COMMAND NET CENTRIC OPERATIONS PROGRAM	0	1,000

This effort supports US Navy Space and Naval Warfare Command net centric operations program research.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		0702207N Depot Maintenance (Non-IF)						
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		4.200	9.861	2.960				
3030 F/A-18 SLAP		4.200	9.861	2.960				
9999 Congressional Adds			2.600					

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**  
 The F/A-18 Service Life Assessment Program (SLAP) is assessing the structural condition of the F/A-18 fleet in order to determine what structural modifications are necessary to extend the aircraft designed service life and allow it to achieve inventory requirements. The Resource Sponsor (N78) has indicated an urgent need to assess the structural condition of the F/A-18 fleet to determine whether the structural condition supports OPNAV Tactical Aircraft inventory requirements through fiscal year FY 2023. It is known that F/A-18 aircraft built prior to Lot 18 are limited to 78% of their design fatigue life due to structural cracking in the section of the fuselage known as the "Center Barrel". The Center Barrel Replacement Plus (CBR+) program eliminates structural life limitations caused by cracking in the Center Barrel. The airframe structure also has landing and flight hour limitations, both of which must be addressed to extend the designed service life of the aircraft. The F/A-18 A/B/C/D aircraft structure is being assessed to determine the life limit on landings and flight hours for all four models (Lot 8 aircraft and above). Currently the aircraft structure is limited to 8,300 landings and 6,000 flight hours. The goal of the SLAP program will be to identify critical structures to allow total landings to be increased to 14,500 and flight hours to 12,000. This increase in total landings and flight hours would allow the F/A-18 A/B/C/D to meet OPNAV Tactical Aircraft inventory requirements through FY 2023, to include planning for the announced one year JSF slide. These efforts are required to be conducted for these airframes to ascertain what actions must be taken to safely operate each system until the targeted end of service life.

Congressional Add: Portable Laser Depainting System

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE			PROJECT NUMBER AND NAME 3030 F/A-18 Service Life Assessment Program (SLAP)			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	<b>4.200</b>	<b>9.861</b>	<b>2.960</b>					

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

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME 3030 F/A-18 Service Life Assessment Program (SLAP)
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**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		4.200	9.861	2.960
RDT&E Articles Quantity				

Continue to conduct analysis of aircraft structures and complete Landings/Cat/Trap/Flight Hour analysis and technical support.

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

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

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME 3030 F/A-18 Service Life Assessment Program (SLAP)																																																																
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 05</th> <th style="text-align: right;">FY 06</th> <th style="text-align: right;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">7.000</td> <td style="text-align: right;">10.012</td> <td style="text-align: right;">3.200</td> </tr> <tr> <td>Current President's Budget</td> <td style="text-align: right;">4.200</td> <td style="text-align: right;">9.861</td> <td style="text-align: right;">2.960</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-2.800</td> <td style="text-align: right; border-top: 1px solid black;">-0.151</td> <td style="text-align: right; border-top: 1px solid black;">-0.240</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Rescissions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Undistributed Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Increases</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Economic Assumptions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Miscellaneous Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Subtotal</td> </tr> <tr> <td colspan="4" style="padding-left: 40px; border-top: 1px solid black;">-0.179      -0.105</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">-2.621      -0.046      0.016</td> </tr> <tr> <td colspan="4" style="padding-left: 40px; border-top: 1px solid black;">-2.800      -0.151      -0.256</td> </tr> <tr> <td colspan="4" style="padding-left: 40px; border-top: 1px solid black;">-2.800      -0.151      -0.240</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule: Not applicable.</p> <p style="margin-top: 40px;">Technical: Not applicable.</p>			Funding:	FY 05	FY 06	FY 07	Previous President's Budget:	7.000	10.012	3.200	Current President's Budget	4.200	9.861	2.960	Total Adjustments	-2.800	-0.151	-0.240	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions				Congressional Increases				Economic Assumptions				Miscellaneous Adjustments				Subtotal				-0.179      -0.105				-2.621      -0.046      0.016				-2.800      -0.151      -0.256				-2.800      -0.151      -0.240			
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R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE			PROJECT NUMBER AND NAME 3030 F/A-18 Service Life Assessment Program (SLAP)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-5 P.E. 0204136N F/A-18 Squadrons OSIP (11-99) Service Life Management Program	98.445	86.283	112.060	113.980	115.366	123.262	124.763	390.513	938.632
<b>E. ACQUISITION STRATEGY:</b>									
<p>The 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. These analyses will provide for the development of aircraft modifications necessary to extend total aircraft landing from 8,300 to 14,500 catapults and arrestments from 2,000 to 2,700 and flight hours from 6,000 to 12,000. Engineering Change Proposals (ECPs) generated by the SLAP analysis will be incorporated into Service Life Management Program (SLMP) under OSIP (11-99).</p>									

R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0702207N DEPOT MAINTENANCE			3030 F/A-18 Service Life Assessment Program (SLAP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPFF	BOEING. St. Louis	12.226	4.200	02/05	9.861	01/06	2.960	01/07		29.247	29.247
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			12.226	4.200		9.861		2.960		0.000	29.247	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0702207N DEPOT MAINTENANCE			3030 F/A-18 Service Life Assessment Program (SLAP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			12.226	4.200		9.861		2.960		0.000	29.247	
Remarks:												


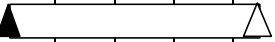
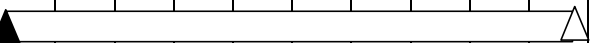
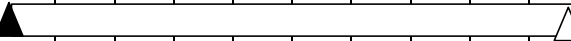
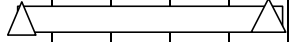
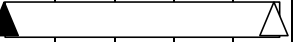
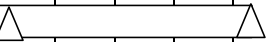

R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 7 of 12)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2006</b>													
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																			
<b>RDT&amp;E, N / BA-7</b>					0702207N DEPOT MAINTENANCE												3030 F/A-18 Service Life Assessment Program (SLAP)																			
Fiscal Year	2005				2006				2007				2008				2009				2010				2011											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
<b>Contract Award</b>																																				
1.1 Flight Load Structure Crack Growth Analysis Using Design Loads																																				
1.2 Flight Load Structure Usage Flight Spectrum Development																																				
1.3 Flight Load Structure Fatigue Loads Development																																				
1.4 Flight Load Structure Crack Initiation Life for 90% Spectrum Assessment																																				
2.1 Ground Load Structure Crack Growth Analysis Using 90% Loads																																				
2.2 Ground Load Structure Fatigue Life Assessment for 90% Spectrum																																				
3.0 Fleet Aircraft Teardown																																				

R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 8 of 12)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE			PROJECT NUMBER AND NAME 9999 Congressional Adds			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost		<b>2.600</b>						

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

Portable Laser Depainting System



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME 9999 Congressional Adds
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**B. Accomplishments/Planned Program**

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			2.600	
RDT&E Articles Quantity				

Portable Laser Depainting System

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

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

R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME 9999 CONGRESSIONAL ADDS																																																								
<p><b>C. PROGRAM CHANGE SUMMARY:</b></p> <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%;">FY 05</th> <th style="text-align: right; width: 15%;">FY 06</th> <th style="text-align: right; width: 15%;">FY 07</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">2.600</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">2.600</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Rescissions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Undistributed Reductions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Congressional Increases</td> </tr> <tr> <td></td> <td></td> <td style="text-align: right;">2.600</td> <td></td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Economic Assumptions</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Miscellaneous Adjustments</td> </tr> <tr> <td colspan="4" style="padding-left: 40px;">Subtotal</td> </tr> <tr> <td></td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">2.600</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule: Not applicable.</p> <p style="margin-top: 40px;">Technical: Not applicable.</p>			Funding:	FY 05	FY 06	FY 07	Previous President's Budget:	0.000	0.000	0.000	Current BES/President's Budget	0.000	2.600	0.000	Total Adjustments	0.000	2.600	0.000	Summary of Adjustments				Congressional Reductions				Congressional Rescissions				Congressional Undistributed Reductions				Congressional Increases						2.600		Economic Assumptions				Miscellaneous Adjustments				Subtotal					0.000	2.600	0.000
Funding:	FY 05	FY 06	FY 07																																																							
Previous President's Budget:	0.000	0.000	0.000																																																							
Current BES/President's Budget	0.000	2.600	0.000																																																							
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Subtotal																																																										
	0.000	2.600	0.000																																																							

R-1 SHOPPING LIST - Item No. 209

# UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-7</b>					R-1 ITEM NOMENCLATURE 0702239N, Avionics Component Improvement Program			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost				<b>1.375</b>	<b>1.625</b>	<b>1.877</b>	<b>2.882</b>	<b>3.889</b>
3170/Avionics Component Improvement Program				<b>1.375</b>	<b>1.625</b>	<b>1.877</b>	<b>2.882</b>	<b>3.889</b>
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
The Avionics Component Improvement Program (AvCIP) develops, integrates and tests solutions for critical reliability, obsolescence and capability deficiencies in Navy in-service avionics/electronics systems. Transfer in FY 2007 and out as documented in PE 0604215N, Standards Development, Project Unit 0572.								

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0702239N, Avionics Component Improvement Program			PROJECT NUMBER AND NAME 3170, Avionics Component Improvement Program			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost				1.375	1.625	1.877	2.882	3.889
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 reliability, obsolescence, and capability deficiencies 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 sponsors 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. Transfer in FY 2007 and out as documented in PE 0604215N, Standards Development, Project Unit 0572.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702239N, Avionics Component Improvement Program	PROJECT NUMBER AND NAME 3170, Avionics Component Improvement Program	
<b>B. Accomplishments/Planned Program</b>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			1.375
RDT&E Articles Quantity			
<b>Investigate High Value Return on Investment Candidates</b> Investigate High Value Return on Investment Candidates, addressing emergent avionics component critical readiness degraders and transformational upgrade opportunities. Prioritize critical avionics performance, capability and obsolescence problems that require immediate attention. Pursue solutions to these problems based upon urgency, warfighting contribution and return on investment. Develop and test system solutions based on priority. Resources will cover program management, engineering, contracting and logistics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and developmental/ operational testing.			

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CLASSIFICATION: **UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>																																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME 0702239N, Avionics Component Improvement Program	PROJECT NUMBER AND NAME 3170, Avionics Component Improvement Program																																																
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Funding:	FY 05	FY 06	FY 07																																															
Previous President's Budget:	0.000	0.000	0.000																																															
Current BES/President's Budget	0.000	0.000	1.375																																															
Total Adjustments	0.000	0.000	1.375																																															
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Congressional Increases																																																		
Economic Assumptions			0.008																																															
Miscellaneous Adjustments			-0.133																																															
Subtotal	0.000	0.000	-0.125																																															

R-1 SHOPPING LIST - Item No. 210

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0702239N, Avionics Component Improvement Program			PROJECT NUMBER AND NAME 3170, Avionics Component Improvement Program				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>									
<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
0604215N, Standards Development, PU 0572	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
0702239A (Avionics Component Improvement Program, Army)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	7.000
0702239F (Avionics Component Improvement Program, Air Force)									
Transfer in FY 2007 and out as documented in PE 0604215N, Standards Development, Project Unit 0572.									
<b>E. ACQUISITION STRATEGY:</b>									
<p>The Avionics Component Improvement Program (AvCIP) will annually compete candidate solutions according to criticality of operational contribution, technical risk, return on investment, and breadth of application. OPNAV N78 &amp; N43, NAVAIR, NAVICP and the Fleet will participate in project selection for execution year allocation. The AvCIP IPT will monitor project execution and track return on investment using N43 Flying Hour Program metrics. Modification solutions include modular hardware, software and material upgrades. 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.</p>									

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2006</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0702239N, Avionics Component Improvement Program			3170, Avionics Component Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	Various	Various						0.875	11/06	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.875		Continuing	Continuing	
Remarks:												



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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-7</b>			0702239N, Avionics Component Improvement Program			3170, Avionics Component Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	WX	NAWCAD, Patuxent River						0.480	11/06	Continuing	Continuing	
Travel	TO	NAVAIRHQ, Patuxent River, MD						0.020	11/06	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.500		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		0.000		1.375		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 210

**UNCLASSIFIED**

**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 7 of 9)

# UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2006</b>												
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-7</b>								0702239N, Avionics Component Improvement Program								3170, Avionics Component Improvement Program																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Management Milestones</b>									FY07 AvCIP CYCLE				FY08 AvCIP CYCLE				FY09 AvCIP CYCLE				FY10 AvCIP CYCLE				FY11 AvCIP CYCLE											
Candidate Collection									▬				▬				▬				▬															
Candidate Evaluation									□				□				□				□															
Candidate Prioritization									▮				▮				▮				▮															
Candidate Endorsement									▮				▮				▮				▮															
Project Selection									△				△				△				△															
Funding Allocation									△				△				△				△															
Program Execution*									△				→																							

R-1 SHOPPING LIST - Item No. 210

\*More specific program schedules will be provided once high value return on investment candidates have been selected.

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT 0702239N, Avionics Component Improvement Program				PROJECT NUMBER AND NAME 3170, Avionics Component Improvement Program			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FY07 AvCIP Candidate Collection			2Q-3Q					
FY07 AvCIP Candidate Evaluation			3Q					
FY07 AvCIP Candidate Prioritization			3Q					
FY07 AvCIP Candidate Endorsement			4Q					
FY07 AvCIP Project Selection			4Q					
FY07 AvCIP Funding Allocation				1Q				
FY08 AvCIP Candidate Collection				2Q-3Q				
FY08 AvCIP Candidate Evaluation				3Q				
FY08 AvCIP Candidate Prioritization				3Q				
FY08 AvCIP Candidate Endorsement				4Q				
FY08 AvCIP Project Selection				4Q				
FY08 AvCIP Funding Allocation					1Q			
FY09 AvCIP Candidate Collection					2Q-3Q			
FY09 AvCIP Candidate Evaluation					3Q			
FY09 AvCIP Candidate Prioritization					3Q			
FY09 AvCIP Candidate Endorsement					4Q			
FY09 AvCIP Project Selection					4Q			
FY09 AvCIP Funding Allocation						1Q		
FY10 AvCIP Candidate Collection						2Q-3Q		
FY10 AvCIP Candidate Evaluation						3Q		
FY10 AvCIP Candidate Prioritization						3Q		
FY10 AvCIP Candidate Endorsement						4Q		
FY10 AvCIP Project Selection						4Q		
FY10 AvCIP Funding Allocation							1Q	
FY11 AvCIP Candidate Collection							2Q-3Q	
FY11 AvCIP Candidate Evaluation							3Q	
FY11 AvCIP Candidate Prioritization							3Q	
FY11 AvCIP Candidate Endorsement							4Q	
FY11 AvCIP Project Selection							4Q	
FY11 AvCIP Funding Allocation								1Q
PROGRAM EXECUTION				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 210

## UNCLASSIFIED

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

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N  
PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
<b>Total PE</b>	59,095	59,286	55,048	57,328	58,764	60,081	61,409
1050 MANUFACTURING TECHNOLOGY	55,465	56,886	55,048	57,328	58,764	60,081	61,409
9999 CONGRESSIONAL PLUS-UPS	3,630	2,400	0	0	0	0	0

**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 of 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 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.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N  
PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

**B. PROGRAM CHANGE SUMMARY:**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2006 President's Budget Submission	59,775	57,753	58,001
Congressional Action	0	2,400	0
Congressional Undistributed Reductions/Rescissions	-46	-867	0
Execution Adjustments	735	0	0
FY 2005 SBIR	-1,370	0	0
Program Adjustments	1	0	-3,180
Rate Adjustments	0	0	227
FY 2007 President's Budget Submission	59,095	59,286	55,048

**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 ManTech program's overall goal is to transition leading edge technology for the production of Navy weapons systems. Individual project metrics are tailored to the needs of specific acquisition programs. Example metrics include: enabling a 400 ton weight reduction for CVN 21 as a result of the High Strength and Toughness Naval Steels for Ballistic Protection Project; and a 60% cost reduction from the original baseline, for the Large Marine Composite to Steel Adhesives Joint Project, bolted joint effort.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N      PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050            PROJECT TITLE: MANUFACTURING TECHNOLOGY

COST: (Dollars in Thousands)

Project Number & Title	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
1050 MANUFACTURING TECHNOLOGY	55,465	56,886	55,048	57,328	58,764	60,081	61,409

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The ManTech project 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 electronics assembly, laser metalworking, flexible computer manufacturing, composites, metal working, and welding technology. The ManTech project is being integrated into the Seapower 21 and Joint Warfare Operational Capability process and will utilize the results of these initiatives as appropriate in the program planning process. The ManTech project 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 2005	FY 2006	FY 2007
<b>METALS PROCESSING AND FABRICATION</b>	19,500	18,988	19,725

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. Near-term efforts are focused on the Integrated Systems Investment Strategy platforms: DD(X); CVN 21; and Joint-Unmanned Combat Air Systems (J-UCAS). Future concentration will include projects applicable to Littoral Combat Ship development, submarines, and the Joint Strike Fighter (JSF).

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N      PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050      PROJECT TITLE: MANUFACTURING TECHNOLOGY

## **FY 2005 Accomplishments:**

- Continued process improvements to DD(X) Program for surface hull treatment application processes to support critical design review schedule. (DD(X) Advanced Bonding Methods for Steel Structures)
- Continued to pursue manufacturing process improvements supporting CVN 21 and J-UCAS.
- Established manufacturing development teams and initiated projects in support of submarines. (Advanced Metalworking Technology)
- Continued rapid response and teaching factory activities.
- Continued development and testing of methods for selecting most viable collarless construction techniques for DD(X) fabrication. (Collarless Construction)
- Continued effort on ceramic coatings for corrosion protection in Allison 501 engines. (Hot Section Corrosion Protection for 501-K34 Gas Turbine)
- Continued Improved Affordability of Titanium Parts for Marine Corps M777 Lightweight 155MM Howitzer effort.
- Continued Modeling and Simulation for Carrier Construction Planning and Sequencing effort to support CVN 21.
- Continued Laser Welded Lightweight Panel Structure Fabrication and Application to CVN 21, developed inter-panel joint concepts and preliminary design concept to improve productivity.
- Continued development of Cost-Effective, Low-Manganese Flux Core Welding Electrode for joining High-Strength Steels for CVN 21 applications.
- Continued development of preliminary designs and manufacturing concepts, identifying material changes and specific processes to be improved. (Advanced Surface Ship Watertight Closures)
- Continued Manufacturing Process Development for Elimination of Weld Distortion of CVN 21 heavy plate erection units.
- Continued evaluation of material properties of small-scale production heat of 10% Nickel (Ni) material for CVN 21. (High Strength and Toughness Naval Steels for Ballistic Protection (Ballistic 10% Ni Steel))
- Continued Automated Thermal Plate effort by demonstrating a system for automated thermal plate forming of complex steel shapes to reduce fabrication cost and signature of the DD(X).
- Continued analysis with Naval Surface Warfare Center (NSWC) and Northrop Grumman Ship Systems (NGSS) of key components and substructures that can be converted to low-cost titanium for center of gravity and structural weight savings on CVN 21. (Issues associated with Fabrication of Titanium Components for CVN 21)
- Continued the Laser Welded Corrugated Core (LASCOR) Fabrication for CVN 21, (Application Development of LASCOR), effort: Design, fabrication, testing, and final application demonstration for various repair, stud attachment, and joining technologies.

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DATE: Feb 2006

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Completed testing and validation of adhesive bonded joints to support critical design review and technical insertion to reduce radar cross section, weight, and life-cycle costs for DD(X) program. (Large Marine Composite-to-Steel Adhesive Joints)
- Completed transition of high-productivity, cost-effective welding processes for large, thick-section, high-strength steel structures to shipyard production to enhance the survivability of DD(X). (Manufacturing Large Marine Structures)
- Completed development of optimal welding procedures for 10% Ni steel to reduce weight and cost of the CVN 21 aircraft carrier. (Welding Development for 10% Ni Steel)
- Completed manufacture and testing of 1/8 inch and 5/32-inch electrodes and revised procurement specification for CVN 21. (Availability of Submergible Arc Weld (SMAW) Electrode (Mil-10718-M) Required for Ballistic Performance Requirements)
- Completed development of cost-effective joining processes for titanium structures and bimetallic transition joints for application to CVN 21 aircraft carriers. (Fabrication of Titanium Components for CVN 21)
- Completed effort on Amphibious Assault Vehicle (AAV) Enhanced Applique Armor Kit (EAAK) effort by evaluating armor sets upon return from deployment and provided process details to Marine Corps. (AAV EAAK Product Improvement)
- Completed Propulsor Affordability Initiative by pouring of a large, cored blade and section of hub and installed high speed machining capability at the Navy Foundry.
- Completed Translational Friction Welding (TFW) of titanium engine blisks to improve affordability, readiness, and time-on wing for aircraft engines in support of F/A-18E/F and JSF programs.
- Initiated J-UCAS Metallic Manufacturing Technology Transition effort to integrate with the Composites-J-UCAS Systems Design and Manufacturing Development (SDMD), Boeing St. Louis.
- Initiated and completed extended metallurgical and manufacturing evaluation for 10% Ni steel implementation for use in the CVN 21 program.
- Initiated and completed implementation of Steel Investment Castings effort to enhance reliability and decrease cost for the M777 Lightweight Howitzer.
- Initiated Hybrid Laser Beam Welding effort.
- Initiated and completed Optimization of Virginia Class Submarine Facility Utilization effort.
- Initiated Erosion Resistant Coatings for Stage I Compressor Blisks effort.
- Initiated Weld Quality Improvement/Distortion Reduction effort for CVN 21 carriers.
- Initiated metalworking/joining manufacturing process improvements supporting CVN 21, J-UCAS, and Littoral Combat Ship.
- Initiated Turbine Inspection Techniques effort.
- Initiated and completed Structural Testing for the Collarless Construction project.

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BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

## FY 2006 Plans:

- Continue all efforts of FY 2005 less those noted as completed above.
- Complete Hot Section Corrosion Protection for 501-K34 Gas Turbine effort.
- Complete Modeling and Simulation for Carrier Construction Planning and Sequencing effort for CVN 21.
- Complete the Laser Welded Lightweight Panel Structure Fabrication and Application to CVN 21 effort.
- Complete DD(X) Collarless Construction effort.
- Complete Development of Cost-Effective, Low-Manganese Flux Core Welding Electrode for Joining High-Strength Steels effort with shipyard verification of trial production advanced weld wire.
- Complete Improved Affordability of Titanium Parts for Marine Corps M777 Lightweight 155MM Howitzer effort by implementing flow formed titanium tubes into full rate production.
- Complete J-UCAS Structural Welding effort.
- Complete Weld Quality Improvement/Distortion Reduction effort for CVN 21 carriers.
- Initiate Friction Stir Welding (FSW) effort for Littoral Combat Ship.

## FY 2007 Plans:

- Continue all efforts of FY 2006 less those noted as completed above.
- Complete Manufacturing Process Development for Elimination of Weld Distortion of CVN 21 Heavy Plate Erection Units by construction of a superlift assembly.
- Complete Automated Thermal Plate effort by demonstrating a system for automated thermal plate forming of complex steel shapes to reduce fabrication cost and signature of the DD(X).
- Complete process improvements to DD(X) effort for surface hull treatment application processes to support critical design review schedule. (DD(X): Advanced Bonding Methods for Steel Structures.)
- Complete High Strength and Toughness Naval Steels for Ballistic Protection (Ballistic 10Ni Steel) effort.
- Complete the Laser Welded Lightweight Structure Panel Fabrication for CVN 21, (Application Development of LASCOR), effort: Design, fabrication, testing, and final application demonstration for various repair, stud attachment, and joining technologies.
- Complete specifications for the manufacture of an interior, watertight door for the CVN 21. (Advanced Surface Ship Watertight Closures)
- Complete Turbine Inspection Techniques effort.

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PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Initiate testing and certification of alternative concepts and materials developed for the DD(X) program on SSN-774 class applications. (DD(X) Tile Bonding Alternative Concepts)
- Initiate identification of requirements, candidate materials, and application techniques for an improved interior treatment on SSN-774 class subs and initiate testing. (Virginia-Class SSN Improved Damping Tile)
- Initiate assessment of the potential applications for LASCOR technology to reduce weight and add value for programs, such as the Littoral Combat Ship (LCS), DD(X), and Landing Ship, Helicopter Assault (LHA). (Future Applications for LASCOR)
- Initiate feasibility/source study for production of large-size extrusions for LCS Panel applications. (LCS Large Extrusions for Panels)
- Initiate identification of several weight reduction technologies of interest to the Landing Ship, Helicopter Assault-Replacement (LHA-R) program, possibly including LASCOR, aluminum LASCOR, Ti components, aluminum panel extrusions, FSW aluminum, low-distortion welding techniques, or other technologies identified. (LHA-R Weight Reduction Project)
- Initiate development of issues related to tank application of Ultra-High Solids (UHS) coatings among shipyard user base, investigate new equipment and techniques to improve performance and challenge current application requirements to reduce application total costs. (UHS Coatings)
- Initiate project to explore novel methods for low-pressure piping system construction using mechanical attachments, including cryogenic pipe fittings, for SSN-774 applications. (SSN Mechanical Pipe Joining)

	FY 2005	FY 2006	FY 2007
<b>OTHER (REPAIR TECH, ENERGETICS, GULF COAST, AND TECHNICAL ENGINEERING SUPPORT)</b>	12,556	10,400	10,945

The "Other" activity includes repair technology, energetics, and technical engineering support. 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).

In FY 2004, ManTech embarked on a new Naval Investment Strategy by focusing its efforts on only the most critical manufacturing efforts identified by a few, select acquisition programs. Execution of FY 2005 funds differed from the plan reflected in the prior submit. Funding was realigned to reflect actual execution. The increase in funding between FY 2006 and FY 2007 reflects realignment from other activities to more closely align funding with planned program requirements.

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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

## FY 2005 Accomplishments:

- Continued to provide technical engineering support for the ManTech program.
- Continued project to identify technologies to reduce the time and costs of alignment and inspection procedures associated with the maintenance of submarines. (Alignments and Inspections)
- Continued work with ATK Thiokol Propulsion to scale-up and implement the alternative manufacturing process. (Alternative Manufacture of Energetic Material 1,3,5-triamino-2,4,6-trinitrobenzene (TATB))
- Continued Virginia-Class structural fabrication facility design effort to incorporate Product Centric manufacturing principles and robotic processes into self-sufficient and self-governing product lines. (Product Centric Facility Design)
- Continued development of a man-portable Gas Metal Arc (GMA) welder for shipyard applications. (Ultra-light Welding System)
- Continued wireless automated diagnostics/prognostics, monitoring diesel engines of mobile yard equipment, in coordination with the National Shipbuilding Research Program, implement on mobile diesel engines in shipyards.
- Continued evaluation of feasibility of welding High-Strength Low-Alloy (HSLA)-100 steel with reduced preheat, specifically for submerged arc welding of plates more than 1 5/8 inch thick and pulsed Gas Metal Arc Welding (GMAW-P) welding of plates more than one inch thick. (High Heat Input Welding of Thick HSLA-100 with Reduced Pre-Heat)
- Continued use of "Super Finishing Process" to salvage helicopter gears and reduce procurement and maintenance costs. Designed modifications for test stands to allow testing of CH-46 gears and defined an acceptance test plan for approval by NAVAIR. (CH-46 Gear Repair)
- Continued development of a safer, repeatable, cost effective and environmentally sound alternative to live fire testing of M198, M777 and M1A1 recoil assemblies. (M198 Howitzer Mechanism Recoil Testing)
- Continued HAZMAT Analyzer effort to build and evaluate hand-held analyzer that can provide test results for determining presence of Poly-Chlorinated Biphenyl (PCB) contamination.
- Continued Polycan Fabrication effort to develop a manufacturing process to reduce the cost and lead-time associated with polycan fabrication.
- Continued project to provide PEO(Carriers) with a portable device for aircraft carrier propulsion system health monitoring.
- Completed the creation of a methodology to track the Cost of Poor Quality system being used by Northrop Grumman Ship Systems. Eliminating poor quality can reduce cost by 25 - 30%. (Institutionalizing Corporate Initiatives: The Northrop Grumman Cost of Poor Quality System)

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BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Completed development of a predictive capability for analysis and design for avoidance of excessive high-speed catamaran cross-deck slamming. (Wet-Deck Slamming of High-Speed Catamarans)
- Completed investigation into solutions for documenting, modeling, and standardizing assembly processes for interim products used in U.S. ship construction. (Improving Shipyard Assembly)
- Completed development and demonstration of a continuous co-extrusion process for the manufacture of co-layered propellants. (Co-Layered Propellant Manufacturing)
- Completed demonstration of integrated assembly and packaging techniques for miniature explosive train components contained in Safety and Arming (S&A) Devices and transition optimized processes to industry for implementation and production of the canistered countermeasure anti-torpedo. (Low Cost, Reliable Packaging & Integration of Miniaturized Explosive Components)
- Completed project to evaluate and determine optimal joining method for thin steel insert welds that minimizes thermal distortion and buckling. (Low Heat Input Welding)
- Completed development of a modeling and simulation-based framework for a shipyard Manufacturing Process Planning System to improve the effectiveness of shipyard production planning. (DD(X): Manufacturing Process Modeling and Fabrication)
- Completed development of an international standard of equipment boundaries and identifiers for collecting and exchanging performance data for shipbuilding.
- Completed development of environmentally and worker-health sensitive de-painting processes for helicopter main rotor blades. (Helicopter Blade Refurbishment)
- Completed development of a nonlinear dynamics based analysis approach for advanced hulls which can be used to supplement the current Navy simulation and model testing analysis approach. (Combined Seakeeping and maneuvering Survival Analysis of Advanced Naval Hull Forms)
- Completed the development of a new salinity indicating system to measure and control salinity levels associated with propulsion and distillation plants on CVN carriers. (Development of Next Generation Salinity Indicating System for CVN Carriers)
- Completed development of alternative manufacturing procedures for cable end sockets used to arrest aircraft aboard carriers. (Aircraft Carrier Arresting Gear Poured Cable End Sockets)
- Completed effort to determine material procurement schedule that optimizes tradeoff between advance investment and the storage cost and risk of costly construction delays caused by late delivery of construction materials. (Optimization of Carrier Material Procurement)
- Completed development of process and equipment to install and repair long-lasting durable non-skid features on flight decks. (Long Life Non-Skid Coatings)

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DATE: Feb 2006

BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Completed development of integrated automated Structural Measurement and Analysis System to enable collection and analysis of dimensional data to improve control of fabrication processes and achieve neat construction of ship structures for the first DD(X) hull. (DD(X): Dimensional and Accuracy Control Automation)
- Completed development of process parameters for manufacturing large diameter steel alloy MP-98T fasteners to achieve desired corrosion resistance and other properties to ensure these bolts can be used for the life of the submarine. (High Strength Marine-Grade Fasteners Extended Development)
- Completed project demonstrating virtual reality as a viable technology to train welders for submarine manufacture. (Shipbuilding Initiative: Virtual Training for Welding)
- Completed development of prototype flexible fixturing and joining technology concepts required for Product-Centered Manufacturing for submarine construction. (Shipbuilding Initiative: Automated Materials Joining and Flexible Fixture Design to Support Product-Centered Structural Fabrication)
- Initiated project to develop Waterborne Tank and Void Preservation process using new long-life high-solids coatings and Ultra-High Pressure Water Jet (UHPWJ) surface preparation for tanks and voids on CVN 21 carriers. (Carrier Tank Coatings)
- Initiated effort to evaluate finite element analysis methods to determine if they apply to thick Navy structures of CVN 21 ships. (Predictive Weld Distortion in Thick Navy Structures, Northrop Grumman Newport News (NGNN))
- Initiated program to develop standards and processes for digital radiography of piping and plate welds supporting CVN 21 and Virginia-Class construction non-destructive testing. (Digital Radiography)
- Initiated effort to minimize distortion and resulting re-work and costs in Virginia-Class hull ring manufacturing. (Weld Distortion Prediction Initiative)
- Initiated and completed development of a ship product design and development process that leverages Six Sigma program benefits. (Ship System Design for Six Sigma)
- Initiated development of a pre-production laser/GMA hybrid pipe welding system. (Hybrid Pipe Welding System)
- Initiated development of a comprehensive technical training and data collection program for structural welders and fitters, applying elements of Best Practices Lean technologies. (Technical Training and Data Collection Northrop Grumman Ship Systems (NGSS))
- Initiated re-engineering internal supply chain/material delivery process. (Re-engineer Internal Supply Chain (NGSS))
- Initiated Repair Technology projects based on high priority depot needs.
- Initiated energetics efforts to support PEO IWS and other acquisition programs.
- Initiated shipbuilding efforts for Littoral Combat Ship, CVN 21, and others.

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BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Initiated development of new weld size and inspection criteria based on fitness for service. (Portable Weld Inspection Management System)
- Initiated the development and implementation of transient thermal tensioning of thin steel ship panel structures at Northrop Grumman Ship Systems for use in the construction of LPD, DDG, LHD, and DD(X). (Thermal Tensioning of Thin Steel Ship Panel Structures)
- Initiated predictive weld distortion in submarine structures.

## FY 2006 Plans:

- Continue all efforts of FY 2005 less those noted as completed above.
- Complete Virginia-Class structural fabrication facility design effort to incorporate product centric manufacturing principles and robotic processes into self-sufficient and self-governing product lines. (Product Centric Facility Design)
- Complete development of a man-portable GMA welder for shipyard applications. (Ultra-light Welding System)
- Complete wireless automated diagnostics/prognostics project and implement on mobile diesel engines in shipyards.
- Complete evaluation of feasibility of welding HSLA-100 steel with reduced preheat, specifically for submerged arc welding of plates more than 1 5/8 inch thick and GMA welding of plates more than one inch thick.
- Complete development of "Super Finishing Process" to salvage helicopter gears and reduce procurement and maintenance costs. (CH-46 Gear Repair)
- Complete project to identify technologies to reduce the time and costs of alignment and inspection procedures associated with the maintenance of submarines. (Alignments and Inspections)
- Complete development of a safer, repeatable, cost effective and environmentally sound alternative to live fire testing of M198, M777 and M1A1 recoil assemblies. (M198 Howitzer Mechanism Recoil Testing)
- Complete effort to evaluate finite element analysis methods to determine if they apply to thick Navy structures of CVN 21 ships. (Predictive Weld Distortion in Thick Navy Structures, NGNN)
- Complete program to develop standards and processes for digital radiography of piping and plate welds supporting CVN 21 and Virginia-Class construction non-destructive testing. (Digital Radiography)
- Complete effort to minimize distortion and resulting re-work and costs in Virginia-Class hull ring manufacturing. (Weld Distortion Prediction Initiative)
- Complete building and evaluation of hand-held analyzer that can provide test results for determining presence of PCB contamination. (HAZMAT Analyzers)

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BUDGET ACTIVITY: 07

PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Complete development of a manufacturing process to reduce the cost and lead-time associated with polycan fabrication. (Polycan Fabrication)
- Complete development of new weld size and inspection criteria based on fitness for service. (Portable Weld Inspection Management System)
- Complete project to develop Waterborne Tank and Void Preservation process using new long-life high-solids coatings and UHPWJ surface preparation for tanks and voids on CVN 21 carriers. (Carrier Tank Coatings)
- Complete predictive weld distortion in submarine structures.
- Initiate FY 2006 Repair Technology projects based on high priority depot needs.
- Initiate FY 2006 energetics efforts to support PEO(IWS) and other acquisition programs.
- Initiate FY 2006 shipbuilding efforts for Littoral Combat Ship, CVN 21, and others.

### **FY 2007 Plans:**

- Continue all efforts of FY 2006 less those noted as completed above.
- Complete development of a pre-production laser / GMA hybrid pipe welding system. (Hybrid Pipe Welding System)
- Complete development of a comprehensive technical training and data collection program for structural welders and fitters, applying elements of Best Practices Lean technologies. (Technical Training and Data Collection (NGSS))
- Complete re-engineering internal supply chain / material delivery process. (Re-engineer Internal Supply Chain (NGSS))
- Complete project to provide PEO(Carriers) with a portable device for aircraft carrier propulsion system health monitoring.
- Initiate FY 2007 Repair Technology projects based on high priority depot needs.
- Initiate FY 2007 energetics efforts to support PEO IWS and other acquisition programs.
- Initiate FY 2007 shipbuilding efforts for Littoral Combat Ship, CVN 21, and others.

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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

	FY 2005	FY 2006	FY 2007
<b>ELECTRONICS PROCESSING AND FABRICATION</b>	10,600	10,000	10,690

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 repairing and maintaining facilities such as depots and logistics centers, with a strong emphasis on process maturation. Near-term efforts are focused on the Integrated Systems Investment Strategy platforms: DD(X), CVN 21, and J-UCAS. Future concentration will include efforts applicable to the Littoral Combat Ship, EA-18G, and JSF.

#### **FY 2005 Accomplishments:**

- Continued Navy Advanced Infrared Focal Plane Arrays effort to develop two color focal plane arrays.
- Continued Electro-Optics Rapid Response efforts such as fiber optic training and troubleshooting efforts to support integration of fiber into new and legacy aircraft and ships.
- Continued Teaching Factory Outreach, Rapid Response.
- Continued MicroElectroMechanical Systems (MEMS) Affordability Program.
- Completed second phase of the Swimmer Deliver Vehicle (SDV) Energy Storage Improvement Program.
- Completed Fiber Optic Ultra-Thin Line Towed Array effort for the Unmanned Surface Vehicle (USV) and other Navy towed array applications.
- Completed MK48 Advanced Capability (ADCAP) Torpedo Fiber Optic Guidance Tether effort to verify integrity and functionality of fiber data link to torpedo.
- Completed Fiber Optic Interconnect Technology effort.
- Completed Microwave Monolithic Integrated Circuit (MMIC) Flip Chip Attach Production Processing.
- Initiated Lead-Free & Environmentally Safe Manufacturing project to reduce the risk of implementing current environmentally safe components and materials.
- Initiated Hermetic Sealing of Transmit/Receive (T/R) Modules to provide significant improvement in affordability of T/R Modules for SPY-3 radar through use of more commercial packaging and manufacturing methods.
- Initiated Manufacturing & Packaging of Power Systems for Program Executive Office (PEO) Carriers and PEO Ships: Developed packaging methodologies for transmission and storage of switching devices and subsystems for pulsed power systems.
- Initiated ALQ-99 Band 4 Jammer effort.
- Initiated and completed DD(X)/CVN 21 Manufacturing of Opto-Electronic Sensors effort.

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PROGRAM ELEMENT: 0708011N

PROJECT NUMBER: 1050

PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS

PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Initiated F-18/DD(X) MMIC Flip Chip Second Source validation and transfer effort.
- Initiated and completed effort on Helmet Mounted Displays to reduce cost and improve durability of F/A-18 and Joint Strike Fighter (JSF) helmet mounted visor.
- Initiated effort to bring current and voltage sensors designed for high power applications from Technical Readiness Level 4 up to Technical Readiness Level 6 through a series of development phases for the manufacture of the sensor systems and develop a test bed for qualification of the system.
- Initiated effort on High Power Electronics with three vendors to facilitate implementation of silicon carbide into solid-state power systems for the Navy.
- Initiated effort to conduct the technology improvements needed for a manufacturing line that will produce Light Activated Semiconductor Switch (LASS) for CVN 21. These are ultra fast, high current switches used in a DoD mission-critical system. These switches support a rate of current rise,  $dI/dt$ , greater than 50 kA/μs, and conduct more than 100 kA.

## FY 2006 Plans:

- Continue all efforts of FY 2005 less those noted as completed above.
- Complete F-18/DD(X) MMIC Flip Chip Second Source validation and transfer effort.
- Complete ALQ-99 Band 4 Jammer effort to increase production yields.
- Complete Hermetic Sealing of T/R Modules to provide significant improvement in affordability of T/R Modules for SPY-3 radar through use of more commercial packaging and manufacturing methods.
- Complete Manufacturing & Packaging of Power Systems for PEO Carriers and PEO Ships: Develop packaging methodologies for transmission and storage of switching devices and subsystems for pulsed power systems.
- Complete MEMS Affordability Program.
- Complete effort to bring current and voltage sensors designed for high power applications from Technical Readiness Level 4 up to Technical Readiness Level 6 through a series of development phases for the manufacture of the sensor systems and develop a test bed for qualification of the system.
- Complete Lead-Free & Environmentally Safe Manufacturing project to reduce the risk of implementing current environmentally safe components and materials.
- Initiate advanced electronics and electro-optics efforts geared towards improvements for the Littoral Combat Ship, EA-18G, and JSF.
- Initiate Fiber Optics effort for J-UCAS.

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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

**FY 2007 Plans:**

- Continue all efforts of FY 2006 less those noted as completed above.
- Complete Light Activated Semiconductor Switch (LASS) for CVN 21.
- Initiate Light Detection and Ranging (LIDAR) project for sensor applications related to radar performance and real time wind speed reporting on DD(X).
- Initiate Fiber Laser effort for reducing the cost and improving the reliability of fiber lasers for applications such as LIDAR.
- Initiate FY 2007 advanced electronics and electro-optics efforts geared towards improvements for the LCS, F/A-18, EA-18G, DD(X), and CVN 21.

	FY 2005	FY 2006	FY 2007
<b>COMPOSITES PROCESSING AND FABRICATION</b>	6,750	6,000	6,863

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. Near-term efforts are focused on the Integrated Systems Investment Strategy platforms: DD(X), CVN 21, and J-UCAS. Future concentration will also include efforts applicable to the Littoral Combat Ship and JSF.

In FY 2004, ManTech embarked on a new Naval Investment Strategy by focusing its efforts on only the most critical manufacturing efforts identified by a few, select acquisition programs. Execution of FY 2005 funds differed from the plan reflected in the prior submit. Funding was realigned to reflect actual execution. The increase in funding between FY 2006 and FY 2007 reflects realignment from other activities to more closely align funding with planned program requirements.

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Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

## **FY 2005 Accomplishments:**

- Continued development of manufacturing processes for embedding conformal antenna elements into composite sandwich construction. (Affordable Integrated Structural Apertures)
- Completed engine qualification testing at General Electric Aircraft Engines and implemented ManTech technology as baseline production process. (Manufacturing Technology for Silicon Carbide Flaps and Seals)
- Completed qualification testing of improved stator for Advanced SEAL Delivery System (ASDS) using Naval Sea Systems Command funds, installed deliverable improved stator as baseline unit on Boat #1 and follow-on hulls, and transitioned technology to production vendor during manufacture of second improved stator. (ASDS Stator)
- Completed investigation and refinement of low-cost composite manufacturing approaches for key vehicle areas identified under concept exploration phase. (J-UCAS System Design and Manufacturing Demonstration Phase)
- Completed remaining DD63 article fabrication using automated insertion process and transitioned the technology into F/A-18E/F. (Automation of Z-Fiber for Complex Shape)
- Completed validation testing at Naval Surface Warfare Center (NSWC) Philadelphia Detachment for new coating candidate systems for propulsion shaft coatings and initiated transition of technology to Northrop Grumman Ship Systems, Puget Sound Naval Shipyard, Portsmouth Naval Shipyard, and Norfolk Naval Shipyard. (Propulsion Shaft Composite Surface Treatment)
- Completed effort with manufacture of two composite impellers to be used in pump loop qualification testing funded by Submarine Program Office PMS 450. (Composite Marine Impellers)
- Completed effort by transitioning generic, multi-functional composite panel processing techniques to the shipyard, with a focus on specific CVN 21 applications such as sponsons, multi-functional radar house, deck edge elevator doors, etc. (CVN 21 Weight Reduction)
- Initiated Phase 1 to develop advanced manufacturing techniques for alternate JSF Weapons Bay Door (WBD) design that employs integrated structure concepts to reduce both weight and cost. (Weapons Bay Door)
- Initiated development of a domestic, low cost capability for manufacture of composite propeller blades, and development of a robust erosion coating application technique for lift fan paddles and propeller blades for the Landing Craft Air Cushion (LCAC) platform. (Composite and Erosion Coating Manufacturing Technology for LCAC Components)
- Initiated project to develop low cost manufacturing and joining processes for skin panels that can be incorporated into a deckhouse design for the Advanced Electric Ship Demonstrator (AESD) that would allow the testing of future topside concepts. The proposed deckhouse would be an aluminum structural frame that is designed to support removable weather boundary panels. In the future, as new signature reduction concepts are developed, panels can be economically manufactured, easily installed on the deckhouse frame and tested. The

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N      PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050      PROJECT TITLE: MANUFACTURING TECHNOLOGY

use of the AESD also allows more realistic signatures testing since the craft can be tested in the marine environment. (AESD Deckhouse)

- Initiated development of manufacturing processes to produce high temperature organic polymer radomes for the Phase III and IV Advanced Medium Range Air-to-Air Missile (AMRAAM) with required surface finish, tolerance control, quality control, and mounting methodology. (Development of Manufacturing Processes to Produce High Temperature Capable Composite Radomes)
- Initiated and completed effort to develop and implement bonded steel-to-composite joint technology that is producible and cost effective while meeting the functional requirements of structures, signatures and longevity for the DD(X). (DD(X): Large Marine Composite Steel Bonded Joint Project, Phase 4)
- Initiated project to develop a robust cost effective composites manufacturing process that incorporates current hardware interfaces so that Lock-In Lock-Out Composite (LIOC) hatches can be fabricated from lightweight materials for the ASDS, reducing overall weight and maximizing effectiveness of the ASDS. (Manufacturing Technology for ASDS LIOC Hatch).

## **FY 2006 Plans:**

- Continue all efforts of FY 2005 less those noted as completed above.
- Complete development efforts on Advanced Hawkeye satellite communications antenna and initiate application of technology to advanced antennas being developed by PEO Integrated Warfare Systems (IWS) for CVN 21 application. (Affordable Integrated Structural Apertures)
- Complete development of a domestic, low cost capability for manufacture of composite propeller blades, and development of a robust erosion coating application technique for lift fan paddles and propeller blades for the LCAC platform. (Composite and Erosion Coating Manufacturing Technology for LCAC Components)
- Complete project to develop low cost manufacturing and joining processes for skin panels that can be incorporated into a deckhouse design for the AESD that would allow the testing of future topside concepts. (AESD Deckhouse)
- Complete development of manufacturing processes to produce high temperature organic polymer radomes for the Phase III and IV AMRAAM. (Development of Manufacturing Processes to Produce High Temperature Capable Composite Radomes)
- Complete project to develop a robust cost effective composites manufacturing process that incorporates current hardware interfaces so that LIOC hatches can be fabricated from lightweight materials for the ASDS. (Manufacturing Technology for ASDS LIOC Hatch).

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

- Initiate projects in support of the Littoral Combat Ship and JSF and establish manufacturing development teams. Pursue manufacturing process improvements supporting CVN 21 and J-UCAS. (Advanced Composites Manufacturing)

**FY 2007 Plans:**

- Continue all efforts of FY 2006 less those noted as completed above.
- Complete full scale WBD manufacturing demonstration and testing. (Weapons Bay Door)
- Initiate/Continue projects in support of the Littoral Combat Ship and JSF and establish manufacturing development teams. Continue to pursue manufacturing process improvements supporting CVN 21 and J-UCAS.

	FY 2005	FY 2006	FY 2007
<b>CORPORATE INVESTMENTS</b>	6,059	11,498	6,825

The Corporate Investments area 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.

In FY 2004, ManTech embarked on a new Naval Investment Strategy by focusing its efforts on only the most critical manufacturing efforts identified by a few, select acquisition programs. Execution of FY 2005 funds differed from the plan reflected in the prior submit. Funding was realigned to reflect actual execution. The decrease in funding between FY 2006 and FY 2007 reflects realignment to other activities to more closely align funding with planned program requirements.

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Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

## **FY 2005 Accomplishments:**

- Continued Best Manufacturing Practices efforts in surveys, the Program Manager's WorkStation, and Collaborative Work Environment.
- Completed Supply-Chain Practices for Affordable Navy Systems (SPANS) efforts in supply chain development and management technologies to improve the agility of the Navy manufacturing base and enhance the affordability of Navy weapon systems.
- Completed Tin Whisker Mitigation effort to develop a method to recoat lead-free component finishes with tin-lead alloy to avoid the electrically conductive hair-like filaments that can cause electrical shorting failures and mechanical damage.
- Completed Lean Pathways (LPW) effort with DDG 51 Program Office and seven suppliers to improve deliveries, improve quality, and reduce cost.
- Completed LPW engagements with two CVNs to introduce lean concepts and improve sortie rate.
- Completed Technology Refresh for Navy Information (TRENT) effort to identify a solution for optimizing technology refresh for Navy weapons systems by identifying a timely and cost-effective plan for each individual system based on anticipated parts obsolescence and technology road mapping.
- Initiated and completed Aegis Ballistic Missile Defense (BDM) Weapons Control Systems (WCS) Computer Processors effort to aid in the integration of state-of-the-art, non-developmental item processors into the Aegis upgrade to meet deployment schedule.
- Initiated and completed effort to develop Navy Capability for Analytical Computing Engineering Trade Studies for a resident analytic computing center to support Navy acquisition programs.
- Initiated and completed effort on Lean Six Sigma for Naval Air Systems Command.
- Initiated J-UCAS Structural Welding effort.
- Initiated LASCOR/10% Ni Steel CVN Tails effort.
- Initiated and completed Mid-Tier Shipyard Capability Assessment effort.
- Initiated development of decision support system. (Gulf Coast Region Maritime Technology Center, NGSS LPD-17, potentially DD(X))
- Initiated Packaging Reconfigurable Antenna Solutions for Improved Mission Adaptability for the Littoral Combat Ship effort.
- Initiated development of low cost Vacuum Assisted Resin Transfer Mold (VARTM) process to produce Virginia-Class "Special Feature" parts that do not require significant post processing/machining and meet drawing and performance specifications. (Composite Manufacturing Technology for "Special Feature")

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DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 1050 PROJECT TITLE: MANUFACTURING TECHNOLOGY

## **FY 2006 Plans:**

- Continue all efforts of FY 2005 less those noted as completed above.
- Complete LASCOR/10% Ni Steel CVN Tails effort.
- Complete development of decision support system. (Gulf Coast Region Maritime Technology Center, NGSS LPD-17, potentially DD(X))
- Complete the development of a low cost VARTM process to produce Virginia-Class "Special Feature" parts that do not require significant post processing/machining and meet drawing and performance specifications. (Composite Manufacturing Technology for "Special Feature")
- Initiate efforts to continue 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 Littoral Combat Ship (LCS), CVN 21 carrier program, and others.

## **FY 2007 Plans:**

- Continue all efforts of FY 2006 less those noted as completed above.
- Complete J-UCAS Structural Welding effort.
- Complete the Packaging Reconfigurable Antenna Solutions for Improved Mission Adaptability for the Littoral Combat Ship effort.
- Initiate efforts to continue to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technologies improvements for Navy weapon system acquisition programs such as the LCS, CVN 21 carrier program, and others.

## **C. OTHER PROGRAM FUNDING SUMMARY:**

### RELATED RDT&E:

Major Acquisition programs, such as: DD(X), LPD-17, LCS, V-22, EFV, F/A-18, and CVN-21.

### NON-NAVY RELATED RDT&E:

PE 0708011F Industrial Preparedness (USAF)  
PE 0708011S Industrial Preparedness (DLA)  
PE 0708045A End Item Industrial Preparedness Activities (ARMY)

## **D. ACQUISITION STRATEGY:**

Not applicable.

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FY 2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: Feb 2006

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0708011N      PROGRAM ELEMENT TITLE: INDUSTRIAL PREPAREDNESS  
PROJECT NUMBER: 9999      PROJECT TITLE: Congressional Plus-Ups

**CONGRESSIONAL PLUS-UPS:**

	FY 2005	FY 2006
IMPROVE MANUFACTURABILITY DEMO OF EXHAUST COMPONENTS FOR MILITARY AIRCRAFT	955	0

This project improved the manufacturability (and therefore reduced production costs) of silicon carbide - carbon composite (SiC-C) exhaust flaps and seals on the GE F414 engine for the F/A 18 E/F Super Hornet fighter jet. The projected results of this effort are savings of more than \$30M over the remaining life of the F414 production program.

	FY 2005	FY 2006
NANO-IMPRINT AT A MANUFACTURING SCALE	2,675	1,400

FY 2005: This project developed the imprint lithography process relating to fluid delivery, imprinting, and in-liquid alignment while keeping the constraints of interferometric mag-lev stages in mind. This project built on unique capabilities in the motion systems area that were previously developed.  
FY 2006: This effort supports nano-imprint at a manufacturing scale research.

	FY 2005	FY 2006
NAVAL APPLICATION OF LASER PEENING TECHNOLOGY	0	1,000

This effort supports research into the Naval application of laser peening technology.



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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		(U) MARITIME TECHNOLOGY (MARITECH)/0708730N					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	9.896	3.400	0.000	0.000	0.000	0.000	0.000
NSRP/ASE/2466	9.896	0.000	0.000	0.000	0.000	0.000	0.000
9999 Congressional Add	0.000	3.400	0.000	0.000	0.000	0.000	0.000

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

The mission of the Maritime Technology (MARITECH) program is to reduce the cost of naval ship construction, modification and repair by enhancing the efficiency and competitiveness of U.S. commercial shipbuilding and ship repair yards. The primary mechanism for achieving this mission has been the National Shipbuilding Research Program / Advanced Shipbuilding Enterprise (NSRP/ASE), a collaborative, cost-sharing effort by U.S. shipbuilders to manage and focus shipbuilding technology research. NSRP/ASE provides a unique legal mechanism to allow collaboration without anti-trust concerns. NSRP/ASE has achieved documented savings and cost avoidance for the Navy, a positive ROI, and a high research-to-implementation transition rate.

**U) CONGRESSIONAL ADD**

The Navy Automatic Identification Technology (AIT) Engineering Support Center (ESC) will support the Navy AIT Project Office (NAVSUP) customers comprised of 35 Navy-wide Echelon II and subordinate commands with AIT integration into supply chain business processes and automated information systems to enhance Fleet readiness and improve logistics

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EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2006</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>		PROGRAM ELEMENT AND NAME 0708730N/Maritime Technology		PROJECT NUMBER AND NAME 2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Project Cost		<b>9.896</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

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

Project 2466 – NSRP/ASE (National Shipbuilding Research Program / Advanced Shipbuilding Enterprise) (note Projects 2466 and 2811 are in fact a single project)

NSRP/ASE was created by U.S. shipyards at Navy's request to reduce the cost of building and maintaining U.S. Navy warships. NSRP/ASE is a collaboration of 11 major U.S. shipyards focused on industry-wide implementation of solutions to common cost drivers. The program targets solutions to consensus priority issues that exhibit a compelling business case to improve the efficiency of the U.S. Shipbuilding and Ship Repair Industry. Over 91 companies from 29 states collaborate on NSRP funded activities.

Annual Navy seed funding acts as a catalyst, while NSRP organizational constructs provide the legal safeguards that enable shipyards to collaborate extensively across corporate boundaries. Industry investment exceeds Navy funding because large teams share in the initial costs of joint evaluation and experimentation. Each yard pays the more substantial costs of implementation and capital investment after the risk is reduced through NSRP/ASE-sponsored research. Additionally, projects that would have been carried out by individual yards at a much slower pace and in isolation are accelerated by the multi-yard effort.

Industry has developed a landmark long range Strategic Investment Plan which guides MARITECH investments. This Strategic Investment Plan provides a framework to guide collaborative research and development among all segments of the U.S. ship construction and repair industry, educational and research institutions, and Government. Major initiatives identified in the Strategic Investment Plan include: Shipyard Production Process Technologies, Business Process Technologies, Product Design and Material Technologies, Systems Technologies, Facilities and Tooling, Education and Training, Technology Transfer, Organizational Change, Environmental Protection and Human Resources.

The program has achieved a positive ROI and is demonstrating documented savings and cost avoidance for the Navy.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2006</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>	PROGRAM ELEMENT AND NAME 0708730N/Maritime Technology	PROJECT NUMBER AND NAME 2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise

**B. Accomplishments/Planned Program**

	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	8.451		
RDT&E Articles Quantity	n/a		

Initiated seven development projects from those proposed in response to Research Announcement 4 (RA4). RA4 projects include: SPARS-3, evaluation of variable balance submerged arc welding technology, SHIPWAY, 2nd tier design enhancement, portable automated plate straightener, shipcheck data capture, ISE-4. All projects will be managed by the Executive Control Board (ECB) of the National shipbuilding Research Program (NSRP) to support current and future Navy Shipbuilding programs.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.750		
RDT&E Articles Quantity			

Continued utilization of industry-led major initiative teams and NSRP panels to perform the execution and annual review of the Strategic Investment Plan, including technology projects, technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.250		
RDT&E Articles Quantity			

Continued technology transfer of project findings and results to shipbuilding programs.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.445		
RDT&E Articles Quantity			

Operated multi-agency support office to facilitate technology transfer between Government and industry.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2006</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>	PROGRAM ELEMENT AND NAME 0708730N/Maritime Technology	PROJECT NUMBER AND NAME 2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	10.172	0.000	0.000
FY 2007 President's Budget	9.896	0.000	0.000
Total Adjustments	<u>-0.276</u>	0.000	0.000

Summary of Adjustments

Small Business Innovation Research	-0.256
Other Adjustments	-0.020

Subtotal -0.276

Schedule:  
Not Applicable.

Technical:  
Not Applicable.

R-1 SHOPPING LIST - Item No. 212

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>		PROGRAM ELEMENT NUMBER AND NAME 0708730N/Maritime Technology			PROJECT NUMBER AND NAME 2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
None.										
<b>E. ACQUISITION STRATEGY:</b>										
NOTE: No funding has been received through the Emergency Response Fund, Defense (ERF,D)										

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2006</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
<b>RDTE&amp;E, N/BA-7</b>			0708730N/Maritime Technology			2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
Technology Development	SS OT*	ECB NSRP**	72.255	9.381							81.636	
											0.000	
Subtotal Technology Development			72.255	9.381		0.000		0.000		0.000	81.636	
Remarks: * Other Transactions IAW 10 USC 2371 ** Executive Control Board of the National Shipbuilding Research Program												
Gov't Support Services/Other Agencies	IPR/WR		0.157	0.030							0.187	
Support Services/Revolving Accounts	MIPR/WR		0.902	0.400							1.302	
Training Development											0.000	
											0.000	
Technology Development											0.000	
											0.000	
Subtotal Support			1.059	0.430		0.000		0.000		0.000	1.489	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)						DATE: <b>February 2006</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>			PROGRAM ELEMENT NUMBER AND NAME 0708730N/Maritime Technology			PROJECT NUMBER AND NAME 2466/National Shipbuilding Research Program Advanced Shipbuilding Enterprise						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Technology Development		PSU/APL	0.489	0.070							0.559	
Technology Development											0.000	
PM Support											0.000	
NSNET											0.000	
Travel			0.117	0.015							0.132	
SBIR Assessment											0.000	
Subtotal Management			0.606	0.085		0.000		0.000		0.000	0.691	
Remarks: * Procure under GSA Schedule												
Total Cost			73.920	9.896		0.000		0.000		0.000	83.816	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-7</b>	PROGRAM ELEMENT AND NAME 0708730N/Maritime Technology		PROJECT NUMBER AND NAME 9999 Congressional Add				
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>0.000</b>	<b>3.400</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty							

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

Project 9858N FY 2006 - Automatic Identification Technology (AIT) Engineering Support Center

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.