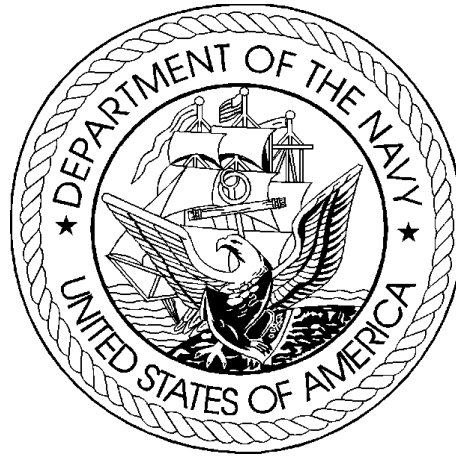


DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2004/2005
BIENNIAL BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES
FEBRUARY 2003

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

UNCLASSIFIED

Department of the Navy

FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	Thousands of Dollars					S E C
			BA	FY 2002	FY 2003	FY 2004	FY 2005	
165	0101221N	Strategic Sub & Weapons System Support	07	43.051	39.307	104.793	139.650	U
166	0101224N	SSBN Security Technology Program	07	32.496	33.730	38.408	43.534	U
167	0101226N	Submarine Acoustic Warfare Development	07	0.944	1.065	2.955	8.580	U
168	0101402N	Navy Strategic Communications	07	4.556	20.902	27.357	32.691	U
169	0203761N	Rapid Technology Transition (RTT)	07	0.000	0.000	14.662	14.683	U
170	0204136N	F/A-18 Squadrons	07	252.854	210.489	179.047	123.041	U
171	0204152N	E-2 Squadrons	07	36.264	18.553	9.083	6.229	U
172	0204163N	Fleet Telecommunications (Tactical)	07	22.544	12.216	16.484	20.996	U
173	0204229N	Tomahawk & Tomahawk Mission Planning Center (TMPC)	07	72.585	97.448	71.385	36.143	U
174	0204311N	Integrated Surveillance System	07	37.711	25.365	14.278	17.028	U
175	0204413N	Amphibious Tactical Support Units	07	25.648	6.185	5.652	0.161	U
176	0204571N	Consolidated Training Systems Development	07	26.048	26.439	21.719	20.184	U
177	0204574N	Cryptologic Direct Support	07	0.000	0.000	1.466	1.468	U
178	0204575N	Electronic Warfare (EW) Readiness Support	07	7.396	26.086	11.927	12.365	U
179	0205601N	HARM Improvement	07	31.016	60.263	49.381	132.290	U
180	0205604N	Tactical Data Links	07	37.906	41.614	44.526	19.089	U
181	0205620N	Surface ASW Combat System Integration	07	27.789	35.106	12.179	11.187	U
182	0205632N	MK-48 ADCAP	07	19.320	21.499	17.227	24.234	U
183	0205633N	Aviation Improvements	07	49.976	39.928	60.073	54.431	U
184	0205658N	Navy Science Assistance Program	07	20.141	15.318	7.236	3.849	U
185	0205667N	F-14 Upgrade	07	1.467	0.000	0.000	0.000	U
186	0205675N	Operational Nuclear Power Systems	07	54.445	55.430	62.751	63.432	U

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PAGE N- 11

UNCLASSIFIED

Department of the Navy

FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	Thousands of Dollars					S E C
			BA	FY 2002	FY 2003	FY 2004	FY 2005	
187	0206313M	MARINE CORPS COMMUNICATIONS SYSTEMS	07	114.659	196.004	235.722	267.268	U
188	0206623M	MC Ground Combat/Spt Arms Sys	07	41.775	38.850	35.439	70.564	U
189	0206624M	MARINE CORPS COMBAT SERVICES SUPPORT	07	7.718	20.516	19.723	10.132	U
190	0207161N	Tactical AIM Missiles	07	17.856	1.909	2.322	4.110	U
191	0207163N	Advanced Medium Range Air-to-Air Missile (AMR	07	9.692	7.928	9.297	7.972	U
192	0303109N	Satellite Communications (SPACE)	07	54.743	112.970	379.541	504.753	U
193	0303140N	Information Systems Security Program	07	26.447	23.665	18.404	19.190	U
194								
195								
196								
197								
198								
199								
200	0305149N	COBRA JUDY	07	0.000	51.061	69.369	81.000	U
201	0305160N	Navy Meteorological and Ocean Sensors - Space	07	20.893	22.251	4.966	4.471	U
202	0305188N	Joint C4ISR Battle Center (JBC)	07	13.075	24.169	50.413	51.735	U
203	0305192N	Joint Military Intelligence Programs	07	6.939	7.038	5.314	4.762	U
204	0305204N	Tactical Unmanned Aerial Vehicles	07	73.152	254.796	56.521	10.605	U
205	0305205N	Endurance Unmanned Aerial Vehicles	07	0.000	0.000	101.448	281.743	U
206	0305206N	Airborne Reconnaissance Systems	07	17.272	16.171	13.345	10.313	U
207	0305207N	Manned Reconnaissance Systems	07	36.912	22.510	13.717	11.809	U
208	0305208N	Distributed Common Ground Systems	07	7.093	8.518	4.421	3.647	U

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Department of the Navy

FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	BA	Thousands of Dollars				S E C
				FY 2002	FY 2003	FY 2004	FY 2005	
209	0305927N	Naval Space Surveillance	07	2.906	9.311	0.000	0.000	U
210	0308601N	Modeling and Simulation Support	07	14.145	9.612	7.044	8.248	U
211	0702207N	Depot Maintenance (Non-IF)	07	15.938	6.947	9.073	0.000	U
212	0708011N	Industrial Preparedness	07	70.326	73.320	54.593	56.810	U
213	0708730N	Maritime Technology (MARITECH)	07	28.356	12.046	10.068	0.000	U
TOTAL	Operational Systems Development			2,333.049	2,922.095	2,901.826	3,129.893	

**Fiscal Year 2004/2005 Budget Estimates
Budget Appendix Extract Language**

**RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY
(RDTEN)**

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, [\$13,946,085,000] \$14,106,653,000, to remain available for obligation until September 30, [2004] 2005: *Provided*, That funds appropriated in this paragraph which are available for the V-22 may be used to meet unique operational requirements of the Special Operations Forces: *Provided further*, That funds appropriated in this paragraph shall be available for the Cobra Judy program. (10 U.S.C. 174, 2352-54, 7522; Department of Defense Appropriations Act, 2003.)

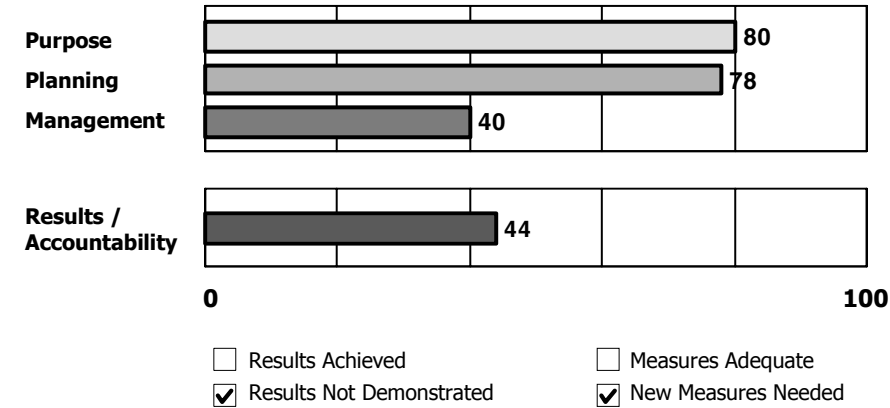
PROGRAM ASSESSMENT RATING TOOL (PART)

This year, the Administration undertook a comprehensive review of 20% of the programs of the Executive Branch, including the same portion of programs within the Department of Defense. Communications Infrastructure of the Department was reviewed as a whole, which includes all networks and systems for transmission of voice, data, and video information programmed and budgeted in the Research, Development, Test & Evaluation, Navy (RDT&EN); Other Procurement, Navy (OPN); and Operation and Maintenance, Navy (O&MN) appropriations. The Department of Defense Communications Infrastructure programs merited a rating of “Results Not Demonstrated.” A summary sheet describing the rating from the Communications Infrastructure evaluation follows.

Program: *Communications Infrastructure*

Agency: *Department of Defense--Military*

Bureau: *Department of Defense--Military*



Key Performance Measures

Year Target Actual

Long-term Measure: DoD is preparing long-term performance metrics, to include system capacity, performance, and user satisfaction. (New measure, target under development)			
Annual Measure: Percent of time that the Non-Secure Internet Protocol Router Network (NIPRNET) access circuit is available. NIPRNET is the unclassified IT system.	2000	> 98.5%	99.63%
	2001	> 98.5%	99.50%
	2002	> 98.5%	
	2003	> 98.5%	
Annual Measure: Number of bases upgraded by the Army Installation Information Infrastructure Modernization Program (I3MP)	2001	5	5
	2002	8	8
	2003	5	

Rating: *Results Not Demonstrated*

Program Type: *Capital Assets*

Program Summary:

The communications infrastructure program includes all networks and systems for transmission of voice, data, and video information for the Department of Defense, with a total investment of about \$5.4 billion in 2003. This analysis includes base level communications activities of the military services, DoD's long distance communications, and the Defense Information System Network (DISN), managed by the Defense Information Systems Agency (DISA), which provides world wide communications capabilities to military personnel. The DISN includes the Global Infrastructure Grid (GIG) Bandwidth Expansion program, which will increase bandwidth connections to over 90 military bases, and the DoD Teleport program, which will improve satellite communications connections.

Overall, the PART reveals that DoD does not manage its communications infrastructure on an enterprise or department-wide basis. Best industry practice suggests a communications infrastructure should be managed with an enterprise approach rather than in a piecemeal fashion by component. The PART assessment also suggests that DoD should develop common performance measures to be used across the entire department for this program. Additional findings include:

1. The program's purpose is clear, owing to the unique military requirements of these systems.
2. The program performs well on planning because it has established clear short-term goals and has taken meaningful steps to address strategic planning deficiencies. It has not, however, established long-term performance measures.
3. While the program does collect performance information and is working to address management deficiencies, it lacks clearly defined long-term performance objectives and does not measure program efficiency or effectiveness.
4. The program results section also shows some weaknesses. Here again the PART highlighted the lack of long-term outcome goals.

In response to these findings, DoD will develop common metrics to assess program performance across the department.

Program Funding Level (in millions of dollars)

<u>2002 Actual</u>	<u>2003 Estimate</u>	<u>2004 Estimate</u>
4,426	5,397	5,674

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE PE 0101221N Strategic Sub & Wpns Sys Spt			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	43.0	39.3	104.8	139.6	141.9	111.0	114.1	114.9
J0951 TRIDENT II	9.1		29.6	30.3	30.4			
S0004 TRIDENT Submarine System Improvement	0.5	5.3	3.0	2.6	3.5	3.4	3.4	3.5
J2228 Technology Applications Program	33.4	34.0	72.2	106.7	108.0	107.6	110.7	111.4

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. Also included in this program element are efforts associated with the three year Enhanced Effectiveness (E2) Demonstration which is intended to demonstrate a near-term capability to steer a SLBM warhead to Global Positioning Satellite (GPS)-like accuracy. Finally, 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.

R-1 SHOPPING LIST - Item No. 165 - 1 of 165 - 22

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, Page 1 of 22)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE PE 0101221N Strategic Sub & Wpns Sys Spt

B. (U) Program Change Summary:

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY2005</u>
Previous President's Budget: FY 2003 President's Controls):	45.5	40.3	41.4	41.8
Current President's Budget (FY 2004 President's Controls):	43.0	39.3	104.8	139.6
Total Adjustments:	-2.5	-0.7	63.4	97.8
Summary of Adjustments:				
Congressional Undistributed Reductions			-0.8	-0.5
Reprogrammings	-1.2		-0.5	-1.2
SBIR Transfer	-0.9			
Management Reform	-0.3	-0.1		
Economic Assumptions/various	-0.1	-0.6	-3.0	-3.0
Nuclear Posture Review Program Add			67.7	102.5

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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME TRIDENT II J0951

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost J0951 TRIDENT II	9.1	0.0	29.6	30.3	30.4	0.0	0.0	0.0
RDT&E Articles Qty								

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

This project supports an Effectiveness Enhancement (E2) Demonstration, starting in FY 2004, which is intended to demonstrate a near-term capability to steer a SLBM warhead to Global Positioning Satellite (GPS)-like accuracy. There will be no redesign of internal navigation components, optimization of packaging, or warhead development. Existing electronics and instrumentation will be packaged in the aft-extension portion of the reentry body (RB). This minimizes demonstration costs, and provides a point of departure for a potential follow-on SDD (System Design and Development) that would optimize for production of similar but smaller components develop appropriate payloads. In addition, modifications to the Missile, Guidance & Fire Control sections would be required to provide the necessary inertial measurement unit (IMU) alignment required for this application. Although the technology being developed applies to ballistic missiles in general, this demonstration is targeted to use TRIDENT II (D5). The demonstration is structured to use the existing D5 design to the maximum extent, and also use instrumentation already developed for reentry bodies (integrating it with control flaps for this new purpose). The demonstration will culminate in flight tests and will provide a final demonstration assessment report and recommended transition plan to the NAVY and STRATCOM in early FY 2007.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME TRIDENT II J0951	

B. (U) Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
SLBM Retargeting System(SRS)	9.1			
RDT&E Articles Quantity				
<p>(U) FY 2002 PLAN</p> <p>(U) (\$9.1) SRS: Efforts continued to complete phase three development required for deployment and final implementation of the SLBM Retargeting System Program in October 2003. Full obligation is complete.</p>				
	FY 02	FY 03	FY 04	FY 05
Enhanced Effectiveness (E2) Demonstration			29.6	30.3
RDT&E Articles Quantity				
<p>(U) FY 2004 PLAN</p> <p>(U) (\$29.6) E2 Demonstration: Efforts begin in support of the three year program. Full obligation is projected by the 3rd quarter of the 1st year.</p> <p>FY 2004 efforts include:</p> <ul style="list-style-type: none"> (U) Initiate and complete system design concepts and trades. (U) Finalize system level requirements and demonstration test objectives (U) Initiate and complete program plans and acquisition documentation (U) Initiate and complete design trade studies and system specifications and initiate detail design of: <ul style="list-style-type: none"> o Fire Control software modifications o Missile electronics modifications o GPS preset data transfer o Reentry body extension, heat shield, flaps, and cabling. (U) Finalize all hardware and software detail designs. (U) Identify GFE/GFI and long lead item procurement required. <p>(U) FY 2005 PLAN</p> <p>(U) (\$30.3) E2 Demonstration: Efforts continue in support of the three year program. Full obligation is projected by the 3rd quarter of the 1st year.</p> <p>FY 2004 efforts include:</p> <ul style="list-style-type: none"> (U) Procure, fabricate, and assemble hardware. (U) Complete Fire Control software build, test, and validation (U) Integrate guidance and reentry body components (U) Complete hardware component ground testing (U) Conduct interface testing (U) Conduct Flight Test Readiness Review 				

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME TRIDENT II J0951

C. (U) Other Program Funding Summary: (Dollars in Thousands)	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>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 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:										
Naval Surface Weapons Center, Dahlgren, VA. Efforts in support of Phase three development of SRS.										
Naval Surface Weapons Center, Dahlgren, VA. Efforts in support of E2 Demonstration										
General Dynamics Defense Systems, Pittsfield, Ma. Efforts in support E2 Demonstration										
Lockheed Martin Missile & Space, Sunnyvale, Ca. Efforts in support of E2 Demonstration										
Charles Stark Draper Lab, Cambridge Ma. Efforts in support of E2 Demonstration										

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Exhibit R-3 Cost Analysis			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT PE 0101221N Strategic Sub & Wpns Sys Spt	PROJECT NUMBER AND NAME TRIDENT II J0951		

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development	SS / CPFF	GDDS / MA	31.2							Cont.	Cont.	TBD
Ancillary Hardware Development	WR	NSWC / VA	69.3							Cont.	Cont.	TBD
SSBN SWS MOD & Test Support	WR	NSWC / VA				2.0	10/03	3.3	10/04	Cont.	Cont.	TBD
SSBN SWS MOD & Test Support	SS / CPFF	GDDS / MA				2.3	10/03	3.1	10/04	Cont.	Cont.	TBD
SSBN SWS MOD & Test Support	SS / CPFF	LNMESS/VA				2.0	10/03	2.0	10/04	Cont.	Cont.	TBD
Test Missile Mods	SS / CPFF	LMMS/CA				5.3	10/03	2.4	10/04	Cont.	Cont.	TBD
E2 Development System	WR	NSWC / VA				1.0	10/03	1.5	10/04	Cont.	Cont.	TBD
E2 Development System	SS/CPFF	LMMS/CA				16.0	10/03	16.5	10/04	Cont.	Cont.	TBD
E2 Development System	SS / CPFF	CSDL/MA				1.0	10/03	1.5	10/04	Cont.	Cont.	TBD
Subtotal Product Development			100.5	0.0		29.6		30.3				

Remarks: All Contract types and individual costs per activity have not been determined yet.

Total Cost			100.5	0.0		29.6		30.3		Cont.	Cont.	TBD

Remarks:

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost J2228 Technology Applications	33.4	34.0	72.2	106.7	108.0	107.6	110.7	111.4
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 is rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. Beginning in FY 2004, SPAP will demonstrate and validate technologies unique to strategic missile applications. Also beginning in FY 2004, the RHAP program will address 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, confidence in the dependability and reliability of strategic SLBM and ICBM weapon systems will be maintained 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 requirements have been integrated with the Air Force requirements into a comprehensive program. The program maintains close coordination with the DOD Science and Technology (S&T) community through the reliance process 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 currently utilize 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, commencing in FY 2004, will be a coordinated Navy/Air Force effort and addresses infrastructure needs by exercising critical developmental skills culminating in annual 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, commencing in FY 2004, will sustain 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 would focus 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, coordinating into the RHOC technology road map and implementation of the USD (AT&L) investment strategy. The RHAP will compliment the GAP electronic part activities by specifically focusing on those tasks required to ensure producibility of radiation hardened parts.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

B. (U) Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Reentry Systems Application Program (RSAP)	17.7	19.3	27.4	27.2
RDT&E Articles Quantity				

(U) FY 2002 PLAN

- (U) (\$17.7) Continue Reentry System Applications Program. Full obligation is complete.

FY 2002 efforts include:

- (U) Continue development and ground testing of reentry vehicle candidate heatshield, nosetip, and aft closure materials including those available from Science & Technology (S&T).
- (U) Evaluate low-cost replacement heatshield flight test demonstration.
- (U) Establish flight confidence in Poly Acrylo Nitrile (PAN) fiber alternate heatshield material candidate for the FY 2005 flight test demonstration.
- (U) Develop an updated ground and flight test program to assess performance of reentry components exposed to operational environments beyond their design life; develop and test risk mitigation concepts for known aging mechanisms.
- (U) Continue evaluation of low-cost design approaches and components for arming and fuzing applications.
- (U) Continue evaluation of low-cost inertial sensor technology for reentry body flight test instrumentation.
- (U) Maintain RSAP technical program plan, conduct system assessments and continue vulnerability & hardening certification process in absence of nuclear under ground testing (UGT) facilities.

(U) FY 2003 PLAN

- (U) (\$19.3) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the first year.

FY 2003 efforts include:

- (U) Continue development and ground testing of reentry vehicle candidate heatshield, nosetip and aft closure materials including those available from Science & Technology (S&T).
- (U) Identify and evaluate next generation low-cost heatshield material candidates.
- (U) Conduct an updated ground and flight test program to assess performance of reentry components exposed to operational environments beyond their design life; evaluate risk mitigation concepts for known aging mechanisms.
- (U) Downselect low-cost design approach and components for Arming and Fuzing applications.
- (U) Downselect a low-cost inertial sensor technology for Reentry Body (RB) flight test instrumentation.
- (U) Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process in absence of Nuclear Under Ground Testing (UGT) facilities.

(U) FY 2004 PLAN

- (U) (\$27.4) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the first year.

FY 2004 efforts include:

- (U) Continue development and ground testing of reentry vehicle candidate heatshield, nosetip and aft closure materials including those available from Science & Technology (S&T).
- (U) Characterize next generation low-cost heatshield material candidates.
- (U) Conduct a ground and flight test program to assess performance of reentry components exposed to operational environments beyond their design life; evaluate initial ground test results; evaluate risk mitigation techniques for known aging mechanisms.
- (U) Document low-cost design approach and components for Arming and Fuzing applications.
- (U) Define packaging and interface designs for Reentry Body (RB) flight test instrumentation inertial sensor technology.
- (U) Maintain RSAP technical program plan, conduct system assessments and conduct Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities.
- (U) Expand Advanced Reentry Body Nosetip development activities
- (U) Resume low cost Reentry Body heatshield replacement development activities.
- (U) Initiate development of GPS simulator for twelve channel receiver.
- (U) Ground test advanced reentry material systems.
- (U) Develop sensors/test methods for studying accelerated aging of Reentry Bodies.
- (U) Initiate development of advanced flight test instrumentation systems
- (U) Develop plan for certification of vulnerability and hardness processes in the absence of underground nuclear testing

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

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

(U) FY 2005 PLAN

- (U) (\$27.2) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the first year.
FY 2005 efforts include:
 - (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 flight test 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) Continue development of GPS simulator for twelve channel 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) Initiate development of low cost replacement In Flight Disconnect (IFD) connector for the MK4A Reentry system
 - (U) Initiate development of optimized Reentry Body separation system

	FY 2002	FY 2003	FY 2004	FY 2005
Guidance Application Program (GAP)	15.7	14.7	16,8	19.5
RDT&E Articles Quantity				

(U) FY 2002 PLAN

- (U) (\$15.7) Continue Strategic Guidance Applications Programs (GAP). Full obligation is complete.
FY 2002 efforts include:
 - (U) Initiate Integrated Engineering Environment (IEE) virtual implementation validation. Complete IEE/Strategic Inertial Guidance Hardware Technology Synthesizer (SIGHTS) integration to evaluate alternate system architectures. Initiate incorporation of alternate sensor technologies, Pendulous Integrated Gyro Accelerometer (PIGA) and system circumvention methodology into SIGHTS.
 - (U) Complete the prototype Interferometric Fiber Optic Gyro (IFOG) fabrication and initiate testing. Initiate alternate stellar subsystem design based on current sensor technology. Survey emergent technologies for alternate gyro and PIGA. Perform radiation testing of current electronics technology.
 - (U) Continue test of Hemispherical Resonator Gyro (HRG) prototype hardware. Testing will assess the best approach to attain Strategic performance.
 - (U) Semiconductor process complexity has been increasing steadily and doubling in density every eighteen to twenty four months. Radiation hardened electronics have typically lagged commercial state-of-the art electronics by two to three generations. Every new generation of electronics has introduced a unique set of radiation response problems. A radiation hardened program is required to address these production, qualification and manufacturing issues. The tasks funded under the GAP program have established the framework for addressing Rad Hard electronics, but do not include the detailed tasking required to fully address all the Rad Hard issues. The Radiation Hardened Application efforts herein will compliment the Gap electronic part activities by specifically focusing on those tasks required to ensure producibility of Rad Hard parts.

Funding provides for:

- o Enhance existing commercial Technology Computer Aided design tools to include radiation and reliability mechanisms
- o Develop physical models for these mechanisms
- o Validate simulations against actual devices produced with a controlled process
- o Maintain commercial software licenses

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

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

(U) FY 2003 PLAN

- (U) (\$14.7) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the 1st year.

FY 2003 efforts include:

- (U) Continue to develop advance sensor models for incorporation in IEE. Integrate IFOG, the HRG, and the Alternate PIGA into SIGHTS. Utilize IEE/SIGHTS capability to perform system architecture/design tradeoffs in support of technology downselect in FY 2006 for D5 Life Extension.
- (U) Continue to evaluate high risk/high payoff sensor technology, (accelerometer, gyro, stellar) for application in the D5 Life Extension Guidance system. Begin prototype radiation-hard sensor build and test.

(U) FY 2004 PLAN

- (U) (\$16.8) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the 1st year.

FY 2004 efforts include:

- (U) Continue to develop alternate models for incorporation in IEE and Hardware in the Loop (HWIL). Incorporate alternate sensor technologies into virtual system and HWIL. Utilize IEE/HWIL capability to perform system architecture/design tradeoffs in support of technology down select in FY 2006 for D5 Life Extension.
- (U) Continue to evaluate high risk/high payoff 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. Continue prototype radiation-hard sensor build and test.
- (U) (Rad-Hard electronics) Invest in Gigantic Magneto-Resistive Memory (GMR) system to meet MK6LE memory goals (presently feasibility funded). Continue radiation hard electronics technology development (processors, memory, timers, oscillators), and circuit design alternatives.
- (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 6-10 gyros focused on improved IFOG dynamic and radiation margin.
- (U) (GYRO) Develop IFOG hardenable electronic circuits.
- (U) (Stellar) Invest in Electron Bombarded (intensified) Charge Couple Device (CCD) and Active Pixel sensors for advanced system concepts.

(U) FY 2005 PLAN

- (U) (\$19.5) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the 1st year.

FY 2005 efforts include:

- (U) Utilize alternate models for incorporation in IEE and 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) (Rad-Hard electronics) Invest in Gigantic Magneto-Resistive Memory (GMR) system to meet MK6LE memory goals (presently feasibility funded). Continue radiation hard electronics technology development (processors, memory, timers, oscillators), and circuit design alternatives.
- (U) (Sensors) Design, build, and evaluate SOA support electronics and improved build processes. Prove SOA capability to meet Rad-hard strategic goals
- (U) (GYRO) Build 6-10 gyros focused on improved IFOG dynamic and radiation margin.
- (U) (GYRO) Develop IFOG hardenable electronic circuits.
- (U) (Stellar) Invest in Electron Bombarded (intensified) CCD and Active Pixel sensors for advanced system concepts.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

B. (U) Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Strategic Propulsion Applications Program (SPAP)	0.0	0.0	8.0	40.0
RDT&E Articles Quantity				

(U) FY 2002 PLAN N/A

(U) FY 2003 PLAN N/A

(U) FY 2004 PLAN

- (U) (\$8.0) Initiate SPAP program. Full obligation is projected by the 3rd quarter of the first year.
 FY 2004 efforts include:
 - (U) Initiate and complete Industrial Base Assessment.
 - (U) Identify, evaluate and down select suitable technologies for Boost Rocket motor test.
 - (U) Identify and evaluate suitable technologies for Post Boost propulsion technologies test.
 - (U) Identify and evaluate suitable Ordnance technologies for missile flight function tests.
 - (U) Identify fabrication of Boost Rocket Motor test hardware.

(U) FY 2005 PLAN

- (U) (\$40.0) Continue SPAP program. Full obligation is projected by the 3rd quarter of the first year.
 FY 2005 efforts include:
 - (U) Continue down select process of Boost Rocket 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 Rocket Motor test hardware.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

B. (U) Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Radiation Hardened Applications Program (RHAP)	0.0	0.0	20.0	20.0
RDT&E Articles Quantity				

(U) FY 2002 PLAN N/A

(U) FY 2003 PLAN N/A

(U) FY 2004 PLAN

- (U) (\$20.0) Initiate RHAP program. Full obligation is projected by the 3rd quarter of the first year.
 FY 2004 efforts include:
 - (U) Start productization and qualification of .35 micron digital Silicon-On-Insulator (SOI) technology
 - (U) Start productization and qualification of .7 micron mixed signal SOI technology.
 - (U) Start evaluation of an Electromagnetic Pulse/Electromagnetic Interference (EMP/EMI) cable coupling model.
 - (U) Start evaluation of system circuit models incorporating Built-in Self Test and effects of dose rate, total ionizing dose and single event effects.
 - (U) Start evaluation of post radiation SPICE models for dose rate, total ionizing dose, and single event effects.

(U) FY 2005 PLAN

- (U) (\$20.0) Continue RHAP program. Full obligation is projected by the 3rd quarter 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 .7 micron mixed signal SOI technology.
 - (U) Continue evaluation of an EMP/EMI cable coupling model.
 - (U) Continue evaluation of system circuit models incorporating Built-in Self Test and effects of dose rate, total ionizing dose and single event effect.
 - (U) Continue evaluation and validation of post radiation SPICE models for dose rate, total ionizing dose, and single event effects.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROJECT NUMBER AND NAME Technology Applications J2228

C. (U) Other Program Funding Summary: (Dollars in Thousands)										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>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/C4 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:										
<ul style="list-style-type: none"> - LMMS / CA - Reentry Body Systems integration (RSAP) - NSWC / VA - Heatshield Nosedip materials development (RSAP) - ITT / CO - Vulnerability and hardness technologies (RSAP) - CNSW / IN - Electronics and hardness testing (RSAP) - CSDL / MA - Reentry Systems flight test instrumentation (RSAP) - CSDL / MA - Guidance Application program support (GAP) - DOE / NM - Advanced fuzing technology (RSAP) - LMMS/CA- Missile radiation hardened electronics integration (RHAP) - CSDL/MA- Guidance radiation hardened electronics integration(RHAP) - LMMS/CA - Missile systems integration (SPAP) - NAWC - Rocket motor testing & integration(SPAP) 										

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE PE 0101221N Strategic Sub & Wpns Sys Spt			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	0.547	5.269	3.012	2.560	3.471	3.356	3.440	3.526
<p>Defense Emergency Response Funds (DERF) : Not Applicable.</p> <p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The TRIDENT operational systems development program results in improvements to the baseline TRIDENT Combat System. Current TRIDENT Combat Systems were first developed in the early 1970s and are becoming increasingly difficult to maintain and offer comparatively less performance than more recently designed systems. Previous efforts to upgrade portions of the TRIDENT Combat System include improvements via sonar and combat control hardware and software (e.g., QE2 programs), feasibility of increased countermeasure capability and a concept evaluation of an Submarine Fleet Mission Program Library (SF MPL) interface. Due to the sensitivity of TRIDENT programs it is assessed that international technology will not have a major impact or be a recipient of the benefits derived from this effort. Development strategies will significantly enhance the sustainability and operability of the sonar, communications and Combat Control Systems on TRIDENTs by evaluating both Obsolete Equipment Replacement (OER) possibilities and potential improvements.</p>								

R-1 SHOPPING LIST - Item No.

165

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7		PROGRAM ELEMENT NUMBER AND NAME PE 0101221N Strategic Sub & Wpns Sys Spt			PROJECT NUMBER AND NAME S0004			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.547	5.269	3.012	2.560	3.471	3.356	3.440	3.526
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The TRIDENT operational systems development program results in improvements to the baseline TRIDENT Combat System. Current TRIDENT Combat Systems were first developed in the early 1970s and are becoming increasingly difficult to maintain and offer comparatively less performance than more recently designed systems. Previous efforts to upgrade portions of the TRIDENT Combat System include improvements via sonar and combat control hardware and software (e.g., QE2 programs), feasibility of increased countermeasure capability and a concept evaluation of an Submarine Fleet Mission Program Library (SF MPL) interface. Due to the sensitivity of TRIDENT programs it is assessed that international technology will not have a major impact or be a recipient of the benefits derived from this effort. Development strategies will significantly enhance the sustainability and operability of the sonar, communications and Combat Control Systems on TRIDENTs by evaluating both Obsolete Equipment Replacement (OER) possibilities and potential improvements.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0101221N Strategic Sub & Wpns Sys Spt	PROJECT NUMBER AND NAME S0004

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Valve Regulated Lead Acid (VRLA) Batteries		4.000	2.500	
RDT&E Articles Quantity				

Valve Regulated Lead Acid (VRLA) Batteries are sealed state-of-the-art technology that significantly reduces the maintenance involved with traditional flooded lead acid submarine batteries. VRLA eliminates the need for air agitation systems, battery make-up water additions, flash arrestors and charcoal filters. VRLA enables convenience charging, requires no special ventilation lineups, requires fewer environmental concerns and offers increased life up to 8 years. Most importantly, VRLA batteries also have many workload (quality of life) and cost reduction benefits. FY03-FY04 funds will be used to perform the initial VRLA cell design, battery well assessment studies, install and operate prototype battery cells, and develop ship alteration packages for all classes.

	FY 02	FY 03	FY 04	FY 05
Ship Control Station Obsolete Equipment Upgrade			0.325	2.020
RDT&E Articles Quantity				

In order to support the expected 42-year operational cycle for a TRIDENT submarine a Ship Control Station (SCS) and Obsolete Equipment Replacement programs needs to be instituted. The OER program will attempt to utilize the design changes that are being developed for the VIRGINIA Class SCS Hull, Mechanical and Electrical (HM&E) interfaces. The replacement SCS will utilize commercial off the shelf components and will replace existing hardware wired displays and indications with flat panel displays and indications.

	FY 02	FY 03	FY 04	FY 05
Architecture Model Maintenance & COTS	0.547	0.480	0.187	0.540
RDT&E Articles Quantity				

Conduct COTS/emergent technology and CCS performance requirements evaluations supporting Trident modernization program/plans. Research and evaluate effectiveness of proposed new technology over the ships' life cycle. Analyze impacts on platform performance with proposed new technology changes using architecture models and tests. Study and identify options in selecting and installing new technology improvements. Evaluate Navigation data interface requirements to meet ECDIS-N compliance on Trident hulls. Complete CCC CONOPS study to accommodate Revision 7.3 (MK2 ECP4) installation. Provide arrangement layouts GFI to Electric Boat (EB) Ship Design Agent (SDA).

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0101221N Strategic Sub & Wpns Sys Spt	PROJECT NUMBER AND NAME S0004

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Data Processing System Development		0.789		
RDT&E Articles Quantity				

To evaluate potential areas of renovation and to identify a phased approach that facilitates the replacement of the TRIDENT CCS/DPS legacy subsystems:

Continue analysis of the physical requirements and characteristics of OER items, including the satisfaction of redundancy, survivability and maintainability requirements. Analyze and recommend applicable COTS hardware and software items, and the identification of any developmental items required for the development of the final product. Identify design options for centralized CCS anomaly, fault and failure data gathering and analysis. Identify DPS Workstation to meet high availability requirements levied by the processing of mission critical data as well as total CCS statusing and alarming in a networked environment, including the provision for a remote workstation display capability in critical spaces to provide complete CCS status monitoring and fault isolation capabilities. Prototype development is also included. Analyze networked architectures embraced by non-TRIDENT platforms for applicability. Analyze design component capture potential from the Submarine Warfare System Design and maximize commonality with proposed SSGN architecture.

Conduct system engineering working group meetings to facilitate a plan to migrate away from the DPS AN/UYK-43 computer. Analyze existing legacy AN/UYK-43 subsystem requirements and determine applicability to future CCS design with Revision 9.0 as the target revision. Identify CCS legacy functionality that may be accommodated by the DPS Workstation design. Analyze signals processing currently performed by the DPS (TSDC) for the Ship Control Subsystem (SCS) and for reassignment to the SCS.

DPS Rev 7.3 Modifications In Support of MK2 ECP-004 NAV Interface:

In lieu of TIDS availability, modifications are necessary to the DPS to provide RLGN-like services for SSBN platforms by implementing a Network Data Processor/Server/Client capability at the DPS Mission Critical Workstation (MCW) to satisfy MK2 and ARCI needs for CCS Revision 7.3. DPS modifications in support of this capability include the serving of Nav Data to TIDS or directly to MK2/ARCI via VA Class IDL using CORBA interfaces and NTP data received from the UYK-43 to MK2/ARCI, also via VA Class IDL. Processing will also be implemented for the DPS MCW to receive health status information from MK2/ARCI for both internal DPS MCW interface statusing as well as to satisfy UYK-43 legacy subsystem user requirements. DPS AOBT processing will also be modified to accept data from ARCI via a TBD CORBA structure.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0101221N Strategic Sub & Wpns Sys Spt	PROJECT NUMBER AND NAME S0004			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.561	5.399	4.412	4.312
Current BES/President's Budget (FY04 Presidents Controls)		0.547	5.269	3.012	2.560
Total Adjustments		-0.014	-0.130	-1.400	-1.752
Summary of Adjustments					
Congressional undistributed reductions		-0.003	-0.062	-0.781	-0.450
Reprogrammings				-0.500	-1.200
FY02 Actuals		-0.011			
PBD203				-0.052	-0.052
PBD604				-0.068	-0.055
Inflation Savings			-0.068		
NWCF Rates Adjustments				0.001	0.005
Subtotal		-0.014	-0.130	-1.400	-1.752
Schedule:					
VRLA BATTERY - FY03 (1st Qtr) – Program Inception; Cell Design and Development					
FY04 (4th Qtr) - Cell Qualification Testing					
FY05 (2nd QTR) - Certification / IOC					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 165

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0101221N Strategic Sub & Wpns Sys Spt	PROJECT NUMBER AND NAME S0004
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
267600 / 267606 BA2 OPN (Electronics)	11117	20905	8560	5297	3428	4034	4099	4170	0	61610
095000 BA1 (HM&E)	21018	38662	26660	63469	119774	126096	135260	139977	0	670916
094500 / 094505 BA1 (Batteries)	10657	13703	11471	26449	24080	30645	13721	114375	0	245101

E. ACQUISITION STRATEGY: *

VRLA Battery - The Type Commanders (TYCOMs) establish battery replacement schedules based on battery performance and maintenance availability. Beginning in FY04, NAVSEA intends to shift procurement from flooded batteries to VRLA. In FY05, the only replacement batteries available will be VRLA; thus the SHIPALT must be accomplished to support installations beginning in FY05.

Ship Control Station - The proposed architecture will consist of the following hardware components. Ship Control Panel (SCP), Ballast Control Panel (BCP), Remote Interface Controller (RIC), Remote Interface Box (RIB). The SCP will be modified by removing the existing panels and replacing them with the flat panel display that provide the operator controls and indications needed to control all plane surfaces. The existing emergency hydraulic control will be maintained.

F. MAJOR PERFORMERS: **

- VRLA Batteries
- NSWC Crane, Indiana: Development engineering and test support.
- GNB, Fort Smith, Arkansas: Battery cell design/development.
- General Dynamics Electric Boat, Groton, Connecticut: Ship alteration package design/development.
- Northrop Grumman Newport News, Newport News, VA: Ship alteration package design/development.

Ship Control Station - NSWC CARDEROCK

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

** Required for DON and OSD submit only.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0101221N Strategic Sub & Wpns Sys Spt			S0004						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
Project Unit A												
											0.000	
Design/Development Engineering	SS/CPFF	Electric Boat, Groton, CT		1.300	01/03	0.569	01/04	0.000	N/A	0.000	1.869	1.957
Design/Development Engineering	SS/CPFF	NG NNEWS, VA		1.270	01/03	0.500	01/04	0.000	N/A	0.000	1.770	1.242
Developmental Test & Evaluation	SS/WR	NSWC CRANE, IN		1.430	01/03	1.431	01/04			0.000	2.861	3.301
											0.000	
Project Unit B												
											0.000	
Design/Development Engineering	SS/WR	NSWC Carderock, MD				0.325	01/04	2.020	01/05	2.875	5.220	5.220
											0.000	
											0.000	
											0.000	
Subtotal Product Development				4.000		2.825		2.020		2.875	11.720	
Remarks: NSWC Crane - Funds will be used to perform the initial VRLA cell design, battery well assessment studies and develop the prototype battery.												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0101221N Strategic Sub & Wpns Sys Spt			S0004						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Total Cost			0.000	4.000		2.825		2.020		2.875	11.720	
Remarks:												

R-1 SHOPPING LIST - Item No. 165

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EXHIBIT R-2, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME Sub Acoustic Warfare Dev/0101226N			PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/F1265			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.944	1.065	2.955	8.580	8.751	8.908	9.074	9.240
RDT&E Articles Qty								
Defense Emergency Responses Funds (DERF): Not Applicable								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all classes of US submarines. 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. Next Generation Countermeasure (NGCM) comprise of simulation and effectiveness analysis at the Weapons Analysis Facility (WAF) which provides the US Navy with testing of hardware and software within detailed representations of acoustic environments. NGCM also includes Future Naval Capability (FNC) efforts at Office of Naval Research (ONR). Anti-Torpedo Torpedo (ATT) includes integration and testing efforts that will be used to determine physical compatibility of the Anti-Torpedo Torpedo (ATT) All Up Round (AUR) to survive storage and launch from the CSA MK2 countermeasure launcher.</p>								

R-1 SHOPPING LIST - Item No. 167

Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 1 of 7)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME Sub Acoustic Warfare Dev/0101226N	PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/F1265

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.478	0.533	0.000	0.000
RDT&E Articles Quantity				

FY02-03 - Continue Acoustic Intercept Technology transition and conduct at-sea testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.466	0.532	1.514	1.530
RDT&E Articles Quantity				

FY02-05 - Continue to conduct countermeasure proofing and effectiveness analysis for designated torpedo at Weapons Analysis Facility (WAF) .

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.441	7.050
RDT&E Articles Quantity				

FY04-Begin Commonality Integration/development of ATT AUR for Submarine using a modified Submarine CSA MK2 Launcher systems.
 FY05-Continue ATT Development and Submarine Integration. Conduct at-sea Submarine Launch Capability Test using a modified CSA MK2 Launcher

R-1 SHOPPING LIST - Item No. 167

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME Sub Acoustic Warfare Dev/0101226N	PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/F1265			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.996	1.091	3.078	8.821
Current BES/President's Budget: (FY04/05 Pres Controls)		0.944	1.065	2.955	8.580
Total Adjustments		-0.052	-0.026	-0.123	-0.241
Summary of Adjustments					
SBIR/STTR Transfer		-0.014			
Economic Assumptions/Bus Process Reform		-0.038	-0.026	-0.123	-0.241
Subtotal		-0.052	-0.026	-0.123	-0.241
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 167

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7			PROGRAM ELEMENT NUMBER AND NAME Sub Acoustic Warfare Dev/0101226N			PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/F1265				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
221000/221005 Submarine Acoustic Warfare Syst	13.342	22.700	24.631	20.974	23.713	25.489	26.056	31.392		
 E. ACQUISITION STRATEGY: *										
See Attached Schedule										
 F. MAJOR PERFORMERS: **										
See Attached R-3										

R-1 SHOPPING LIST - Item No. 167




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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME Sub Acoustic Warfare Dev/0101226N	PROJECT NUMBER AND NAME Submarine Defensive Warfare Systems/F1265
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	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Acoustic Intercept Improvement Initiative - SPVA	Sensor Development		 APB(A) 02 Test  At-Sea Tests						
	Transition Phase								
Anti-Torpedo Torpedo				ATT AUR Commonality Integration					
					 At-Sea Compatibility Test				
Weapons Analysis Facility				CM Effectiveness / WAF Threat Vulnerability					
NGCM						Next Generation CM			

R-1 SHOPPING LIST - Item No. 167

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA-7			Sub Acoustic Warfare Dev/0101226N			Submarine Defensive Warfare Systems/F1265						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Analysis	WR	NUWC Newport, RI	4.746	0.825	12/03	1.509	12/03	1.555	12/05		8.635	
Systems Engineering	CPFF	PSU, State College, PA				1.071	01/04	6.200	01/05		7.271	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			4.746	0.825		2.580		7.755			15.906	
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	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA-7			Sub Acoustic Warfare Dev/0101226N			Submarine Defensive Warfare Systems/F1265						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	C/CPFF	RM Vredenburg Reston, VA	1.907	0.190	02/03	0.275	02/04	0.725	02/05		3.097	
Travel		PMS415	0.050	0.050		0.100		0.100			0.300	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.957	0.240		0.375		0.825			3.397	
Remarks:												
Total Cost			6.703	1.065		2.955		8.580			19.303	
Remarks:												

R-1 SHOPPING LIST - Item No. 167

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 7)

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0101402N Navy Strategic Communications			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	4.556	20.902	27.357	32.691	35.028	29.322	1.521	0.162
H0793 E-6 Service Life Assessment		2.829	3.128	0.979				
H3002 Navy Strategic Communications Block 1	4.556	18.073	24.229	31.712	35.028	29.322	1.521	0.162

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(H0793) A Service Life Assessment of selected critical components will be 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. 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, individual aircraft tracking, and optimize the E-6 Maintenance Plans. The contractor will perform preliminary high level trade studies of potential modifications to increase the service life.

(H3002) The Block I project corrects FOT&E deficiencies. It consists of the design, development, integration and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS), Very Low Frequency (VLF) transmit terminal, Mission Computer System (MCS) and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block 1 project also incorporates an Open Systems Architecture (OSA) into the E-6 aircraft, fixes ground power and cooling capabilities for austere operations, and adds automatic retransmit of voice messages and improved workstations in the battle staff area.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		2.829	3.128	0.979				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(H0793) A Service Life Assessment of selected critical components will be performed on the E-6B. The original service life of this airframe was 27,000 hrs 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 hr airframe service life. 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, individual aircraft tracking, and optimize the E-6 Maintenance Plans. The contractor will perform preliminary high level trade studies of potential modifications to increase the service life.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications	PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Engineering and Technical Support / \$6.936		2.829	3.128	0.979
RDT&E Articles Quantity N/A				

Funding supports the E-6 Service Life Assessment Program, which includes the following efforts: Assemble and deliver GFI; review and correct CDRLs; assist contractor in developing critical location selection criteria; perform RCM Analysis; assess scheduled maintenance impacts; perform supportability analysis; attend technical review meetings; determine the load-to-strain/stress relationships for each critical location; generate a service spectra and calculate critical location fatigue lives that 90 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; 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.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications	PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	2.899	3.200	1.000
Current BES/President's Budget		0.000	2.829	3.128	0.979
Total Adjustments		0.000	-0.070	-0.072	-0.021
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.017		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.053	-0.072	-0.021
Reprogrammings					
Other Navy/OSD Adjustments					
Congressional increases					
Subtotal		0.000	-0.070	-0.072	-0.021
Schedule:					
Schedule change regarding report deliveries is due to update of the requirements since the FY-03 President's Budget.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications	PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
056400 E-6A/B Series	74.986	55.787	48.517	22.083	15.775	47.245	81.206	73.729	175.626	594.954

E. ACQUISITION STRATEGY:

SLAP will be a sole source program due to the proprietary nature of the data needed to complete required studies and analyses. This will be a Cost Reimbursable Contract. Contract Award is expected in 2nd quarter FY03. SLAP analysis is the precursor to an effective SLEP program, needed to keep this aircraft a viable Strategic Asset.

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0101402N Navy Strategic Communications			H0793 E-6 Service Life Assessment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Studies & Analyses	SS/CPIF	Boeing Seattle, WA		2.278	03/03	2.383	10/03	0.979	10/04		5.640	5.640
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	2.278		2.383		0.979		0.000	5.640	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0101402N Navy Strategic Communications			H0793 E-6 Service Life Assessment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Government Engineering Support	WX	NAWCAD PAX RIVER, MD		0.491	10/02	0.439	10/03				0.930	
Government Engineering Support	WX	NADEP JAX, FL				0.286	10/03				0.286	
Travel				0.060	Various	0.020	Various				0.080	
											0.000	
											0.000	
Subtotal Management			0.000	0.551		0.745		0.000		0.000	1.296	
Remarks:												
Total Cost			0.000	2.829		3.128		0.979		0.000	6.936	
Remarks: There is no Product Development related to this program.												

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EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications								PROJECT NUMBER AND NAME H0793 E-6 Service Life Assessment																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Contract Award																																

R-1 SHOPPING LIST - Item No. 168

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

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME H3002 Navy Strategic Communications Project Block 1			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.556	18.073	24.229	31.712	35.028	29.322	1.521	0.162
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(H3002) The Block I project corrects FOT&E deficiencies. It consists of the design, development, integration and testing of the replacements for the existing Digital Airborne Intercommunications Switching System (DAISS), Very Low Frequency (VLF) transmit terminal, Mission Computer System (MCS) and Ultra-High Frequency Command, Control and Communications (UHF C3) system. The Block 1 project also incorporates an Open Systems Architecture (OSA) into the E-6 aircraft, fixes ground power and cooling capabilities for austere operations, and adds automatic retransmit of voice messages and improved workstations in the battle staff area.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications	PROJECT NUMBER AND NAME H3002 Navy Strategic Communications Project Block 1

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Acquisition Planning & Milestone Documentation /\$21.968M	1.707	9.808	4.747	5.706
RDT&E Articles Quantity N/A				

Funding supports acquisition planning initiation, acquisition strategy development & implementation, requirements and engineering specification development & refinement, industry day conferences, DoD 5000 series document development, program management, contract award activities, preliminary design reviews (PDRs), CDRL reviews, technical interchange meetings, and discussions and incremental design approval for the replacement of DAISS, VLF, MCS, UHF C3 System, incorporation of OSA, fixes in ground power and cooling capabilities for austere operations, and addition of automatic retransmit of voice messages and flat panel displays in the battle staff area.

	FY 02	FY 03	FY 04	FY 05
Engineering, Mgmt., Studies & Analysis / \$19.342M	2.849	8.265	3.778	4.450
RDT&E Articles Quantity N/A				

Funding supports engineering, management, and studies and analysis contract support services for acquisition planning and development of acquisition documents, schedule development and monitoring, industry day conferences, DoD 5000 series document development, Request for Proposal (RFP) development, baseline testing, engineering and C3 architectural studies and analysis, logistics planning, training planning and CDRL reviews for the replacement of DAISS, VLF, MCS, UHF C3 System, incorporation of OSA, fixes in ground power and cooling capabilities for austere operations, and addition of automatic retransmit of voice messages and flat panel displays in the battle staff area.

	FY 02	FY 03	FY 04	FY 05
Prime System Development / \$37.260M			15.704	21.556
RDT&E Articles Quantity N/A				

Funding supports prime contract award for Block I program initiation, engineering research, design development for OSA, MCS, DAISS and other subsystems related to Block I, preparations (engineering, logistics, training) for PDRs, preparation for and presentation of the Block I design, LRIP approval and successive technical interchange meetings leading to Critical Design Review (CDR).

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications	PROJECT NUMBER AND NAME H3002 Navy Strategic Communications Project Block 1			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		4.168	18.553	43.481	41.566
Current BES/President's Budget		4.556	18.073	24.229	31.712
Total Adjustments		0.388	-0.480	-19.252	-9.854
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.142		
Congressional rescissions		-0.009			
SBIR/STTR Transfer		-0.092			
Economic Assumptions		-0.012	-0.338	-0.603	-0.713
Reprogrammings		0.501			
Other Navy/OSD Adjustments				-18.649	-9.141
Congressional increases					
Subtotal		0.388	-0.480	-19.252	-9.854
Schedule:					
Change in schedule is due to E-6 TOA realignment and going from a three phase program to a single phase program.					
Technical:					
Technical change is due to ancillary technical descriptions being slightly different as the Block 1 program becomes better defined. Primary modifications and corrections to FOT&E deficiencies remain the same. Also, technical requirements for HPTS were shifted to APN-5 for further definition.					

R-1 SHOPPING LIST - Item No. 168

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0101402N Navy Strategic Communications			PROJECT NUMBER AND NAME H3002 Navy Stategic Communications Project Block 1				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
056400 E-6A/B Series	74.986	55.787	48.517	22.083	15.775	47.245	81.206	73.729	175.626	594.954
E. ACQUISITION STRATEGY:										
Competitively Award Cost Plus Development Contract with follow on FFP Production Contract.										
F. MAJOR PERFORMERS:										

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0101402N Navy Strategic Communications			H3002 Navy Strategic Communications Project Block 1						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	TBD				15.704	10/03	21.556	10/04	48.851	86.111	86.111
											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		15.704		21.556		48.851	86.111	
Remarks:												
Studies & Analyses	RX	Various	0.571	2.351	10/02	0.795	10/03	0.953	10/04	1.543	6.213	6.213
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.571	2.351		0.795		0.953		1.543	6.213	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0101402N Navy Strategic Communications			H3002 Navy Strategic Communications Project Block 1						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Program Management Support	RX	Various A&AS	1.105	2.796	10/02	1.065	10/03	1.310	10/04	1.665	7.941	
Government Engineering Support	WX	NAWCAD PAX RIVER, MD	1.475	9.234	10/02	4.139	10/03	5.095	10/04	8.859	28.802	
Contractor Engineering Support	RX	Various A&AS	1.173	3.118	10/02	1.918	10/03	2.187	10/04	3.859	12.255	
Government Engineering Support	WX	NADEP JAX, FL	0.102			0.108	10/03	0.111	10/04	0.201	0.522	
Travel			0.130	0.574	Various	0.500	Various	0.500	Various	1.055	2.759	
											0.000	
Subtotal Management			3.985	15.722		7.730		9.203		15.639	52.279	
Remarks:												
Total Cost			4.556	18.073		24.229		31.712		66.033	144.603	
Remarks:												

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0101402N Navy Strategic Communications				PROJECT NUMBER AND NAME H3002 Navy Statigic Communications Project Block 1			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Preparation	2Q-4Q	1Q						
Source Selection		1Q-4Q						
Milestone B (MS B)		4Q						
Contract Award			1Q					
Preliminary Design Review (PDR)			2Q					
Critical Design Review (CDR)				1Q				
Prototype Phase				2Q-4Q	1Q-2Q			
Pre-Production A/C				4Q	1Q-4Q			
Contractor/Developmental Testing (CT/DT)					4Q	1Q-2Q		
Milestone C (MS C)						2Q		
Operational Testing (OPEVAL)						2Q-4Q		
LRIP Phase						2Q-4Q	1Q-4Q	1Q
Full Rate Production (FRP) Decision/Start							1Q	
First Deployment							4Q	
IOC								4Q

R-1 SHOPPING LIST - Item No. 168

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 17 of 17)

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R4021 Rapid Technology Transition	0	0	14,662	14,683	14,701	14,691	14,690	14,685

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Consistent with the goals of Sea Enterprise as a supporting element of Sea Power 21, the mission of the Rapid Technology Transition (RTT) program is to increase the rate at which new, innovative and potentially disruptive technology is inserted into Department of Navy (DoN) acquisition programs and the hands of the warfighter. A key aspect of the RTT program is its mission to transition technology from any source. Increased knowledge of developments in commercial markets, especially those not traditionally associated with defense technology, will increase the opportunities for spiral development of capability through technological innovation, validated by experimentation. Specific individual activities will increase Fleet/Force capability, reduce total ownership cost, and leverage external funds to address naval needs. An effective and robust integration of commercial and military manufacturing can improve military acquisition capabilities and capacity dramatically. Therefore, RTT will coordinate and collaborate with industry to ensure that integrated manufacturing issues are taken into account from the outset whenever a transition is under consideration, in order to increase warfighting capability at substantially lower unit and life cycle costs than would be achievable in a "military-unique" production environment. RTT will work closely with the full spectrum of the commercial sector, from start-ups to small businesses to large corporations. In the broadest sense, RTT will be a catalyst for transformation of the Sea Enterprise.

Rapid transition opportunities occur when a sufficiently mature technology is identified that can meet a particular need on a timetable which matches that of an acquisition program, and is supported by a business case which justifies the associated cost and schedule risk. The combination of circumstances which create such opportunities will vary in each case; they appear, and disappear, well inside the POM cycle. Accordingly, the RTT program will be pro-active in identifying opportunities and will be flexible and agile in exploiting them. RTT will carry out pilot studies and demonstrations of e-business tools and other business practices to identify technology needs of the warfighter and the acquisition community, as well as potential technology solutions from all sources.

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT will interact with the venture capital community and industry. These interactions will be exploited to increase warfighting capability at affordable cost. The RTT program will coordinate closely with PEOs/PMs to maintain awareness of insertion opportunities. Utilizing existing authorities, RTT will apply execution year funds where necessary to "jump-start"

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

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. Examples of crucial areas where rapid technology transition likely will have immediate impact include: precision underwater mapping in support of mine warfare, titanium nitride coating technology for helicopter turbine engine blades used in harsh environments, and real-time oil analysis to monitor diesel generator health aboard ship, among others.

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget Submission:	0	0	0	0
Adjustments from FY 2003 President's Budget:				
Start Rapid Technology Transition	0	0	+14,662	+14,683
FY 2004/2005 President's Budget Submission:	0	0	14,662	14,683

PROGRAM CHANGE SUMMARY EXPLANATION:

Schedule: Not Applicable
Technical: Not Applicable

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FY 2004/2005 RDT&E,N PROJECT COST ANALYSIS
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0203761N
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

Project Number: R4021
Project Title: Rapid Technology
Transition (RTT)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R4021/Rapid Technology Transition	0	0	14,662	14,683	14,701	14,691	14,690	14,685

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Consistent with the goals of Sea Enterprise as a supporting element of Sea Power 21, the mission of the Rapid Technology Transition (RTT) program is to increase the rate at which new, innovative and potentially disruptive technology is inserted into DoN acquisition programs and the hands of the warfighter. A key aspect of the RTT program is its mission to transition technology from any source. Increased knowledge of developments in commercial markets, especially those not traditionally associated with defense technology, will increase the opportunities for spiral development of capability through technological innovation, validated by experimentation. Specific individual activities will increase Fleet/Force capability, reduce total ownership cost, and leverage external funds to address naval needs. An effective and robust integration of commercial and military manufacturing can improve military acquisition capabilities and capacity dramatically. Therefore, RTT will coordinate and collaborate with industry to ensure that integrated manufacturing issues are taken into account from the outset whenever a transition is under consideration, in order to increase warfighting capability at substantially lower unit and life cycle costs than would be achievable in a "military-unique" production environment. RTT will work closely with the full spectrum of the commercial sector, from start-ups to small businesses to large corporations. In the broadest sense, RTT will be a catalyst for transformation of the Sea Enterprise.

Rapid transition opportunities occur when a sufficiently mature technology is identified that can meet a particular need on a timetable which matches that of an acquisition program, and is supported by a business case which justifies the associated cost and schedule risk. The combination of circumstances which create such opportunities will vary in each case; they appear, and disappear, well inside the POM cycle. Accordingly, the RTT program will be pro-active in identifying opportunities and will be flexible and agile in exploiting them. RTT will carry out pilot studies and demonstrations of e-business tools and other business practices to identify technology needs of the warfighter and the acquisition community, as well as potential technology solutions from all sources.

To ensure the widest possible awareness of emergent commercial technology opportunities, RTT will interact with the venture capital community and industry. These interactions will be exploited to increase warfighting capability at affordable cost. The RTT program will coordinate closely with PEOs/PMs to maintain awareness of insertion opportunities. Utilizing existing authorities, RTT will apply 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

R-1 Line Item 169

Page 3 of 6

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N PROJECT COST ANALYSIS
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0203761N Project Number: R4021
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT) Project Title: Rapid Technology Transition (RTT)

demonstrations of high risk/high payoff technologies. Examples of crucial areas where rapid technology transition likely will have immediate impact include: precision underwater mapping in support of mine warfare, titanium nitride coating technology for helicopter turbine engine blades used in harsh environments, and real-time oil analysis to monitor diesel generator health aboard ship, among others.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY 05
RTT	0	0	14,662	14,683

FY 2002 ACCOMPLISHMENTS:
Not Applicable

FY 2003 PLANS:
Not Applicable

FY 2004 PLANS:

This new start will be managed by the Commercial Technology Transition Office (CTTO) within the Office of Naval Research. Initial program thrusts will include:

- **Identify and fund high risk/high payoff rapid transition opportunities**, especially those leading to the capabilities required by Sea Power 21. While FY04 emergent candidates cannot be predicted very far in advance, the kinds of opportunities which could exist are suggested by some examples which could be exploited in FY03(were this program to exist): precision underwater mapping in support of mine warfare, titanium nitride coating technology for helicopter turbine engine blades used in harsh environments, and real-time oil analysis to monitor diesel generator health aboard ship, among others. Partnering with other organizations, including leadership within Sea Trial and Sea Enterprise, has already begun, to align some of these efforts in preparation for FY04.
- **Establish pilot project to demonstrate rapid technology transition knowledge management tools.** The ultimate goal is to have web-enabled knowledge management tools available worldwide 24/7/365, to allow direct inputs by, and interactions among, warfighters, technologists, and solution providers. Both SIPRNET and NIPRNET versions will be developed. Benefits include understanding all sides of the rapid technology transition equation. In particular, the ability to rapidly transition high risk/high payoff technologies requires a real-time, always-available set of data that identify naval needs and possible technologies that might address such needs, along with a comprehensive list of people, companies, and industries that can build solutions - from the garage inventor to the large primes. The RTT will:
 - o Create a pilot knowledge management system that includes naval needs by working with Navy and Marine Corps Warfighters, Program Executive Officers and Program Managers--accessible by OSD, other services and designated Federal agencies.

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FY 2004/2005 RDT&E,N PROJECT COST ANALYSIS
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0203761N Project Number: R4021
PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT) Project Title: Rapid Technology Transition (RTT)

- o Identify commercial technology that could be adapted to meet naval needs, and incorporate them into the pilot knowledge management system. These technologies may not currently be fully exploited within the commercial sector, but could be developed with a modest investment.
- o Begin population of the knowledge management system with feedback from Sea Trial lessons learned, Fleet Battle Experiments, Advanced Warfighting Experiments, Limited Objective Exercises, Wargames, to include joint experimentation.
- **Engage the venture capital (VC) community to acquire warfighting capability at affordable cost.** Such engagement will provide increased awareness of commercial sector technology developments and leverage the value of unique naval assets and intellectual property (IP). The RTT will accomplish this objective by bringing together naval assets and commercial entities that can use or develop products that meet naval needs. Venture Capitalists have access to large funding sources which they invest in small, agile, technology companies. The RTT will work with VCs to achieve a commitment on their part, then to leverage their funds in support of technologies meeting naval needs (goal: 5:1 leverage). This effort could reduce acquisition program costs, promote more efficient DoN business operations and practices, and increase warfighting capability.
 - o The program envisions that engaging the VC community will increase DoN awareness and reduce time to market for technologies identified as required to meet current naval needs, and that this approach will add to the supply of technology which was previously unavailable in the marketplace.
 - o A key aspect of the RTT mission is to rigorously evaluate various rapid technology transition strategies and business models via role-playing games and other means. The RTT will support senior acquisition decision makers by conducting assessments and creating roadmaps of alternate transition paths. Benefits include evaluating various business models with minimum expenditure of resources, and applying Lessons Learned to business approaches. This enterprise approach can lead to more rapid - and more effective - transitions of new technology into naval systems.

FY 2005 PLANS:

- Identify and fund rapid transition opportunities, especially those leading to the capabilities required by Sea Power 21. The approach will be similar to FY04, with specific transitions identified as opportunities appear.
- Maintain and extend the pilot SIPRNET and NIPRNET RTT knowledge management system.
- Expand RTT venture initiatives.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E: All technology investments in DoN

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

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FY 2004/2005 RDT&E,N PROJECT COST ANALYSIS
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0203761N

Project Number: R4021

PROGRAM ELEMENT TITLE: Rapid Technology Transition (RTT)

Project Title: Rapid Technology
Transition (RTT)

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	252.854	210.489	179.047	123.041	50.314	11.422	10.997	11.164
E1662 F/A-18 Improvements	137.412	95.079	69.032	44.463	14.701	11.422	10.997	11.164
E2065 F/A-18 RADAR Upgrade	114.294	104.481	110.015	78.578	35.613			
E2130 F/A-18 Follow-On Variant	1.148							
E9267 F414 Engine Durability Improvements		6.832						
E9268 APG-73 Radar Upgrade		4.097						

U) 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. 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 Naval Strike Fighter program transitioned from full-scale engineering development to operational systems development during FY 1983. As F/A-18 squadrons report discrepancies and new requirements, a continuing capability is needed to perform technical evaluations, investigative flight testing, software support, and incorporate Pre-Planned Product Improvements (P3I) (i.e., capability enhancements).

F/A-18 Radar Upgrade: 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.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS	
<p>F/A-18 Follow-On Variant: The follow-on F/A-18 (E/F version) is an airframe upgrade incorporating increased capabilities, performance, and survivability necessary to satisfy the 41% percent increase in range over the C/D in the high-low-low-high attack/interdiction mission carrying three 480 gallon drop tanks, four 1,000 pound bombs, and two AIM-9 air-to-air missiles. The E/F version has increased internal fuel capacity, increased weapons carriage capability, increased carrier recovery payload, enhanced survivability/vulnerability, increased growth capacity, and increased engine thrust. It retains all of the P3I enhancements developed for the earlier night attack C/D version of the aircraft.</p> <p>F414 Engine Durability Improvements: The F414-GE400 used on the F/A-18 E/F aircraft, is a low bypass turbofan engine, with augmented thrust provided by the afterburner. The engine is 155.5 inches long, weighs 2,445 lbs. and has an inlet diameter of 30.6 inches. The engine is rated at 14,770 lbs. thrust at the max power throttle setting without the afterburner, and 21,890 lbs. of thrust at the max afterburner throttle setting given standard day settings of 59°, 0% humidity, and sea level static conditions.</p> <p>AN/APG-73 Radar Upgrade: The AN/APG-73 radar will alleviate Electronic CounterCountermeasures (ECCM) deficiencies noted in AN/APG-65 radar. The AN/APG-73 design incorporates hardware and software upgrades which increase ECCM effectiveness and provide growth potential for advance ECCM capabilities. AN/APG-73 provides significant improvements in resolution, dynamic range, processing speed and memory over the AN/APG-65.</p>		

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 45)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS			PROJECT NUMBER AND NAME E1662 F/A-18 Improvements			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	137.412	95.079	69.032	44.463	14.701	11.422	10.997	11.164
RDT&E Articles Qty								

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, Forward Looking Infrared (FLIR) pods, and various bomb/missile launching racks). 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), Advanced Targeting Forward Looking Infrared (ATFLIR), development and integration of the Multifunctional Information Distributions System (MIDS), 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), 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. As F/A-18 Squadrons report system problems/requirements, a continuing capability is needed to perform technical evaluations/investigative flight testing, provide software support and integrate selected improvements.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E1662 F/A-18 Improvements

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.495	1.184	1.134	0.899
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 and systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.420	20.686	10.722	12.923
RDT&E Articles Quantity				

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

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.391	23.626	24.551	12.691
RDT&E Articles Quantity				

Continue and complete development of JHMCS Front and OPEVAL. Start and complete development of Aft Seat.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E1662 F/A-18 Improvements
-------------------------------------------------------------	--------------------------------------------------------------	------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	42.474	13.336		
RDT&E Articles Quantity				

Complete development of ATFLIR to include DT-IIIE testing, TECHEVAL, Operational Test Readiness Review (OTRR) testing, and OPEVAL.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	62.211	23.704	17.459	14.428
RDT&E Articles Quantity				

Complete software conversion from Assembly language, to include H1E SCS and H2E SCS. Start and complete Validation/Verification(V/V), OT and OT&E.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	19.421	12.543	15.166	3.522
RDT&E Articles Quantity				

Continue and complete Aft cockpit ACS development and integration. Start and complete TECHEVAL and OTIIA.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204136N/F/A-18 SQUADRONS	E1662 F/A-18 Improvements

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	140.401	97.416	73.626	45.771
Current BES/President's Budget	137.412	95.079	69.032	44.463
Total Adjustments	-2.989	-2.337	-4.594	-1.308
Summary of Adjustments				
Congressional program reductions		-0.576		
Congressional undistributed reductions	-0.018			
Congressional rescissions	-0.289			
SBIR/STTR Transfer	-2.433			
Economic Assumptions	-0.378	-1.761	-1.743	-1.025
Reprogrammings	0.129			
Other Navy/OSD Adjustments			-2.851	-0.283
Congressional increases				
Subtotal	-2.989	-2.337	-4.594	-1.308

(U) Schedule:

ATFLIR's OPEVAL was moved back by one quarter.

(U) Technical:

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E1662 F/A-18 Improvements
-------------------------------------------------------------	--------------------------------------------------------------	------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1	3100.315	3208.045	3031.145	2981.882	3118.854	3299.491	3391.084	3339.395	5598.169	31068.380
P-1 Line Item 2 F/A-18E/F/G (FIGHTER) HORNET (MYP)										
APN-5	219.768	391.204	335.894	420.620	397.113	460.751	425.465	438.087	1605.855	4694.757
P-1 Line Item 29 F-18 Series Modification										
Related RDT&E										
(U) P.E. 0207163N Advanced Medium Range Air-to-Air Missile (AMRAAM)										
(U) P.E. 0604215N Standards Development										

(U) 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 that were initially developed for incorporation onto the F/A-18C/D as the lead platform.

The major programs within the F/A-18 Improvements Line are as follows:

- *PIDS. PIDS is a sole source cost plus fixed fee contract on an R&D Basic Ordering Agreement. Will be bought as CFE through the prime contractor.
- *ANAV. ANAV is a sole source cost plus fixed fee contract on an R&D Basic Ordering Agreement. Will be bought as CFE through the prime contractor
- *ATFLIR. The ATFLIR development was a sole source incentive fee contract to Boeing. Boeing competed the development contract. The procurement supplier is sole source to Boeing.
- * 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 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-159), MIDS is being developed by a consortium of international companies.
- * JHMCS. JHMCS is a sole source award fee Joint Air Force contract to Boeing.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E1662 F/A-18 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development PID	SS/CPFF	MDA-ST LOUIS,MO	90.030								90.030	90.030
Primary Hardware Development ATF	SS/CPIF	MDA-ST LOUIS,MO	155.000	8.310	11/02						163.310	163.310
Primary Hardware Development ANAV	SS/CPFF	Northrop-Grumman-LA CA		5.892	02/03	0.148	11/03	0.561	11/04	1.837	8.438	8.438
Primary Hardware Development ACS	SS/CPIF	MDA-ST LOUIS, MO	37.003	10.110	11/02	9.723	11/03	0.179	11/04		57.015	57.015
Primary Hardware Development HOL	SS/CPIF	NAWCWD-CHINA LAKE	117.836	6.290	11/02	1.681	11/03	2.016	11/04		127.823	127.823
Primary Hardware Development JHM	MIPR	WPAFB DAYTON, OHIO	17.582	19.938	02/03	22.727	02/04	11.743	02/05		71.990	
Primary Hardware Development MIS	WX	OTHER FIELD ACTIVITIES	15.391	5.789	11/02	5.341	11/03	8.076	11/04		34.597	
Ancillary Hdw Develop ATFLIR	WX	NAWCAD-LAKEHURST NJ	9.203								9.203	
Subtotal Product Development			442.045	56.329		39.620		22.575		1.837	562.406	
Remarks:												
Development Support MISC	VARIOUS	VARIOUS	33.332	7.785	11/02	4.889	11/03	3.135	11/04	3.854	52.995	
Software Development	WX	NAWCWD-CHINA LAKE	106.244	13.548	11/02	12.984	11/03	11.958	11/04	20.813	165.547	
AWARD FEE ATFLIR (note 1)			1.576								1.576	
Prior Year Costs (Note 2)	Various	Various	2,567.069								2,567.069	
Subtotal Support			2,708.221	21.333		17.873		15.093		24.667	2,787.187	
Remarks: Note 1: FY99 and prior year award fee earned is 74.7% (ATFLIR) Note 2: Prior year costs (FY95 & prior) not broken out into separate categories.												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E1662 F/A-18 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD, PAX RIVER, MD	48.030	9.468	11/02	5.875	11/03	5.721	11/04	17.181	86.275	
Operational Test & Evaluation	WX	OPTEVFOR, NORFOLK, VA	6.721	6.254	11/02	4.365	11/03				17.340	
Subtotal T&E			54.751	15.722		10.240		5.721		17.181	103.615	
Remarks:												
Program Management Sup	VARIOUS	NAVAIR, PAX RIVER, MD	8.750	0.539	11/02	0.415	11/03	0.175	11/04	0.975	10.854	
Travel		NAVAIR, PAX RIVER, MD	3.275	1.156	VAR	0.884	VAR	0.899	VAR	3.595	9.809	
Subtotal Management			12.025	1.695		1.299		1.074		4.570	20.663	
Remarks:												
Total Cost			3,217.042	95.079		69.032		44.463		48.255	3,473.871	
Remarks:												

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 9 of 45)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 Squadrons										PROJECT NUMBER AND NAME E1662 F/A-18 Improvements																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Acquisition Milestones			☆ First Deploy			☆ IOC	▲ MS III	△ FRP									△ FCA																							
EMD Phase																																								
ATFLIR System Development																																								
EDM ATFLIR Delivery																																								
Software 1XXSW Delivery 2XXSW Delivery																																								
Test & Evaluation Milestones				TECHEVAL DT-IID																																				
Development Test	DT-IIC		DT-IIE		DT-III A																																			
Operational Test		OT-IIB						OPEVAL				FOT&E																												
								OT-IIC																																
Production Milestones																																								
KPPU FY 01		▬																																						
FDU FY 01				▬																																				
LRIP I FY 01					▬																																			
LRIP II FY 02													▬																											
FRP FY 03																	▬																							
Deliveries																																								

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0204136N F/A-18 Squadrons				PROJECT NUMBER AND NAME E1662 F/A-18 Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B (MS B)		2Q						
Box Competition		1Q-2Q						
Box Development Contract Award		3Q						
Box Preliminary Design Review (PDR)		4Q						
Box Critical Design Review (CDR)			1Q					
Eng Dev Model (EDM) Radar Delivery - Lab				1Q				
Integration Contract Award		3Q						
System Preliminary Design Review (PDR)			1Q					
System Critical Design Review (CDR)			2Q					
Test Tape Development/Test			2Q-4Q	1Q-4Q				
H-4E SCS Development/Test			2Q-4Q	1Q-4Q	1Q-4Q	2Q-4Q		
Aircraft Modification				1Q-4Q	1Q			
Lab/King Air Flt Test				1Q-4Q				
Developmental Testing (DT-IIA)				1Q-4Q				
Operational Testing (OT-IIA)				4Q				
Start Low-Rate Initial Production I (LRIP I)					1Q			
DT-IIB				4Q	1Q-4Q			
OT-IIB					3Q			
Functional Configuration Audit (FCA)					3Q			
LRIP I Delivery						1Q-4Q		
LRIP II						1Q		
Physical Configuration Audit						1Q		
DT-IIC TECHEVAL					4Q	1Q		
OT-IIC OPEVAL						2Q-4Q		
LRIP II Delivery							1Q-4Q	
Full Rate Production (FRP) Decision							1Q	
IOC							4Q	
FRP Deliveries								1Q and out

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 13 of 45)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 Squadrons										PROJECT NUMBER AND NAME E1662 F/A-18 Improvements														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
ACS Acquisition Milestones									FRP Dec △									IOC ☆																
Prototype Phase																																		
System Development	CDR △																																	
EDM Delivery					DVMC, 8x10, HC, AMC T2 △ 1																													
Software ACS/AESA Test Readiness Review AESA/ACS BRR H3E TRR				△																														
Test & Evaluation Milestones																																		
Development Test					DT-IIA [Bar]																													
Operational Test																																		
Production Milestones																																		
LRIP I FY 03									LRIP Start △																									
FRP FY 06																																		
Deliveries													Lot 26																Lot 27	Lot 28				

R-1 SHOPPING LIST - Item No. 170

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0204136N F/A-18 Squadrons				PROJECT NUMBER AND NAME E1662 F/A-18 Improvements			
Schedule Profile for ACS	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006			
Program Start								
Critical Design Review(CDR)	1Q							
Software Milestones:								
ACS/AESA Test Readiness Review (TRR)	4Q							
H3E Test readiness review (TRR)		4Q						
ACS/AESA Build Readiness Review (BRR)		3Q						
Flight Test Aircraft Modification Period	3Q thru	2Q						
First flight Developmental Testing (DT) for ACS Aircraft		2-3Q						
Operational Testing ACS			1Q thru	2Q				
Techeval				1Q				
OT-IIA				3Q-4Q				
IOC				4Q				
Full Rate Production					1Q			

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										0204136N F/A-18 Squadrons										E1662 F/A-18 Improvements												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HOL Development Milestones	SDR		H2E TRR		H1E OTRR				H2E OTRR																							
Requirements Definition																																
Design		H2E																														
Development		H1E		V&V																												
Test & Evaluation Milestones			H1E DT																													
Development Test																																
Operational Test							H1E OT&E																									
Fleet Release											H1E																					

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 Squadrons										PROJECT NUMBER AND NAME E1662 F/A-18 Improvements																		
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009									
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
JHMCS Acquisition Milestones	1st Deployment				☆	△	MS III				Production Award																											
Prototype Phase																																						
JHMCS Front Seat Development	△	PDR			△	CDR																																
JHMCS Aft Seat Development					ATP				PDR				CDR																									
Software OFP-19C Delivery OFP-H3E Delivery					△	Design/Develop				△	TRR				△	DT				△	Ver/Val				△	FOT&E				△	Delivery							
					△	Design/Develop				△	TRR				△	DT				△	OTRR				△	FOT&E												
Test & Evaluation Milestones					△	OTRR				D/F Aft DT								△	OTRR																			
Development Test					△													△																				
Operational Test	OT-IIB OPEVAL F/A-18 E/F				FOT&E C/D												FOT&E																					
Production Deliveries	LRIP II Start																																					
LRIP II FY 01	△																																					
LRIP III FY 02					△	LRIP III Start																																
FRP FY 03									FRP Start																													
Deliveries	LRIP II (39)				LRIP III (44)				FRP (48)				FRP (42)				FRP (36) Retrofit (48)				FRP (50) Retrofit (60)				FRP (55) Retrofit (72)				FRP (42) Retrofit (72)				Retrofit (72)					

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 18 of 45)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0204136N F/A-18 Squadrons				PROJECT NUMBER AND NAME E1662 F/A-18 Improvements			
Schedule Profile for JHMCS	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone III (MSIII)		1Q						
Preliminary Design Review (PDR) Aft Seat			1Q					
Critical Design Review (CDR) Aft Seat			3Q					
Test Readiness Review (TRR) Aft Seat			1Q, 3Q					
Developmental Testing (DT-IIA) Aft Seat	4Q	1Q-4Q	1Q-4Q	1Q-3Q				
Software Delivery OFP-19C				3Q				
Low-Rate Initial Production (LRIP II)	1Q-2Q							
Operational Testing (OT-IIB) Front Seat	1Q-2Q							
Operational Evaluation (OT-IIC) (OPEVAL) Front Seat		2Q						
LRIP III	4Q							
Full Rate Production Start		3Q						2Q
First Deployment	4Q							
Retrofit				2Q				

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						Date: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E/BA-7	PROGRAM ELEMENT 0204136N F/A-18 Squadrons				PROJECT NUMBER AND NAME E1662 F/A-18 Improvements			
Schedule Profile	FY2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MIDS LVT Development								
MIDS LVT F/A-18 Milestones	2Q-3Q	3Q						
MIDS F/A-18 Production Deliveries	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
F/A-18C/D MIDS Integration								
C/D DT&E	1Q-4Q	3Q						
C/D OT&E		1Q-2Q	1Q-2Q					
F/A-18 E/F MIDS Integration								
E/F DT&E	1Q-4Q	3Q						
E/F OT&E		1Q-2Q	1Q-2Q					
F/A-18 MC SW Development								
17C SCS (MIDS C/D IOCTape)	1Q-4Q	1Q-2Q						
19C SCS	1Q-4Q	1Q-4Q	1Q-2Q					
18E (MIDS E/F IOCTape)	1Q-4Q	1Q-2Q						
H1 SCS (High Order Language-HOL)	1Q-4Q	1Q-3Q						
21C SCS (SIAP Block 0) [C/D]			1Q-4Q	1Q-4Q	1Q-4Q			
H4E SCS (SIAP Block 0) [E/F]			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		

UNCLASSIFIED

R-1 SHOPPING LIST - Item No. 170

EXHIBIT R-2A, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204136N F/A-18 SQUADRONS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
E2065/RADAR UPGRADE	114.294	104.481	110.015	78.578	35.613			

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.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E2065/RADAR UPGRADE		
B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	111.171	92.887	76.199	44.669
RDT&E Articles Quantity				
Continue EMD effort and radar cross-section assessments.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.123	11.444	29.966	24.759
RDT&E Articles Quantity				
Continue software development, DT, and systems integration efforts.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.150	3.850	9.150
RDT&E Articles Quantity				
AESA OT&E.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7		0204136N F/A-18 SQUADRONS				E2065/RADAR UPGRADE					
C. PROGRAM CHANGE SUMMARY:											
Funding:		FY 2002	FY 2003	FY 2004	FY 2005						
Previous President's Budget:		110.235	107.050	74.554	67.529						
Current BES/President's Budget		114.294	104.481	110.015	78.578						
Total Adjustments		4.059	-2.569	35.461	11.049						
Summary of Adjustments											
Congressional program reductions											
Congressional undistributed reductions			-0.634								
Congressional rescissions		0.033									
SBIR/STTR Transfer		-2.566									
Economic Assumptions		-0.311	-1.935	-2.818	-1.684						
Reprogrammings		6.903									
Other Navy/OSD Adjustments				38.279	12.733						
Congressional increases											
Subtotal		4.059	-2.569	35.461	11.049						
Schedule:											
Not Applicable.											
Technical:											
Not Applicable.											
D. OTHER PROGRAM FUNDING SUMMARY:											
<u>Line Item No. & Name</u>		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1											
P-1 Line Item 2 F/A-18E/F/G (FIGHTER) HORNET (MYF	38.082	95.252	104.254	131.702	186.506	248.632	245.800	250.065	338.764	1639.057	
APN-5											
P-1 Line Item 29 F/A-18 Series Modification (OSIP XX-07)						30.118	30.667	31.210	219.441	311.436	

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E2065/RADAR UPGRADE
<p>E. ACQUISITION STRATEGY:</p> <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. Once the program enters production in FY03, the "845" agreement allows 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>		

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E2065/RADAR UPGRADE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development (EM)	SS/CPFF	MDA - St Louis, MO	195.919	92.610	10/02	76.137	10/03	44.628	10/04	21.722	431.016	431.016
Primary Hardware Development (pre)	SS/CPFF	MDA - St Louis, MO	4.900								4.900	4.900
GFE	SS	MDA - St Louis, MO	3.517								3.517	3.517
Subtotal Product Development			204.336	92.610		76.137		44.628		21.722	439.433	
Remarks:												
Software Development	WX	NAWCWD China Lake, CA	4.590	4.438	10/02	14.072	10/03	11.714	10/04		34.814	
Integrated Logistics Support	WX	NADEP North Island, CA	0.321	0.050	10/02						0.371	
Integrated Logistic Support	WX	NAWCAD Lakehurst, NJ	0.647	0.158	10/02						0.805	
Subtotal Support			5.558	4.646		14.072		11.714		0.000	35.990	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E2065/RADAR UPGRADE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD Pax River, MD	5.672	2.567	10/02	1.822	10/03	1.330	10/04		11.391	
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, VA		0.150	10/02	3.850	10/03	9.150	10/04	13.851	27.001	
Developmental Test & Evaluation	WX	NAWCWD China Lake, CA		4.443	10/02	14.074	10/03	11.716	10/04		30.233	
Subtotal T&E			5.672	7.160		19.746		22.196		13.851	68.625	
Remarks:												
Program Management Support	Various	NAVAIR Pax River, MD	1.652								1.652	
Travel	WX	NAVAIR Pax River, MD	0.295	0.065	10/02	0.060	10/03	0.040	10/04	0.040	0.500	
Subtotal Management			1.947	0.065		0.060		0.040		0.040	2.152	
Remarks:												
Total Cost			217.513	104.481		110.015		78.578		35.613	546.200	
Remarks:												

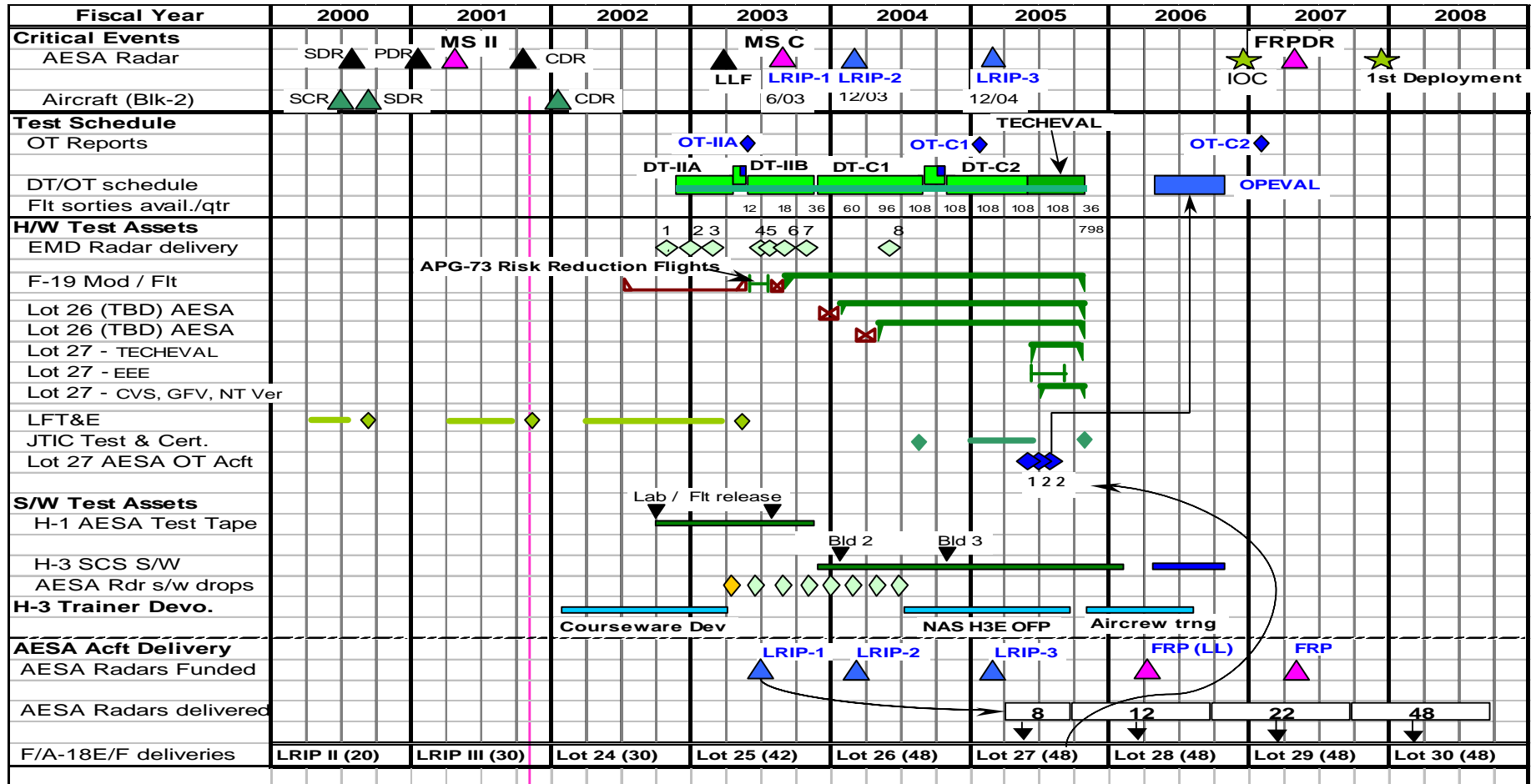
R-1 SHOPPING LIST - Item No. 170

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 SQUADRONS	PROJECT NUMBER AND NAME E2065/RADAR UPGRADE



R-1 SHOPPING LIST - Item No. 170

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&BA-7	PROGRAM ELEMENT 0204136N F/A-18 SQUADRONS				PROJECT NUMBER AND NAME E2065/RADAR UPGRADE			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Critical Design Review (CDR)	1Q							
Developmental Testing (DT-IIA)	4Q	1Q-2Q						
Milestone C (MS C)		3Q						
Operational Testing (OT-IIA)		2Q						
Start Low-Rate Initial Production I (LRIP I)		3Q						
Developmental Testing (DT-IIB1)		2Q-4Q						
Start Low-Rate Initial Production II			1Q					
Low-Rate Initial Production I Delivery				2Q-3Q				
Technical Evaluation (TECHEVAL)				2Q-4Q				
Operational Evaluation (OT-IIC) (OPEVAL)					2Q-4Q			
Low-Rate Initial Production II Delivery				4Q	1Q-3Q			
IOC					4Q			
Full Rate Production (FRP) Decision						2Q		
Full Rate Production Start						2Q		
First Deployment						4Q		

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 29 of 45)

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons			PROJECT NUMBER AND NAME E2130/Follow-on Variant			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	1.148							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The F/A-18 is a twin-engine, mid-wing multi-mission, tactical aircraft employed Navy and Marine Corps strike fighter squadrons. The F/A-18 through selected use of external equipment is designed for flexibility in fighter, attack, fleet air defense, and close air support roles. The F/A-18E/F variant is an upgrade to the night attack "C" and "D" models. The F/A-18E/F will be the second major upgrade since the program's inception. The F/A-18 continues to adapt its strike fighter role to evolving threats into the next century. The F/A-18E/F E&MD program is under a Congressional mandated cost cap of \$4.883B FY90 dollars. Pre-development efforts of \$36.6M (in FY90 base year dollars), previously funded under the F/A-18C/D program, is reflected in the RDT&E total, but is not included in the approved \$4,883B development cap.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E2130/Follow-on Variant
-------------------------------------------------------------	---------------------------------------------------------------	----------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.176			
RDT&E Articles Quantity				

Completed integration and testing of avionics subsystems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.972			
RDT&E Articles Quantity				

Completed Test Program Set (TPS) development.

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

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E2130/Follow-on Variant																																				
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">(U) Funding:</td> <td style="text-align: right;">FY 2002</td> </tr> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">1.136</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">1.148</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.012</td> </tr> <tr> <td colspan="2" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td> Congressional program reductions</td> <td></td> </tr> <tr> <td> Congressional undistributed reductions</td> <td></td> </tr> <tr> <td> Congressional rescissions</td> <td style="text-align: right;">-0.003</td> </tr> <tr> <td> SBIR/STTR Transfer</td> <td style="text-align: right;">-0.034</td> </tr> <tr> <td> Economic Assumptions</td> <td style="text-align: right;">-0.003</td> </tr> <tr> <td> Reprogrammings</td> <td style="text-align: right;">0.052</td> </tr> <tr> <td> Other Navy/OSD Adjustments</td> <td></td> </tr> <tr> <td> Congressional increases</td> <td></td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0.012</td> </tr> <tr> <td colspan="2" style="padding-top: 10px;">(U) Schedule:</td> </tr> <tr> <td> Not Applicable.</td> <td></td> </tr> <tr> <td colspan="2" style="padding-top: 10px;">(U) Technical:</td> </tr> <tr> <td> Not Applicable.</td> <td></td> </tr> </table>			(U) Funding:	FY 2002	Previous President's Budget:	1.136	Current BES/President's Budget	1.148	Total Adjustments	0.012	Summary of Adjustments		Congressional program reductions		Congressional undistributed reductions		Congressional rescissions	-0.003	SBIR/STTR Transfer	-0.034	Economic Assumptions	-0.003	Reprogrammings	0.052	Other Navy/OSD Adjustments		Congressional increases		Subtotal	0.012	(U) Schedule:		Not Applicable.		(U) Technical:		Not Applicable.	
(U) Funding:	FY 2002																																					
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(U) Schedule:																																						
Not Applicable.																																						
(U) Technical:																																						
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R-1 SHOPPING LIST - Item No. 170

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E2130/Follow-on Variant
-------------------------------------------------------------	---------------------------------------------------------------	----------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1	3100.315	3208.045	3031.145	2981.882	3118.854	3299.491	3391.084	3339.395	5598.169	31068.380
P-1 Line Item No. 2 F/A-18E/F/G (FIGHTER) HORNET (MYP)										
APN-5	11.228	47.352	47.049	48.237	19.065	20.852	21.201	21.865	28.861	265.710
P-1 Line Item No. 29 F-18 Series Modification										

(U) E. ACQUISITION STRATEGY:

The July 1992 award of the two RDT&E,N contracts to MDA (airframe) and General Electric (engine), both sole source cost plus incentive fee/award fee, effectively initiated the F/A-18E/F E&MD program. The airframe and engine contracts are incrementally funded through FY00 and FY99, respectively. In March 1997, the F/A-18E/F program received approval to enter the Low Rate Initial Production (LRIP) phase. The airframe and engine contracts for this phase are Cost Plus Incentive Fee (CPIF) for LRIP I and Fixed Price Incentive Fee (FPIF) for LRIP II and LRIP III. LRIP III is a priced option to the LRIP II contract. The LRIP II/III contract possesses a common incentive profit structure which affords contractors maximum opportunity to implement quality, reliability, and producibility improvements. Benefits of the F/A-18E/F LRIP contracts include: 1) a measurable profit incentive across the LRIP period of performance; 2) commercial-like long time relationship

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons			PROJECT NUMBER AND NAME E9267 F414 Engine Durability			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		6.832						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

F414 Engine Durability Improvements will support testing of engine components applicable to a potential F414 Enhanced Durability Engine (EDE). The improved component efficiency of the EDE could be used to increase life or performance of the F414. The expected improvements will result in either a projected 2-3X life improvement and associated projected Total Ownership Cost avoidance of \$1 to 2 Billion over the life of the program, or a 15% thrust increase.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E9267 F414 Engine Durability
-------------------------------------------------------------	---------------------------------------------------------------	---------------------------------------------------------

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Critical Structures Analysis		6.832		
RDT&E Articles Quantity				

Start and complete analysis of F414 Engine.

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

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

R-1 SHOPPING LIST - Item No. 170

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E9267 F414 Engine Durability																																							
<p>C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 60%;">Funding:</th> <th style="text-align: center; width: 15%;">FY 2002</th> <th style="text-align: center; width: 25%;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td></td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget</td> <td></td> <td style="text-align: right;"><u>6.832</u></td> </tr> <tr> <td>Total Adjustments</td> <td></td> <td style="text-align: right;">6.832</td> </tr> <tr> <td colspan="3" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 40px;">Congressional program reductions</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional undistributed reductions</td> <td></td> <td style="text-align: right;">-0.041</td> </tr> <tr> <td style="padding-left: 40px;">Congressional rescissions</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">SBIR/STTR Transfer</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Economic Assumptions</td> <td></td> <td style="text-align: right;">-0.127</td> </tr> <tr> <td style="padding-left: 40px;">Reprogrammings</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional increases</td> <td></td> <td style="text-align: right;"><u>7.000</u></td> </tr> <tr> <td style="padding-left: 40px;">Subtotal</td> <td style="text-align: center;"><u>0.000</u></td> <td style="text-align: right;">6.832</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule: Not applicable.</p> <p style="margin-top: 20px;">Technical: Not applicable.</p>			Funding:	FY 2002	FY 2003	Previous President's Budget:		0.000	Current BES/President's Budget		<u>6.832</u>	Total Adjustments		6.832	Summary of Adjustments			Congressional program reductions			Congressional undistributed reductions		-0.041	Congressional rescissions			SBIR/STTR Transfer			Economic Assumptions		-0.127	Reprogrammings			Congressional increases		<u>7.000</u>	Subtotal	<u>0.000</u>	6.832
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R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons			PROJECT NUMBER AND NAME E9267 F414 Engine Durability				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-5 line item 4										
P-1 Line Item 2 F/A-18E/F/G (FIGHTER) HORNET APN-1 BLI 014500	369.996	345.475	321.226	322.681	325.108	343.255	346.087	349.315	595.149	3318.292
E. ACQUISITION STRATEGY:										
<p>The F414 Engine Durability will employ sole source contract with General Electric, the engine prime manufacture. This analyses will provide expected improvements that will result in either a projected 2-3X life improvement or a 15% thrust increase.</p>										

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons			PROJECT NUMBER AND NAME E9268 Radar Upgrade			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		4.097						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The F/A-18 APG-73 Radar Upgrade (expand4/5) software development effort will enable aircrew to view Synthetic Aperture Radar (SAR) data in the cockpit and will provide real-time reconnaissance ability. The APG-73 Expand 4/5 Upgrade will fully exploit the previous Radar Upgrade (RUG) Phase II investment by completing the required additional software development, integration, testing, and support structure to realize this capability.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E9268 Radar Upgrade
-------------------------------------------------------------	---------------------------------------------------------------	------------------------------------------------

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Critical Structures Analysis		4.097		
RDT&E Articles Quantity				

Radar Upgrade Expand 4/5 software development.

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

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

R-1 SHOPPING LIST - Item No. 170

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E9268 Radar Upgrade																																																			
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R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204136N/ F/A-18 Squadrons	PROJECT NUMBER AND NAME E9268 Radar Upgrade
<p>D. OTHER PROGRAM FUNDING SUMMARY:</p> <p>Not Applicable</p> <p>E. ACQUISITION STRATEGY:</p> <p>Expand 4/5 Upgrade will develop high resolution and very high resolution radar imagery in the cockpit. Funding will be used to complete phase 1, consisting of system concept development, design, interface control definition, and program risk reduction.</p>		

R-1 SHOPPING LIST - Item No. 170

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E9268 Radar Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Software Development	WX	NAWCWD China Lake, CA		2.097	06/03						2.097	
Software Development	WX	NADEP North Island, CA		2.000	06/03						2.000	
Subtotal Support			0.000	4.097		0.000		0.000		0.000	4.097	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204136N F/A-18 SQUADRONS			E9268 Radar Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	4.097		0.000		0.000		0.000	4.097	
Remarks:												

R-1 SHOPPING LIST - Item No. 170

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204136N F/A-18 Squadrons								PROJECT NUMBER AND NAME E9268 Radar Upgrade																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Requirements Definition							△																									
Development																																

R-1 SHOPPING LIST - Item No. 170

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	36.264	18.553	9.083	6.229	2.334	1.762	1.767	1.785
E0463 - (E-2C Improvements)	6.971	7.773	9.083	6.229	2.334	1.762	1.767	1.785
E2321 - (E-2 Radar Modernization)	12.973	10.780						
R3007 - (UHF) Electronically Scannable Antenna)	16.320							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

E-2C Improvements provides pre-planned product improvements for the evolution of E-2C airborne warning system capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification/replacement of selected weapon replaceable assemblies of current installed subsystems. This has resulted in a new capability configuration referred to as Group II aircraft. The program has 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. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOM), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

FY2002-2009: Funding provides for evaluation 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.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0204152N, E-2 SQUADRONS	
<p>The Radar Modernization Program (RMP) is a ground and flight prototype test demonstration and risk mitigation of multiple technologies. It initiates the application of new radar technologies to modernize the primary sensor of the E-2C Weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. Key technologies to be integrated are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, and high dynamic range digital receivers. The resulting detection system will provide a substantially improved overland performance, enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a Single Integrated Air Picture (SIAP). These technologies and resultant equipment demonstrated in ground environment in FY1999 are being flight tested in FY2001 through FY2003. The P.E. is being utilized for RMP pre-system development and demonstration (Pre-SD&D) FY2001 - FY2002 followed by development and demonstration (SD&D) for RMP. This funding is included in P.E. 0604234N, E-2C Radar Modernization Program.</p> <p>FY2002-2003: Funding provides for the integration of RMP advanced development hardware into the NC-130H test bed aircraft and for flight test and data analysis of the advanced development system. Emphasis will be on flying qualities testing, NC-130H processing suite design and fabrication, Integration and Check (IACO) of the processing suite, RMP flight testing and tracking analysis. Additional follow-on modification and flight testing of the NC-130H will be conducted under P.E. 0604234N, RMP, for risk reduction in the core RMP Program.</p> <p>Project Unit R3007 supports the UHF Electronically Scannable Antenna which was realigned from RMP Littoral Surveillance for the E-2C. FY2002 last year of funding for this effort.</p>		

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS			PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	6.971	7.773	9.083	6.229	2.334	1.762	1.767	1.785
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

E-2C Improvements provides pre-planned product improvements for the evolution of E-2C airborne weapon system capabilities in support of naval warfare command and control requirements. It has previously funded developments for the modification/replacement of selected weapon replaceable assemblies of current installed subsystems. This has resulted in a new baseline capability configuration referred to as Group II aircraft. The program has 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. The MCU will permit incorporation of additional functional capabilities to satisfy evolving operational requirements, e.g., Cooperative Engagement Capability (CEC), Satellite Communications (SATCOM), and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense (TAMD) Capability.

Funding provides for evaluation of technologies 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.

R-1 SHOPPING LIST - Item No. 171

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 23)

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.800			
RDT&E Articles Quantity				

Developed electronic order of battle mission planning tool for generating airborne mission data loads for E-2C's electronic support system.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.089	2.500	2.300	
RDT&E Articles Quantity				

Multi-Source Integration (MSI) Phase I
 FY02 - Performed Human Machine Interface (HMI) development to support demonstration of MSI Phase I remote data fusion.
 FY03 - Conduct MSI Test and Evaluation in conjunction with CEC follow-on Test and Evaluation (FOT&E) for E-2C.
 FY04 - Fund MSI Phase I productionization and final test and evaluation for fielding in the E-2C.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.707	1.444		
RDT&E Articles Quantity				

Theater Air and Missile Defense (TAMD) Requirements
 FY02 - Performed analysis of future technologies and conducted requirements generation to support the TAMD mission area.
 FY03 - Conduct avionics system trade study to support new architectures. Support organic sensor/resource management.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.375	2.046	1.100	0.950
RDT&E Articles Quantity				

MSI Phase II
 Developed software applications to facilitate incorporation of new technologies such as MSI in existing E-2C Operational Flight Program (OFP). Performed data collection to support MSI efforts and participated in Fleet Battle Experiment Juliet. 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-2C.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.000	1.200	
RDT&E Articles Quantity				

Integrated Processor Architecture Development
 Perform integrated processor architecture development to support programs computer resources roadmap to improve computer performance and incorporate new technologies.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.783	2.100	0.200
RDT&E Articles Quantity				

Single Integrated Air Picture (SIAP) Block 0
 Fund MSI Development to support SIAP and add correlation/decorrelation to support MSI..

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.383	3.850
RDT&E Articles Quantity				

Fund Airborne Battlefield Command and Control (ABC2). Develop ABC2 Software and Automated Decision Aides.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				1.229
RDT&E Articles Quantity				

Air Operations Decision Support (AODS)
Conduct AODS productionization and final test and evaluation for fielding in the E-2C.

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

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	6.990	7.965	9.321	6.480
Current BES/President's Budget	6.971	7.773	9.083	6.229
Total Adjustments	-0.019	-0.192	-0.238	-0.251
Summary of Adjustments				
Congressional program reductions		-0.047		
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer	-0.015			
Economic Assumptions	-0.019	-0.145	-0.274	-0.168
Reprogrammings	0.015			
Other Navy/OSD Adjustments			0.036	-0.083
Congressional increases				
Subtotal	-0.019	-0.192	-0.238	-0.251

Schedule:

Schedule change from President's budget reflects E-2C program realignment of schedule to gain synergy among other programs in producing a common software update for the fleet.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1/E-2C (LI# 13 & 14)	273.668	287.959	228.506	246.098	254.582	221.169	176.684	732.518	8,276.303	10,697.487
APN-5/E-2C (LI# 38)	55.519	23.638	43.139	13.689	12.647	8.265	8.416	8.568	514.343	688.224
APN-6/E-2C (LI# 55)	43.123	20.97	3.675	1.880	7.716	11.739	0.000	17.073	240.729	346.905

Related RDT&E

- (U) 0603658N (Ship Self Defense, CEC)
- (U) 0604234N (E-2C Radar Modernization Program)

E. ACQUISITION STRATEGY:

Not Applicable.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204152N, E-2 SQUADRON			E0463, E-2C IMPROVEMENTS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev. - MCU	SS/CPIF	NGC, NY/FL	157.460								157.460	157.460
Primary Hardware Dev. - CEC	SS/CPFF	NGC, NY/FL	291.513	4.623	10/02						296.136	296.136
Primary Hardware Dev.	PD	NCW, Arlington, VA	5.765								5.765	
Primary Hardware Mod. - ICR	SS/CPFF	NGC, NY	1.766								1.766	1.766
Primary Hardware - JMPS/TAMPS	WX	PT. Mugu, CA	0.255								0.255	
Primary Hardware - SEI	SS/CPFF	NGC, NY	7.638								7.638	7.638
Primary Hardware - MSI	C/CPFF	Classified				2.300	10/03	1.229	10/04		3.529	3.529
Primary Hardware - IPAD	SS/CPFF	Lockheed Martin				1.000	10/03				1.000	1.000
Primary Hardware - ABC2	SS/CPFF	NGC, NY				2.383	10/03	0.200	10/04		2.583	2.583
Primary Hardware - SIAP	TBD	SPAWAR		0.700	01/03	2.100	10/03	1.933	10/04		4.733	
Primary Hardware - SIAP												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Subtotal Product Development			464.397	5.323		7.783		3.362			480.865	
Remarks:												

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: August 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204152N, E-2 SQUADRONS			E0463, E-2C IMPROVEMENTS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev. Test & Eval. - MCU/Various	WX/RC	NAWCAD, PAX RIVER, MD	88.905	1.457	12/02	0.700	10/03	0.703	10/04	Continuing	Continuing	
Dev. Test & Eval. ACIS (PMS-440)	PD	NAVSEA	2.483								2.483	
Dev. Test & Eval. LEAR Jet - MCU	PD	PMA-207	0.601								0.601	
Dev. Test & Eval. - MCU	WX	PMRF, HAWAII	1.500								1.500	
Dev. Test & Eval. Misc. - MCU	MIPR	VARIOUS	0.666								0.666	
Dev. Test & Eval. - Contract/Improv	MIPR	TBD	0.325								0.325	
Dev. Test & Eval. - EBC	TBD	VARIOUS	2.500								2.500	
Subtotal T&E			96.980	1.457		0.700		0.703		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	WX/RX	NAWCAD, PAX RIVER, MD	0.091	0.413	01/03	0.430	10/03	0.683	10/04		1.617	
Travel	WX/WR	NAWCAD, PAX RIVER, MD	0.166	0.080	12/02	0.020	10/03	0.020	10/04	Continuing	Continuing	
Transportation											0.000	
Subtotal Management			0.257	0.493		0.450		0.703		Continuing	Continuing	
Remarks:												
Total Cost			645.867	7.773		9.083		6.229		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS												PROJECT NUMBER AND NAME E0463, E-2C IMPROVEMENTS												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition/T&E Milestones																																
MSI				Development	S&T Demo			FQT	Deploy																							
AODS									S&T Demo			FQT			Deploy																	
IPAD								Development	S&T Demo			Transition to AHE/HE2K																				
ABC2					FBE K							Development																				
MSI PH II									JCIET 04						JCIET 06																	
SIAP Blk 0																																
Production Milestones																																
LRIP I																																
LRIP II																																
FRP																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 171

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS			PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	12.973	10.780						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Radar Modernization Program (RMP) is a ground and flight prototype test demonstration and risk mitigation of multiple technologies. It initiates the application of new radar technologies to modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. Key technologies to be integrated are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, and high dynamic range digital receivers. The resulting detection system will provide a substantially improved overland performance, enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a Single Integrated Air Picture (SIAP). These technologies and resultant equipment demonstrated in ground environment in FY1999, is being tested in FY2001 through FY2003. The P.E. is being utilized for RMP pre-system development and demonstration (Pre-SD&D) FY2001 . FY2002 followed by development and demonstration (SD&D) for RMP. This funding is included in P.E. 0604234N, E-2C Radar Modernization Program.

FY2002-2003: Funding provides for the integration of RMP advanced development hardware into the NC-130H test bed aircraft and for flight test and data analysis of the advanced development system. Emphasis will be on flying qualities testing, NC-130H processing suite design and fabrication, Integration and Check (IACO) of the processing suite, RMP flight testing and tracking analysis. Additional follow-on modification and flight testing of the NC-130H will be conducted under P.E. 0604234N, RMP, for risk reduction in the core RMP Program.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	12.973	10.780		
RDT&E Articles Quantity				

Flight Test and Data Analysis
 Completed subsystem flying qualities tests. Initiated data analysis and final report. Completed design and parts fabrication for NC-130H processing suite. Funded NC-130H integration and check out (IACO) flights of Littoral Configuration Processing suite. Complete E-2C RMP NC-130H IACO of Processing Suite, conduct E-2C RMP Processing Subsystem Test, and perform Tracking Analysis/Generate Final Report for efforts for E-2C RMP.

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

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

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		13.411	11.046	0.000	0.000
Current BES/President's Budget		12.973	10.780	0.000	0.000
Total Adjustments		-0.438	-0.266	0.000	0.000
Summary of Adjustments					
Congressional program reductions			-0.064		
Congressional undistributed reductions					
Congressional rescissions		-0.029			
SBIR/STTR Transfer		-0.402			
Economic Assumptions		-0.036	-0.202		
Reprogrammings		0.029			
Other Navy/OSD Adjustments					
Congressional increases					
Subtotal		-0.438	-0.266	0.000	0.000
Schedule:					
Schedule changed from President's budget reflects flight test period extended due to maintenance downtime and weather conditions. IACO was completed in 4Q/02.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS	PROJECT NUMBER AND NAME E2321, RADAR MODERNIZATION PROGRAM
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1/E-2C (LI# 13 & 14)	273.668	287.959	228.506	246.098	254.582	221.169	176.684	732.518	8,276.303	10,697.487
APN-5/E-2C (LI# 38)	55.519	23.638	43.139	13.689	12.647	8.265	8.416	8.568	514.343	688.224
APN-6/E-2C (LI# 55)	43.123	20.97	3.675	1.880	7.716	11.739	0.000	17.073	240.729	346.905

Related RDT&E

(U) 0604234N (E-2C Radar Modernization Program)

E. ACQUISITION STRATEGY:

The program is a Non-Acquisition Program governed by a Non-Acquisition Program Definition Document (NAPDD) #501-880C2 dated 16 May 1997 in accordance with SECNAVINST 5000.2B.

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204152N, E-2 SQUADRONS			E2321, RADAR MODERNIZATION PROGRAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX/WR	NAWCAD, PAX RIVER, MD	5.629	0.594	01/03						6.223	
Developmental Test & Evaluation	C/CPFF	Classified	1.635	0.360	01/03						1.995	1.995
Operational Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			7.264	0.954		0.000		0.000		0.000	8.218	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	C/CPFF	Classified	0.165	0.060	01/03						0.225	0.225
Travel	WX/WR	NAWCAD, PAX RIVER, MD	0.105	0.020	01/03						0.125	
Transportation												
Subtotal Management			0.270	0.080							0.350	
Remarks:												
Total Cost			104.796	10.780							115.576	
Remarks:												

R-1 SHOPPING LIST - Item No. 171

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 20 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204152N, E-2 SQUADRONS			PROJECT NUMBER AND NAME R3007, UHF ELECTRONICALLY SCANNABLE ANTENNA			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	16.320							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

UHF Electronically Scannable Antenna: Develop, demonstrate, and analyze UESA radar testbed concept on the Mountaintop on Kauai. FY01 effort includes integrating UESA Antenna developed by Randtron, SiC Transmitter developed by Northrop Grumman, ESSS, Direct Digital Synthesis Exciter by EWA, Console and External Communications by Solipsys, and T/R Switch by University of Hawaii and Research Corporation of University of Hawaii, Phaseshifter by Trex Industries. NGC ESSS is the system integrator for the MT Testbed. This effort initially will demonstrate a non-real time surveillance radar operation, and a real time system by Jan 04.

FY02 effort integrated an IFF system as well as advanced digital receivers and supercombiner circuits. Comprehensive real time demonstration is planned for integrated Surveillance and IFF capability by March of FY04. Extensive work will be done with PMRF for the use of their range, and targets to conduct the full UESA RTB capability demonstration to assess UESA's ability to meet the Littoral Surveillance needs.

R-1 SHOPPING LIST - Item No. 171

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 23 of 23)

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET COMMUNICATIONS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	106.568	22.544	12.216	16.484	20.996	21.277	18.411	15.765	16.049	Continuing	Continuing
X0725 Communications Automation	11.498	8.428	4.646	3.271	2.935	3.011	3.637	3.703	3.772	Continuing	Continuing
X1083 Shore to Ship Communications	91.328	8.551	6.539	12.386	17.334	17.185	13.428	10.691	10.880	Continuing	Continuing
X0795 Support of MEECN	3.742	2.232	1.031	0.827	0.727	1.081	1.346	1.371	1.397	Continuing	Continuing
X9100 Programmable Integrated Communications Terminals	0.000	3.333	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.333
Quantity of RDT&E Articles											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</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)), Digital Wideband Transition System (DWTS) Low-Data Rate (EPLRS), Joint Network Management System (JNMS), Automated Digital Network System (ADNS), and Naval Global Directory Services.</p> <p>In FY 04 the Program of record Name changes to Tactical Messaging in order to better depict the latest technology capabilities being developed. As in previous years Tactical Messaging (formerly NAVMACS/SMSII) develops joint/combined individual and organizational message handling to US 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 interface to Defense Messaging System (DMS) and legacy ashore messaging systems.</p> <p>DWTS Low-Data Rate (EPLRS) Navy requires a digital wideband capability, which can be used in amphibious operations where a fixed DWTS station cannot be used. System must be interoperable with Army and Marine Corps EPLRS system. DWTS Block Upgrade BRAVO improves the fixed DWTS station to operate at higher bandwidths with greater reliability than the current system.</p> <p>The Joint Network Management System (JNMS) is a CINC, Commander, Joint Forces (CJF) joint communications planning system with 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.</p>											

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET COMMUNICATIONS	
<p>ADNS provides automated routing and switching of Tactical and Strategic C4I data via Transmission Control Protocol (TCP/IP) networks linking deployed Battle Group units with each other and with the DISN ashore via multiple Radio Frequency (RF) paths. Consists of Commercial Off-The-Shelf (COTS) non-developmental Joint Tactical Architecture (JTA) compliant hardware (routers, processors, switches) and commercial Y2K compliant software (VxWorks toolkit) in a standardized, scalable shock qualified rack design. Provides Internet Protocol (IP) connectivity afloat and ashore. Merges multiple redundant stove pipe communications circuits and efficiently manages RF assets resulting in better throughput using existing RF media. Line includes Network Operation Centers (NOCs) Ashore.</p> <p>Naval Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations to include, but not limited to, Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; Public Key Infrastructure (PKI)-enablement of applications/devices; and Network Management. The Naval Global Directory Services will leverage the Afloat deployed White Pages to construct individual ship Afloat Full Service Directories which will create a foundation for further development, over time, to create a ship-to-shore and ship-to-ship Naval Global Directory Services.</p> <p>The Shore to Ship Communications System develops communications systems elements which provide positive command and control of deployed ballistic missile submarines (SSBNs). Provides the communication elements for continuous assessment of the command and control link between Secretary of Defense and the ballistic missile platforms. Provides the tools for strategic command and control planning to deployed SSBNs.</p> <p>Minimum Essential Emergency Communications Network (MEECN) is the Tri-Service transmission system, including land-based segment, which ensures delivery of Emergency Action Messages (EAM) to our strategic platforms.</p> <p>The Programmable Integrated Communications Terminal (PICT) is a user voice terminal designed to operate with Integrated Service Digital Network (ISDN) switches and legacy switches to support both interior and radio (external) shipboard communications. The Digital Modular Radio (DMR) system will be integrated into shipboard communications systems that require remote control capability to the radio for various end user applications. These integrated communications systems will include both internal phone and internal communications such as the Integrated Voice Network (IVN) as well as external radio communications. This is a Congressional Add in FY02 .</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>		

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME X0725 Communications Automation					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	11.498	8.428	4.646	3.271	2.935	3.011	3.637	3.703	3.772	Continuing	Continuing
RDT&E Articles Qty											0

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

This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. Tactical Messaging, 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 IT-21 Local Area Network (LAN)/Wide Area Network (WAN). DWTS Low-Data Rate (EPLRS), Navy requires a digital wideband capability which can be used in amphibious operations where a fixed DWTS station cannot be used. System must be interoperable with Army and Marine Corps EPLRS system. Existing DWTS configuration requires improvement in order to provide more reliable performance at the highest bandwidths. DWTS and EPLRS require further development in order to meet objective range requirements; these efforts are combined under the Seabridge initiative. 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 automated routing and switching of Tactical and Strategic C4I data via Transmission Control Protocol (TCP/IP) networks linking deployed Battle Group units with each other and with the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) paths. Consists of Commercial Off-The-Shelf (COTS) non-developmental Joint Tactical Architecture (JTA) compliant hardware (routers, processors, switches) and commercial Y2K compliant software (VxWorks toolkit) in a standardized, scalable shock qualified rack design. Provides Internet Protocol (IP) connectivity afloat and ashore. Merges multiple redundant stove pipe communications circuits and efficiently manages RF assets resulting in better throughput using existing RF medial. Line includes Network Operation Centers (NOCs) Ashore. Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations to include, but not limited to, Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; PKI-enablement of applications/devices; and Network Management. The Global Directory Services will leverage the Afloat deployed White Pages to construct individual ship Afloat Full Service Directories which will create a foundation for further development, over time, to create a ship-to-shore and ship-to-ship Global Directory Services.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X0725 Communications Automation
------------------------------------------------------------	----------------------------------------------------------------------------------	------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
DWTS (EPLRS)	1.978			
RDT&E Articles Quantity				

FY02: Concluded EMD Phase including ILS development and DT/OT-II BLOCK B (EPLRS).

	FY 02	FY 03	FY 04	FY 05
ADNS	2.816	0.982	0.383	0.432
RDT&E Articles Quantity				

FY02: Began research and development to support major technology refresh to include integration of ADNS and ISNS software and hardware. Began development for Integrated Voice, Video and Data within the shipboard ADNS environment. Began development to support the time division multiplexing transition. Development required for additional routers and RF interfaces as they became available to ensure continued inter-operability and scalability. Investigated, developed and tested ADNS technology upgrades to incorporate into existing architecture until integrated system is available. The ADNS program must prepare for efficient insertion of replacement technology being driven by an eighteen month technology change cycle. Investigated, developed and tested Network Management to merge with existing ADNS development solutions.

FY03: Continue development and integration to support future technology refresh interfaces. Continue integration and implementation to Genser ADNS capabilities.

FY04: Develop basic methods to implement prioritization of data using message traffic precedence, dynamic bandwidth management, passive reception of comms under Emission Control (EMCON) condition, improved UHF channel access processor, implementation of basic LOS networking architectures, and devising solutions for Allied Interoperability.

FY05: Develop advanced methods to accomplish Traffic Management Data Prioritization Schemes to include the integration of voice, video, and data. Implementing dynamic bandwidth management across multiple RF paths, provide advanced LOS networking integration.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Tactical Messaging (NAVMACS)	1.793	1.968	1.334	1.231
RDT&E Articles Quantity				

FY02: Completed test and evaluation of emerging technologies including SSS Multi-Cast Applications and Lightweight Directory Access Protocol (LDAP) services. Completed SCI and Top Secret IP messaging automation engineering and testing. Initiated research into multilevel security messaging.

FY03: Complete HW/SW test and integration for SMS ph2. Complete development and test efforts for multi-enclave messaging administration terminals. Continue test and evaluation of emerging technology and product upgrades such as DMS 4.0, DMDS, IP broadcast, Task Force Web , and GOTS Delta products. Continue architecture planning for Afloat SCI messaging. Participate in Joint Tactical DMS OT.

FY04: Continue development and test efforts for emerging technology and product upgrades such and DMS, profilers, IP broadcast, Web based solutions, and COTS SW/HW refresh for all enclaves and USN platforms.

FY05: Continue development and test efforts for emerging technology and product upgrades such as DMS, profilers, IP broadcast, Web based solutions, and COTS SW/HW refresh for all enclaves and USN platforms.

	FY 02	FY 03	FY 04	FY 05
Global Directory Services	1.411	1.696	1.196	1.272
RDT&E Articles Quantity				

FY02: Provided initial engineering design efforts for a directory service architecture in the Ashore and Afloat support communities which support major programs (GCCS-M, NTCSS, etc) and general network environments. Provided development for enhancement to the directory service product. Modified ship data feed to Navy/Marine Corps White Pages and expanded Common Access Card (PKI SmartCard) capability and integratd with Single Sign-On functionality. Developed Directory Services menus and applications including Navy/Marine Corps Yellow and Blue Pages.

FY03: Provide continuing design and development efforts that will build an enterprise-wide directory service environment by bridging efforts developed in FY02. Specifically providing for the development of a global meta-directory service to integrate disparate directory services used throughout the Naval community. Efforts also include developing a directory service architecture to support the development of Universal E-mail and providing developmental engineering support for the new functionality that would interact with the Navy/Marine Corps white Pages and related directory service environments.

FY04: Continue the development of the Naval Global Directory Service (NGDS) -- enterprise-wide directory service environment . Assist in the convergence of NMCI, IT21, and OCONUS environments. Provide an infrastructure for the development and integration of new Navy Portal functionality. Develop an architecture that would provide the ability to integrate with the Global Mail Routing Service (GMRS). Provide developmental engineering support for new network functionality within the shipboard environment.

FY05: Continue the development of the Naval Global Directory Service (NGDS) -- enterprise-wide directory service environment. Assist in the continuing integration of critical NMCI, IT21, and OCONUS components. Develop an architecture that would provide the ability to establish Universal Accounts. Provide developmental engineering support for ship-to-shore communications and data sharing.

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X0725 Communications Automation
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
JNMS	0.430	0.000	0.358	0.000
RDT&E Articles Quantity				

FY02: Supported testing of JNMS for Integrated Shipboard and Network Systems (ISNS), ADNS, and lab activities for security accreditation of the system.
FY04: Continued to support testing of JNMS for Integrated Shipboard and Network Systems (ISNS), ADNS, and lab activities for security accreditation of the system.

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X0725 Communications Automation			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		9.678	4.793		
Current BES/President's Budget		8.428	4.646	3.271	2.935
Total Adjustments		-1.250	-0.147	0.000	0.000
Summary of Adjustments					
Realignment for EKMS Tier 1		-0.500			
Sec 8123 Mgmt Reform Initiative		-0.081			
FFRDC		-0.002			
SBIR		-0.088			
Miscellaneous Department Adjustments		-0.535	-0.060		
SEC 313, Rev Econ Assumptions		-0.020			
SEC 8135 Econ Assumptions		-0.024			
SEC 8100 Business Process Reform			-0.019		
SEC 8135 Econ Assumptions			-0.027		
SEC 8109 IT Cost Growth			-0.009		
FFRDC reduction			-0.032		
Subtotal		-1.250	-0.147	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X0725 Communications Automation
-------------------------------------------------------------	----------------------------------------------------------------------------------	------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3050 – Comm Auto - NAVMACS	14.032	11.354	7.292	10.678	11.943	1.076	2.780	3.064	Continuing	Continuing
3050 – Comm Auto – JNMS	0.613	0.000	5.721	1.429	1.715	1.974	2.170	2.217	Continuing	Continuing
3050 – Comm Auto – ADNS	27.938	30.250	15.731	2.819	14.285	7.716	15.179	15.627	Continuing	Continuing
3010 – Ship TAC Comms- DWTS	3.226	3.620	6.632	1.938	0.000	0.000	0.000	0.000		15.4155

(U) E. ACQUISITION STRATEGY: *

ADNS: Evolutionary acquisition approach with overlapping development and implementation phases for differing incremental baselines. Use existing competitively awarded contracts during the initial production phase with plans to introduce 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. Employ many types of advantageous contract vehicles which provide flexibility, decreased contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

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. The technical solutions and areas of acquisition reform will continue to emphasize procurement of best-of-breed Commercial Off The Shelf (COTS) items that provide spin-off savings in installation, spare parts support, integration, test and evaluation, and training and maintenance.

Acquisition, management and contracting strategies are to support:

- JNMS, that provides an automated software system including capabilities for planning and engineering, monitoring, control and reconfigurations, spectrum management and security
- GDS, to support a variety of network operations that include Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; PKI-enablement of applications/devices; and Network Management. ALL management oversight by SPAWAR.

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204163N Shore to Ship Communications Systems			X0725 Communications Automation						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PO	SSC	2.982	0.410	Dec 2002	0.490	Dec 2003	0.165	Dec 2004		Continuing	
Operational Test & Evaluation	MIPR	OPTEVFOR	0.315								0.315	
Operational Test & Evaluation	Var	Various	0.350								0.350	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			3.647	0.410		0.490		0.165		0.000	Continuing	
Remarks:												
Contractor Engineering Support	MPIR	US Army, Monmouth, NJ		0.123	Dec 2002	0.123	Dec 2003	0.123	Dec 2004		0.369	
Government Engineering Support											0.000	
Program Management Support	PO	SSC	1.317	0.249	Dec 2002	0.141	Dec 2003	0.145	Dec 2004		Continuing	
Program Management Support	CPAF	BAH	0.599	0.387	Dec 2002	0.285	Dec 2003	0.285	Dec 2004		Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.916	0.759		0.549		0.553		0.000	Continuing	
Remarks:												
Total Cost			19.926	4.646		3.271		2.935		0.000	30.778	
Remarks:												

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME X0725 Communications Automation/DWTS			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC) EPLRS	4Q							
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL) DWTS Block B	4Q							
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 13 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems								PROJECT NUMBER AND NAME X0725 Communications Automation/ADNS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones							MR IOC	☆											PBR IOC	☆												
Prototype Phase	(MR)								(PBR)																							
System Development			▲ MR SDR				▲ MR CDR				▲ PBR SDR				▲ PBR CDR																	
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
Test & Evaluation Milestones							▲ MR DT								▲ PBR DT																	
Development Test							▲ MR OT								▲ PBR OT																	
Operational Test																																
Production Milestones																																
LRIP I FY 05																																
LRIP II FY 06																																
FRP FY 07																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 14 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems								PROJECT NUMBER AND NAME X0725 Communications Automation/ADNS																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																																				
Prototype Phase																																				
System Development																																				
EDM Radar Delivery																																				
Software 1XXSW Delivery 2XXSW Delivery																																				
Test & Evaluation Milestones																																				
Development Test																																				
Operational Test																																				
Production Milestones																																				
LRIP I FY 05																																				
LRIP II FY 06																																				
FRP FY 07																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RD&E, N / BA-7	PE: 0204163N Shore to Ship Communications Systems				X0725 Communications Automation/ADNS			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MAGTF Router (MR) R-4 #1								
Prototype Phase	1-2Q							
System Design Review (SDR)	3Q							
Preliminary Design Review (PDR)	1-4Q							
System Development		1-4Q						
Critical Design Review (CDR)		3Q						
Operational Testing (OT)		1Q						
Developmental Testing (DT)		1Q						
IOC		4Q						
Policy Based Routing (PBR) R-4 #1								
Prototype Phase			1-2Q					
System Design Review (SDR)			3Q					
Preliminary Design Review (PDR)			1-4Q					
System Development				1-4Q				
Critical Design Review (CDR)				3Q				
Operational Testing (OT)				1Q				
Developmental Testing (DT)				1Q				
IOC				4Q				
Traffic Management/QOS (TM/QOS) R-4 #2								
Prototype Phase				1-2Q				
System Design Review (SDR)				3Q				
Preliminary Design Review (PDR)				1-4Q				
System Development					1-4Q			
Critical Design Review (CDR)					3Q			
Operational Testing (OT)					1Q			
Developmental Testing (DT)					1Q			
IOC					4Q			
Voice Over IP (VOIP) R-4 #3								
Prototype Phase					1-2Q			
System Design Review (SDR)					3Q			
Preliminary Design Review (PDR)					1-4Q			
System Development						1-4Q		
Critical Design Review (CDR)						3Q		
Operational Testing (OT)						1Q		
Developmental Testing (DT)						1Q		
IOC						4Q		
Interim Advanced QOS (IA/QOS) R-4 #2								
Prototype Phase						1-2Q		
System Design Review (SDR)						3Q		
Preliminary Design Review (PDR)						1-4Q		
System Development							1-4Q	
Critical Design Review (CDR)							3Q	
Operational Testing (OT)							1Q	
Developmental Testing (DT)							1Q	
IOC							4Q	
Advanced QOS (AQOS) R-4 #3								
Prototype Phase							1-2Q	
System Design Review (SDR)							3Q	
Preliminary Design Review (PDR)							1-4Q	
System Development								1-4Q
Critical Design Review (CDR)								3Q
Operational Testing (OT)								1Q
Developmental Testing (DT)								1Q
IOC								4Q

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 17 of 47)

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																		
RDT&E, N / BA-7					0204163N Fleet Communications										X0725 Communications Automation/Tactical Messaging																		
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones							△				△	△				△				△									△				
Prototype Phase			PC/FEP PROTOTYPE						IP PROTOTYPE								CENTRIC MESSAGING PROTOTYPE																
Development	BUILD 2.3/DMS INTEG				IPB BCST				DMS AFLOAT				MESSAGING BLOCK UPGRADE/TECHNOLOGY INSERTION				ADVANCED MESSAGING				TECHNOLOGY												
EDM Delivery		▲		△							△	△		△				△		△		△				△		△					
Software S/W Delivery		▲									△																						
Test & Evaluation Milestones																																	
Development Test																																	
Operational Test																																	
JITC IV&V Certification																																	
Production Milestones																																	
FRP FY 95			PRODUCTION DEV.						PRODUCTION DEV.				PRODUCTION DEV.				PRODUCTION DEV.				PRODUCTION DEV.												
Deliveries		20				23					11				28				31				2				2				3		

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME X0725 Communications Automation/Tactical Messaging			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
IATO		2Q-3Q							
IOC			2Q-3-Q						
Milestone III B			4Q						
FRP				4Q					
Milestone III C					4Q				
Milestone III D							4Q		
PCI/FEP Prototype	3Q-4Q	1Q-3Q							
IP Prototype			1Q-4Q	1Q					
Centric Messaging Prototype					4Q	1Q-4Q	1Q-2Q		
Build 2.3/DMS Integration	1Q-4Q	1Q							
DMS Afloat		1Q-4Q	1Q-4Q						
IP Broadcast		2Q-4Q							
Messaging Block Upgrade/Tech Insertion			4Q	1Q-4Q	1Q-4Q	1Q-2Q			
Advanced Messaging						3Q-4Q	1Q-3Q		
SCI Capability							2Q-4Q	1Q	
Technology							4Q	1Q-4Q	
CDR	2Q			2Q		4Q			
SDR			1Q-2Q		3Q				
PDR			3Q-4Q			2Q			
EMD - Lab	2Q-3Q		4Q			4Q	1Q		
EMD - JITC	4Q			1Q-2Q			2Q		
S/W Delivery 2.3		2Q-4Q	1Q-3Q						
S/W Delivery 2.4			3Q-4Q	1Q-3Q					
S/W Delivery 3.0					3Q-4Q	1Q-3Q			
IPR	2Q		2Q-3Q	4Q					
Development Test			1Q-2Q	4Q	1Q-2Q	3Q-4Q	1Q		
Operational Test			2Q-3Q		2Q-4Q		1Q-3Q		
JITC IV&V Certification	1Q-4Q	1Q, 3Q-4Q	1Q-2Q	1Q-4Q	2Q-4Q	1Q	1Q-4Q	1Q-4Q	
Deliveries	20	23	11	28	31	2	2	3	

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 19 of 47)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	91.328	8.551	6.539	12.386	17.334	17.185	13.428	10.691	10.880	Continuing	Continuing
RDT&E Articles Qty											0

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

This project develops communications systems elements that provide positive command and control of deployed ballistic missile submarines (SSBNs) and fleet submarine broadcast connectivity to SSNs and SSBNs. This project provides enhancements to the shore-to-ship transmitting systems and the Submarine Low Frequency (LF)/Very Low Frequency (VLF) Versa Module Eurocard (VME) Receiver (SLVR) System. This project also provides submarine unique capabilities to the Network Operation Center (NOC) and Broadcast Command Authority (BCA). The NOC and the BCA provide the oversight and control for all fixed submarine broadcasts. Evaluation of this communications system 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 (SUBOPAUTH) includes both Submarine Communications and Operational Control (OPCON) at shore sites. A SUBOPAUTH architecture provides for back-up capability among the four BCA/OPCONs to ensure Continuity of Operations (COOP) in the event of a BCA outage. Submarine Communications Support System (SCSS) accomplishes the integration of component systems into single radio room configuration. Phase I integration and land-based test of SCSS was completed, at sea testing will be completed in FY03 (schedule change due to September 11) and the follow on phase II efforts have been renamed Common Submarine Radio Room (CSRR). In support of the CSRR, multifunctional crypto system (MCS) is being developed. This project contributes to the development and certification of the MCS. Technologies to improve high voltage insulators, bushings, composite bushings and antenna components used in the Fixed VLF (FVLF) transmit systems are evaluated and tested through the High Voltage Improvement Program (HVIP). EAM 2010 will provide a communications path in support of the Joint Operational Architecture (JOA) for time-critical EAMs to be disseminated across AOR's in support of Joint operations. This project implements the Joint Staff EAM Board of Directors (BoD) direction to "ensure an acquisition strategy exists for a viable long-term EAM dissemination solution (EAM 2010) prior to recommending AUTODIN/DTH closure in FY03." A VLF Shore Transmit Terminal will be developed for 6 Broadcast Transmit Sites (BTS). Development of the terminal will use technology and designs common to an airborne terminal developed for the E-6B Airborne Command Post (ABNCP).

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications	PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems
------------------------------------------------------------	------------------------------------------------------------------	-----------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
High Voltage Improvement Program	0.368	0.547	0.351	0.431
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Completed high voltage on-site testing and evaluation of composite bushings with focus on development of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites.

FY03: Complete development of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites. Initiate development of electrically small antennas for VLF/LF transmit applications.

FY04: Complete testing of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites. Complete development of electrically small antennas for VLF/LF transmits applications.

FY05: Complete development of remote corona monitoring/sensing system capability for FVLF sites.

	FY 02	FY 03	FY 04	FY 05
Common Submarine Radio Room (CSRR)	1.090	0.925	1.012	1.117
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Planned SCSS Phase I at –sea testing (platform schedule changes due to Sept 11 prevented completion of at-sea testing) and started engineering, integration and test for CSRR architecture and component upgrades and continue development of MCS.

FY03: Continue engineering, integration and test for CSRR architecture and component upgrades and complete development and testing of MCS.

FY04: Complete engineering, integration, test and land-based certification of SSBN variant of CSRR. Tailor engineering and integration for SSN688 variant of CSRR.

FY05: Conduct at-sea OPEVAL of SSBN CSRR variant. Continue engineering, integration, and test of SSN688 CSRR variant.

	FY 02	FY 03	FY 04	FY 05
SLVR	2.495	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Completed development of ELF integration into SLVR and commenced system level testing to meet FY03 Virginia Class requirement.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications	PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems
------------------------------------------------------------	------------------------------------------------------------------	-----------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
SCAP/CEP	3.531	3.882	4.263	4.319
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Continued SCAP, conducted CEP and strategic connectivity threats, and performed analysis.
FY03-FY05: Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis.

	FY 02	FY 03	FY 04	FY 05
Shore Internet Protocol	0.670	0.700	0.000	0.000
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Conducted research and development necessary for integration of shore based submarine unique capabilities at the Network Operation Center (NOC) and Broadcast Control Authority (BCA).
FY03: Complete research and development necessary for development of shore based submarine unique capabilities at the NOC and BCA.

	FY 02	FY 03	FY 04	FY 05
Concept Development/Systems Planning	0.397	0.485	0.954	1.697
RDT&E Articles Quantity				

FY02 ACCOMPLISHMENTS: Investigated technology and initiated design concepts for integrated FVLF dynamic control system.
FY03: Continue design concept and initial feasible studies for integrated FVLF dynamic control system.
FY04: Begin development of methods to provide the operational flexibility of dynamic bandwidth control of the Fixed Submarine Broadcast System (FSBS).
FY05: Continue development of dynamic bandwidth control capability.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications	PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
SUBOPAETH	0.000	0.000	1.246	2.251
RDT&E Articles Quantity				

FY04: Develop architecture to ensure automated SUBOPAETH back-up strategy to support Continuity of Operations (COOP).
FY05: Develop automated toolsets to facilitate ease in manning burden to support operational and broadcast control for submarines.

	FY 02	FY 03	FY 04	FY 05
EAM 2010	0.000	0.000	4.560	4.703
RDT&E Articles Quantity				

FY04: Conduct a System Requirements Analysis, develop an Operational Requirements Document ORD for EAM 2010 and begin the Analysis of Alternatives.
FY05: Develop computer modeling and simulations, complete the EAM 2010 Analysis of Alternatives and initiate the acquisition program process.

	FY 02	FY 03	FY 04	FY 05
VLF Transmit Terminal	0.000	0.000	0.000	1.324
RDT&E Articles Quantity				

FY05: Shore site integration of a common VLF transmit terminal developed for the E-6B Airborne Command Post (ABNCP).

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications	PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
VLF Receive Modes	0.000	0.000	0.000	1.492
RDT&E Articles Quantity				

FY05: Develop architecture to support implementation of a unified mode in the common VLF Transmit Terminal.

	FY 02	FY 03	FY 04	FY 05
	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications	PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		9.097	6.716		
Current BES/President's Budget		8.551	6.539	12.386	17.334
Total Adjustments		-0.546	-0.177	0.000	0.000
Summary of Adjustments					
BTR for Joint Mission Planning System Combat One		-0.179			
Sec 8100, Business Process Reform			-0.027		
FFRDC Reduction		-0.004	-0.015		
Section 8123: Management Reform Initiative		-0.080			
SBIR		-0.058			
Sec 313, PL 107-206, Revised Economic Assumptions		-0.019			
Sec 8109, IT Cost Growth			-0.012		
Miscellaneous Department Adjustments		-0.182	-0.085		
Sec 8135, Economic Assumptions		-0.024	-0.038		
Subtotal		-0.546	-0.177	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3107 Submarine Broadcast Support	16.890	5.314	16.591	18.021	13.406	13.510	18.690	18.875	Continuing	Continuing
(U) E. ACQUISITION STRATEGY:										
<p>CSRR will integrate CNO N6 communication programs into the submarine radio rooms. The program has been designated an ACAT III due to the radio room system level Operational Test requirement and the amount of funding required to execute the program. Each class variant (SSBN, SSN) will require design integration and operational testing. The milestone decision authority is SPAWAR PD-17. The CSRR program is proceeding to a Milestone C decision in 3rd Quarter FY03. 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. VLF Transmit Terminal shall adapt a single channel airborne system to a multiple channel shore environment. The adaptation 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. EAM 2010 will use COTS and NDI to replace aging EAM distribution components. The program plans MS-A in 1ST QTR FY05. Procurement contract award will be based on full and open competition. SUBOPAETH is a phased acquisition using COTS and NDI. Procurement contract award will be based on full and open competition.</p>										

R-1 SHOPPING LIST - Item No. 172

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204163N Fleet Communications			X1083 Shore to Ship Communications Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	3.900	0.750	12/02	2.000	12/03	4.338	11/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	20.752	0.346	12/02	0.498	12/03	1.060	12/04	Continuing	Continuing	
Systems Engineering	WR	SSC San Diego, CA	33.458	0.435	N/A	0.315	N/A	3.077	N/A	Continuing	Continuing	
Systems Engineering	WR	Misc. Labs, NUWC, RI	8.051	0.225	11/02	0.900	11/03	0.824	11/04	Continuing	Continuing	
Systems Engineering	WR	US Army, Monmouth, NJ	4.210	0.000	N/A	0.250	11/03	0.650	11/04	Continuing	Continuing	
Systems Engineering	Various	Various	0.290								0.290	
Systems Engineering	CPFF	Rockwell, Richardson, TX	15.864	0.000	N/A	0.000	N/A	0.000	N/A		15.864	
Systems Engineering											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			86.525	1.756		3.963		9.949		0.000	102.193	
Remarks:												
Development Support											0.000	
Software Development	WR	SSC San Diego, CA	3.000	1.767	11/02	1.603	11/03	2.300	11/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	Various	Various				2.600					2.600	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			3.000	1.767		4.203		2.300		0.000	11.270	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204163N Fleet Communications			X1083 Shore to Ship Communications Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Strategic OP Systems Perf Evaluation	CPFF	APL/JHU, Baltimore, MD	4.100	2.100	12/02	2.400	12/03	2.900	12/04	Continuing	Continuing	
Systems Testing	Various	Various	2.445	0.682	11/02	1.064	11/03	1.117	11/04	Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			6.545	2.782		3.464		4.017		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	3.829	0.234	11/02	0.756	11/03	1.068	11/04		5.887	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.829	0.234		0.756		1.068		0.000	5.887	
Remarks:												
Total Cost			99.899	6.539		12.386		17.334		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications								PROJECT NUMBER AND NAME X1083 Shore to Ship Communications Systems - CSRR																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones							MS-C △																									
Test & Evaluation Milestones																																
Production Milestones																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 172

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

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EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RDT&E, N / BA-7								0204163N Fleet Communications								X1083 Shore to Ship Communications Systems - EAM 2010																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones													MS-A △				MS-B △				MS-C △											
Prototype Phase													Prototype Phase																			
Test & Evaluation Milestones																																
Development Test																					DT											
Operational Test																									OT&E							
Production Milestones																																
FRP FY08																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 172

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

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME X0795 Support of MEECN					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	3.742	2.232	1.031	0.827	0.727	1.081	1.346	1.371	1.397	Continuing	Continuing
RDT&E Articles Qty											0

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

Support of Minimum Essential Emergency Communications Network (MEECN). MEECN is the Tri-Service communication system that ensures delivery of Emergency Action Messages (EAMs) to our strategic platforms including the land based delivery system components. Because of substantial downsizing in the number of MEECN assets, such as the CINC Airborne National Command Post (ABNCP) fleet, it is necessary to improve the range, timeliness and reliability of MEECN communications to maintain connectivity to the platforms. This project identifies, researches, and develops improvements to the MEECN primarily in the Very Low Frequency and Low Frequency (VLF/LF) ranges of MEECN. The new High Data Rate (HIDAR) mode, which greatly reduces message transmission time while providing the performance of low data rate modes, has been deployed. Improvements in mode design and signal processing are being investigated for MEECN application into a common Unified Mode design to support all VLF Strategic Platforms. A new generation of high performance universal mode will be defined to provide a single standard MEECN replacement to take advantage of new computer processing capability.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME X0795 Support of MEECN
------------------------------------------------------------	-----------------------------------------------------------------	---------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.232	1.031	0.827	0.727
RDT&E Articles Quantity				

FY02: Completed MEECN Mode Standard updates and verification of Mode Standard performance in MEECN testbed. Completed evaluation of commercial programmable crypto and developed a non-AUTODIN based Emergency Action Messages (EAMs) delivery system.

FY03: Update improved MEECN Mode design for ease in moderate processor implementations. Continue non-AUTODIN based Emergency Action Messages (EAMs) delivery system (NOVA Hybrid Solution) and complete NOVA Hybrid Solution certification testing to support the FY03 AUTODIN closure. Evaluate transverse electric/magnetic antenna pattern combining methods for improved MEECN mode.

FY04: Conduct engineering tests of the unified MEECN mode to demonstrate interoperability between Navy and Air Force strategic assets. Implement unified MEECN mode into VLF receiver equipment.

FY05: Complete engineering tests of the unified MEECN mode to demonstrate interoperability and begin JCS certification of unified MEECN mode for EAM handling.

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

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME X0795 Support of MEECN
------------------------------------------------------------	-----------------------------------------------------------------	---------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.361	1.067		
Current BES/President's Budget	2.232	1.031	0.827	0.727
Total Adjustments	-0.129	-0.036	0.000	0.000

Summary of Adjustments

Section 313, PL 107-206: Revised Economic Assumptior	-0.005			
Business Process Reform (SEC. 8100)		-0.004		
BTR for Joint Mission Planning System (JMPS)				
Combat one (JC1)	-0.047			
Economic Assumptions (SEC. 8135)	-0.006	-0.006		
Sec 8123: Management Reform Initiative	-0.021			
FFRDC	-0.002			
FY03 FFRDC reduction Sec. 8029, P.L. 107-248		-0.011		
Sec 8109 IT Cost Growth		-0.002		
Miscellaneous Department Adjustments	-0.048	-0.013		
Subtotal	-0.129	-0.036	0.000	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION			PROJECT NUMBER AND NAME X0795 Support of MEECN					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
(U) E. ACQUISITION STRATEGY:										
Not Applicable										

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME X9100 Programmable Integrated Communications Terminals					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		3.333									3.333
RDT&E Articles Qty											0
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Programmable Integrated Communications Terminal (PICT) is a user voice terminal which is designed to operate with Integrated Service Digital Network (ISDN) switches and legacy switches to support both interior and radio (external) shipboard communications. The Digital Modular Radio (DMR) system will be integrated into shipboard communications systems that require remote control capability to the radio for various end user applications. These integrated communications systems will include both internal phone and internal communications such as the Integrated Voice Network (IVN) as well as external radio communications.</p>											

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 41 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X9100 Programmable Integrated Communications Terminals
------------------------------------------------------------	----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
PICT	3.333			
RDT&E Articles Quantity				

FY02: Combined the Integrated Voice Network and the Programmable Integrated Communications Terminal with the Digital Modular Radio. Designed and developed upgrades to the user terminal, switches and DMR controllers to allow the radio control functions to be remotely controlled from the user terminals. Integrated and tested to demonstrate that the system design will meet specification requirements and is interoperable end-to-end from the user voice terminal to the radio.

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME X9100 Programmable Integrated Communications Terminals			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000			
Current BES/President's Budget		3.333			
Total Adjustments		3.333			
Summary of Adjustments					
Programmable Integrated Computer Terminals		3.400			
Section 8123: Mgmt Reform Initiative		-0.030			
FY2002 SBIR		-0.021			
Sec 313, Rev Econ Assumptions		-0.007			
Sec 8135 Econ Assumptions		-0.009			
Subtotal		3.333			
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME X9100 Programmable Integrated Communications Terminals					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3050 - Comm Auto - PICT	3,402	2,400								
(U) E. ACQUISITION STRATEGY:										
N/A										

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204163N Shore to Ship Communications Systems			X9100 Programmable Integrated Communications Terminals						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PO	SSC	0.600								0.600	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.600	0.000		0.000		0.000		0.000	0.600	
Remarks:												
Contractor Engineering Support											0.000	
Program Management Support	PO	SSC	0.150								0.150	
Program Management Support	CPAF	BAH (PMTO)	0.069								0.069	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.219	0.000		0.000		0.000		0.000	0.219	
Remarks:												
Total Cost			3.333	0.000		0.000		0.000		0.000	3.333	
Remarks:												

R-1 SHOPPING LIST - Item No. 172

UNCLASSIFIED

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

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0204229N Tomahawk Weapons System (TWS)
-------------------------------------------------------------------------------------------------	-----------------------------------------------------------------

COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	72.585	97.448	71.385	36.143	18.821	13.975	13.626	13.874
A0545 Tomahawk	72.585	97.448	71.385	36.143	18.821	13.975	13.626	13.874

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: *FY 2003 includes a Congressional add of \$5.6 million for Precision Terrain Aided Navigation less undistributed Congressional Reductions.

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 missile development is a comprehensive baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, accuracy, and lethality. The essential elements of TACTOM are upgrades to the guidance, navigation, control, and mission computer systems of the missile along with the associated Command and Control (C2) systems and weapons control systems upgrades. TACTOM will provide 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. TACTOM also includes a high anti-jam GPS receiver, navigation improvements, associated antenna systems, and Cruise Missile Real Time Retargeting. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines, the development of a penetration capability of Tactical Tomahawk and Mission Responsive Ordnance.

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 II and III TLAM.

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 and all variants in inventory. 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) planned for FY03, and Phase B IOC (TACTOM) planned to coincide with the AUR IOC in FY 2004.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204229N Tomahawk Weapons System (TWS)			PROJECT NUMBER AND NAME A0545 TOMAHAWK			
COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	72.585	97.448	71.385	36.143	18.821	13.975	13.626	13.874
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*FY 2003 includes a Congressional add of \$5.6 million for Precision Terrain Aided Navigation less Congressional Undistributed Reductions.

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 missile development is a comprehensive baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, accuracy, and lethality. The essential elements of TACTOM are upgrades to the guidance, navigation, control, and mission computer systems of the missile along with the associated Command and Control (C2) systems and weapons control systems upgrades. TACTOM will provide 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. TACTOM also includes a high anti-jam GPS receiver, navigation improvements, associated antenna systems, and Cruise Missile Real Time Retargeting. The Tomahawk program (A0545) also includes development of Torpedo Tube Launch (TTL) capability for submarines, the development of a penetration capability of Tactical Tomahawk and Mission Responsive Ordnance.

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 II and III TLAM.

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 and all variants in inventory. 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) planned for FY03, and Phase B IOC (TACTOM) planned to coincide with the AUR IOC in FY 2004.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204229N Tomahawk Weapons System (TWS)	PROJECT NUMBER AND NAME A0545 TOMAHAWK
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Tactical Tomahawk All Up Round/Subtotal Cost	40.684	54.790	40.522	15.881
RDT&E Articles Quantity				

FY02 Accomplishments: Conducted design integration, box-level performance verification testing and initiated missile-level qualification testing. Successfully completed first contractor flight test (DT-0). All performance parameters met or exceeded. Initiated assembly of Government flight test missiles for TECHEVAL / OPEVAL.

FY03 Plans: Successfully completed second contractor flight test (DT-1). All performance parameters met or exceeded. Complete missile-level qualification testing. Initiate Government flight testing. Complete TECHEVAL. Initiate hardware/software design and integration of Tactical Tomahawk Torpedo-Tube Launch (TT-TTL) capability.

FY04 Plans: Complete Government flight testing. Complete OPEVAL and IOC for Tactical Tomahawk. Continue hardware / software design and integration of Tactical Tomahawk Torpedo-Tube Launch (TT-TTL) capability.

FY05 Plans: Continue hardware / software design and integration of Tactical Tomahawk Torpedo-Tube Launch (TT-TTL) capability. Conduct flight tests of TT-TTL. Initiate TACTOM Preplanned Product Improvement.

	FY 02	FY 03	FY 04	FY 05
TACTOM Command and Control/Subtotal Cost	16.769	24.635	10.697	5.460
RDT&E Articles Quantity				

FY02 Accomplishments: Continued the incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk, support Tactical Tomahawk Weapon System TECHEVAL, and continued development of related training and installation materials.

FY03 Plans: Continue the incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk, support Tactical Tomahawk Weapon System TECHEVAL, and continue development of related training and installation materials.

FY04 Plans: Complete development of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk, support Tactical Tomahawk Weapon System OPEVAL, and complete development of related training and installation materials. Conduct imagery upgrades to Tomahawk Command and Control Systems.

FY05 Plans: Continue imagery upgrades to Tomahawk Command and Control Systems.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204229N Tomahawk Weapons System (TWS)	PROJECT NUMBER AND NAME A0545 TOMAHAWK

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
TACTOM Weapons Control System/Subtotal Cost	15.132	12.557	12.380	7.079
RDT&E Articles Quantity				

FY02 Accomplishments: Completed Phase 1A land based tests of weapons control system. Initiated TECHEVAL/OPEVAL for Phase 1A. Conducted Phase 1B Land Based and Sea Based System Integration Testing.
 FY03 Plans: Complete OPEVAL for Phase 1A of Weapons Control System. Continue Phase 1B Land Based and Sea Based System Testing. Initiate TECHEVAL/OPEVAL for Phase 1B.
 FY04 Plans: Complete Phase 1B Land Based and Sea Based System Testing of Weapons Control System. Complete TECHEVAL/OPEVAL. Initiate development of Integrated Training Architecture for TTWS.
 FY05 Plans: Continue development of Tactical Tomahawk Weapons System Integrated Training Architecture.

	FY 02	FY 03	FY 04	FY 05
Precision Terrain Aided Navigation/Subtotal Cost		5.466		
RDT&E Articles Quantity				

FY03 Plans: Complete demonstration prototype of Precision Terrain Aided Navigation (PTAN) capability to demonstrate real-time operation.

	FY 02	FY 03	FY 04	FY 05
Tactical Tomahawk Penetrator Variant/Subtotal Cost			7.786	7.723
RDT&E Articles Quantity				

FY04 Plans: Initiate warhead improvement program, including penetration capability, lethality analysis and program development.
 FY05 Plans: Continue warhead improvement program, including penetration capability, lethality analysis and program development.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204229N Tomahawk Weapons System (TWS)	PROJECT NUMBER AND NAME A0545 TOMAHAWK			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		75.347	94.265	60.594	34.156
Current President's Budget		72.585	97.448	71.385	36.143
Total Adjustments		-2.762	3.183	10.791	1.987
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.590		
Congressional rescissions		-0.161			
SBIR/STTR Transfer		-1.450			
Economic Assumptions		-0.202	-1.827	-1.678	-0.802
Reprogrammings		-0.949			
Other Navy/OSD				12.469	2.789
Congressional increases			5.600		
Subtotal		-2.762	3.183	10.791	1.987
(U) Schedule:					
Successful completion of the first contractor TACTOM flight test occurred in August 2002 which initiated the LRIP 1 contract award October 3, 2002. Final System qualification and integration on track to be completed 2QFY03. TACTOM IOC moved from Mar 04 to May 04 to reflect actual delivery date of first LRIP missile.					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 173

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204229N Tomahawk Weapons System (TWS)	PROJECT NUMBER AND NAME A0545 TOMAHAWK
-------------------------------------------------------------	---------------------------------------------------------------------------	-------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
WPN BLI 210100 Tomahawk	73.021	244.054	277.588	192.026	346.862	377.403	439.999	426.877	0.000	2377.830
OPN BLI 525000 Surface Tomahawk Support Equipment	60.218	52.487	63.423	70.294	68.700	44.695	35.180	35.444	450.369	880.810
OPN BLI 525500 Submarine Tomahawk Support Equipment	2.981	5.153	5.786	5.495	7.151	8.266	8.760	9.278	60.000	112.870
OPN Spares BLI 902010 Initial Spares	0.726	0.624	3.945	3.781	3.354	2.281	0.783	0.790		16.284
OPN Spares BLI 902090 Vendor Direct Spare Related RDT&E,N: Not Applicable	0.790	0.647	0.780	0.969	0.724	0.931	0.949	0.967		6.757

(U) E. ACQUISITION STRATEGY:

(U) D. ACQUISITION STRATEGY: In 1998, the Tomahawk Baseline Improvement Program (TBIP) transitioned to the Tactical Tomahawk program. This program is outlined in the Class Justification and Approval (CJ&A No AIR-22448) signed by the Under Secretary of the Navy on 29 May 1998. The acquisition strategy was to transition the Tomahawk Baseline Improvement Program (TBIP) to Tactical Tomahawk. The Tactical Tomahawk development program is a cost sharing contract between the Government and the Contractor to add capability to the missile. The department is pursuing obtaining a multi-year procurement for the full rate production years FY04 through FY08.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204229N Tomahawk Weapons System (TWS)			A0545 TOMAHAWK						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
Primary Hardware Development												
Tactical Tomahawk Program												
All Up Round	C/CPFF	Raytheon, Tucson, AZ	200.008	12.220	11/02						212.228	212.228
TTPV	SS/CPAF	Raytheon, Tucson, AZ				2.000	11/03	2.831	11/04		4.831	4.831
TTL	SS/CPAF	Raytheon, Tucson, AZ		0.905	11/02	10.651	11/03	1.782	11/04	15.456	28.794	28.794
Mission Planning System	SS/CPFF	ComGlobal, San Jose, CA	16.841	11.527	12/02	3.953	12/03	2.843	12/04		35.164	35.164
	SS/CPFF	Boeing, St. Louis, MO	0.650	2.190	12/02	2.123	12/03	0.500	12/04		5.463	5.463
	SS/CPFF	BAE Systems, San Diego, CA	0.929	0.640	12/02	0.500	12/03	0.926	12/04	0.273	3.268	3.268
Weapons Control System	C/CPAF	Lockheed, Valley Forge, PA	89.043	5.790	12/02	7.883	12/03	6.608	12/04	2.000	111.324	111.324
Ship Integration												
Launcher Integration	SS/CPAF	NAVSEA, Washington, DC	20.043	0.545	12/02	4.289	12/03	0.914	12/04	2.300	28.091	28.091
Systems Engineering												
All Up Round	C/FP	Raytheon, Tucson, AZ	9.000	3.017	11/02	2.419	11/03	0.825	11/04		15.261	15.261
	SS/CPFF	URAC APL, Laurel, MD	18.887	3.048	01/03	3.797	01/04	2.182	01/05		27.914	27.914
	C/FP	Boeing, St. Louis, MO	3.000								3.000	3.000
Weapons Control System	SS/CPFF	URAC APL, Laurel, MD	0.804	0.389	12/02	1.735	01/04	0.683	01/05	0.369	3.980	3.980
All Product Development Costs, 1974 through TBIP Costs in 1998			2,176.447								2,176.447	2,176.447
Subtotal Product Development			2,535.652	40.271		39.350		20.094		20.398	2,655.765	
Remarks:												

R-1 SHOPPING LIST - Item No. 173

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 11)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0204229N Tomahawk Weapons System (TWS)				A0545 TOMAHAWK					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Support (Development)												
Development Support												
All-Up-Round	WR	NSWC, Dahlgren VA	10.765	1.271	11/02	0.820	11/03	0.967	11/04	Continuing	Continuing	
	WR	NAWC-WD, China Lake, CA	9.291	3.107	11/02	1.200	11/03	0.516	11/04	Continuing	Continuing	
	WR	NSWC, Pt Hueneme, CA	3.476	0.437	11/02	0.283	11/03	0.120	11/04	Continuing	Continuing	
	WR	NAWC-AD, Pax River, MD	4.177	0.679	11/02	0.662	11/03	0.334	11/04	Continuing	Continuing	
	WR	NWAD, Corona	1.278	0.000	11/02	0.000	11/03	0.082	11/04	Continuing	Continuing	
	WR	NUWC, Newport, RI	4.481	0.725	11/02	2.931	11/03	0.712	11/04	Continuing	Continuing	
	SS/CPFF	SAIC, Arlington, VA	6.557	1.006	12/02	2.086	12/03	1.144	12/04		10.793	10.793
	WR	NSWC, Indian Head, MD	5.765	0.573	11/02	0.442	11/03	0.547	11/04	Continuing	Continuing	
	WR	NSWC, Carderock, MD	1.263	0.460	11/02	0.100	11/03			Continuing	Continuing	
	C/CPFF	Honeywell, Minneapolis, MN	1.538	2.196							3.734	3.734
	Various	Various	16.161	0.277	04/03	0.601	12/03	0.079	12/04	Continuing	Continuing	
Weapons Control Systems	WR	NUWC, Newport, RI	12.498	2.606	12/02	0.629	11/03				15.733	
Software Development												
Mission Planning Systems	SS/CPFF	Raytheon, Arlington, VA	5.100								5.100	5.100
	SS/CPFF	Lockheed, Valley Forge, PA	2.015	1.929	12/02	2.200	12/03	1.431	12/04	1.530	9.105	9.105
	SS/CPFF	SAIC, Arlington, VA	8.492	4.776	12/02	1.300	12/03	0.946	12/04	0.679	16.193	16.193
	SS/CPFF	URAC APL, Laurel, MD	8.546	4.523	12/02	2.449	01/04	0.678	01/05	2.965	19.161	19.161
Weapons Control Systems	WR	NSWC, Dahlgren VA	19.627	4.918	12/02	2.976	12/03	0.991	12/04	Continuing	Continuing	
Subtotal Support			121.030	29.483		18.679		8.547		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 173

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 11)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0204229N Tomahawk Weapons System (TWS)				A0545 TOMAHAWK					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	SS/CPFF	Raytheon, Tucson, AZ	23.457	17.468	11/02	6.356	11/03	1.946	11/04	3.834	53.061	53.061
	WR	COMOPTEVFOR, VA	2.233	0.579	12/02	0.434	12/03	0.525	12/04	Continuing	Continuing	
	WR	NAWC, Pt Mugu Test Ctr, CA	12.360	7.270	11/02	4.000	11/03	3.375	11/04	Continuing	Continuing	
	WR	NOSC, San Diego CA	1.275	0.575	11/02						1.850	
	WR	NUWC, Newport RI	0.440	0.508	11/02	1.182	11/03	1.150	11/04	Continuing	Continuing	
	SS/CPFF	URAC APL, Laurel MD	0.692	0.690	12/02	0.320	12/03	0.251	12/04		1.953	1.953
	WR	NSWC, Dahlgren, VA	0.807	0.554	11/02	0.672	11/03	0.125	11/04	Continuing	Continuing	
	WR	NSWC, Port Hueneme				0.352	11/03				0.352	
		Various	3.541	0.050	11/02	0.040	11/03	0.130	11/04	Continuing	Continuing	
Subtotal T&E			44.805	27.694		13.356		7.502		Continuing	Continuing	
Remarks:												
Management												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			2,701.487	97.448		71.385		36.143		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																										DATE: February 2003										
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																
RDT&E, N / BA-7										0204229N Tomahawk Weapons System (TWS)										A0545 TOMAHAWK																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																																				
Missile Integration																																				
Missile level Qualification																																				
P3I																																				
Test & Evaluation Milestones																																				
Development Test																																				
Operational Test																																				
Production Milestones																																				
LRIP I FY 02																																				
LRIP II FY 03																																				
FRP FY 04																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 173

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						R-1 ITEM NOMENCLATURE 0204311N-Integrated Surveillance Systems					
BA-7											
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	302.260	37.711	25.365	14.278	17.028	18.057	19.968	13.541	13.746	Continuing	Continuing
X0758-SURTASS	97.810	8.356	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	106.166
X0766-Integrated Surveillance Systems	204.450	19.704	17.012	10.017	13.189	14.099	16.344	9.851	9.996	Continuing	Continuing
X9102 IUSS Mission Planning	0.000	6.686	2.927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.613
X9103 Fixed Distribution System	0.000	2.965	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.965
Z0766 Classified Project	0.000	0.000	5.426	4.261	3.839	3.958	3.624	3.690	3.750	Continuing	Continuing
Quantity of RDT&E Articles											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (P.E.) comprises four projects - X0766, X0758, X9102 and X9103. Project X0766 provides for Integrated Undersea Surveillance Systems (IUSS) Research and Development Projects. Project X0758 is for the Surveillance Towed Array Sensor (SURTASS) development efforts. 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. Beginning in FY03, Project X0758 budget is being moved to Project X0766 line. Projects X9102 and X9103 are Congressional Plus Ups that support development efforts for IUSS. Beginning in FY03 FSS systems previously under x0766 transfer from SPAWAR to NSMA under a project code Z0766. Details for this linbe item are held at a higher classification level.</p> <p>(U) The IUSS Research and Development project (X0766) 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.</p> <p>(U) In order to continue with reductions in life cycle costs and continue with system-wide consolidation, a long-term goal is to develop a common IUSS processor based on NAVSEA'S Acoustic Rapid COTS Insertion (ARCI) program. The IUSS ARCI variant will have the capability to process and display data from future underwater systems. The IUSS ARCI variant will also have the capability to replace the legacy systems as they reach end of life and require upgrading. Additionally, a goal of SURTASS is to consolidate 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.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 7: This program is 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. 174

UNCLASSIFIED

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System						
COST (\$ in Millions)		Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		204.450	19.704	17.012	10.017	13.189	14.099	16.344	9.851	9.996	Continuing	Continuing
RDT&E Articles Qty												0

(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 greatly reducing costs by consolidating logistics support, using Non-Developmental Items and commercial hardware, while increasing operator efficiency through computer aided detection and classification processing. SURTASS development efforts include: twin-line array 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. Functional improvements are delivered to the Fleet in software "Builds". Future builds will be based upon the Advanced Processor Build (APB) process begun by the NAVSEA Submarine USW program. APB-99 was used to support an ARCI (I) Engineering Development Model (EDM) demonstration system, providing A-180R long-line processing only. APB-01 will be used for the production ARCI (I) systems for all long-line arrays. APB-02 will provide Twin-line processing capabilities, and APB-03 will provide active processing capabilities. Additionally, 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. 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 Twin-Line/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. Also includes adaptive beam forming; integration of tactical decision aids for LFA monostatic and bistatic operation; integration of SURTASS active and passive information processing systems to provide contact association and geographic tracking; and common anti-submarine warfare (ASW) OMI and environmental processing. The LFA task includes development and testing of a compact LFA transmit source array for SWATH-P ships.

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 objective is to obtain a common Operator Machine Interface (OMI) among currently fielded systems. The long-term goal is to develop a single IUSS processor baseline, with minor maintenance efforts continuing on fielded systems. The existing system architecture, signal processing, contract management, and reporting requirements will be evaluated as well as the requirements for future systems. The development of the IUSS processor will take advantage of automation advancement, array technology improvements, and IUSS, submarine, and surface USW system commonality.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
FSS	1.877	0.000	0.000	0.000
RDT&E Articles Quantity				
<p>FY02 FSS (\$1,887K) – Continued design and development of software to support and perform hardware evaluations to transition IUSS to a common processing architecture. Verified design and functionality via in-lab demonstration testing. Developed FSS system improvements to optimize system performance. Development efforts included calibrated data collection, increased frequency capability and bandwidth for signal processing . Beginning in FY03 FSS transferred from SPAWAR to NSMA under a new project code.</p>				
	FY 02	FY 03	FY 04	FY 05
T-23 DT/OT	2.160	1.825	0.000	0.750
RDT&E Articles Quantity				
<p>FY02 T-23 Dt/OT (\$2,160K) – Conducted T-23 development testing/Operational Testing (DT/OT) certification test planning. Corrected software issues uncovered during on-going lab developmental testing. FY03 T-23 DT/OT (\$1,825K) – Continue T-23 development testing/Operational Testing (DT/OT) certification testing. Correct software issues uncovered during testing. FY05 T-23 DT/OT(\$750K) – Complete T-23 Operational Testing (DT/OT) certification testing. Correct software issues uncovered during testing.</p>				
	FY 02	FY 03	FY 04	FY 05
Common Acoustic Processor	3.099	3.275	2.566	2.500
RDT&E Articles Quantity				
<p>FY02 Common Acoustic Processor (\$3,099K) – Continued development of SURTASS ARCI (I) capability for all single line array types. Began development of software for Twin-Line processing in the ARCI (I) architecture. FY03 Common Acoustic Processor (\$3,275K) – Continue software development for Twin-Line processing in the ARCI (I) architecture. Add APB improvements to single line ARCI (I) capability. FY04 Common Acoustic Processor (\$2,566K) – Complete software development for Twin-Line processing in the ARCI (I) architecture. Begin software development for Active processing in the ARCI (I) architecture. Add APB improvements to single line ARCI (I) capability. FY05 Common Acoustic Processor (\$2,500K) – Continue software development for Active processing in the ARCI (I) architecture. Add APB improvements to Twin-Line ARCI (I) capability.</p>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Surveillance Systems	1.504	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 Surveillance System Integration (\$1,504K) – Continued integration of SURTASS ARCI (I) capability with IUSS legacy systems. Continued integration of ARCI (I), Comms, and TDA improvements.

	FY 02	FY 03	FY 04	FY 05
Active Acoustics	2.400	2.531	0.000	0.500
RDT&E Articles Quantity				

FY02 Active Acoustics (\$2,400K) – Continued implementation of a multi-year sea test program focused on CONOPS and the physics of shallow water. Developed improvements for LFA operations in shallow water, conducted analysis, simulations, and trade-off studies to define the optimum configuration of shallow water sources. Continued sea test program planning to support system improvements. Prepared for re-activation of LFA system on Cory based on environmental approvals.
FY03 Active Acoustics (\$2,531K) – Continue implementation of a multi-year sea test program focused on CONOPS and the physics of shallow water. Continue development of improvements for LFA operations in shallow water. Continue sea test program to support system improvements and demonstrate/validate operational performance.
FY05 Active Acoustics (\$500K) – Restart multi-year sea test program focused on CONOPS and the physics of shallow water.

	FY 02	FY 03	FY 04	FY 05
LFA Environmental	1.200	0.600	0.000	0.000
RDT&E Articles Quantity				

FY02 LFA Environmental (\$1,200K) – Continued environmental research on the effect of low frequency active sonar on marine mammals.
FY03 LFA Environmental (\$600K) – Continue environmental research on the effect of low frequency active sonar on marine mammals. Funding for this effort transfers to ONR in FY04.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
N74 ASW Study	1.067	1.074	1.175	1.175
RDT&E Articles Quantity				

FY02 N74 ASW Study (\$1,067K) – Continued conducting trade-off and mission studies to explore networked ASW system concepts, investment alternatives and development of a community-wide strategy for common performance.

FY03 N74 ASW Study (\$1,074K) – 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.

FY04 N74 ASW Study (\$1,175K) – 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.

FY05 N74 ASW Study (\$1,175K) – 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 02	FY 03	FY 04	FY 05
ASW C4I	0.200	0.200	0.200	0.200
RDT&E Articles Quantity				

FY02 ASWC4I (\$200K) – Continued performing engineering, analysis and trade-offs; conducted proof of concept testing to support IUSS integration into the Navy's C4I architecture, including IT-21 implementation. Continued supporting IUSS C4I IPT. Coordinated the development of GCCS-M ASW Tactical Decision Aids (TDAs). Defined ASWC4I system concepts, system interfaces and architecture.

FY03 ASWC4I (\$200K) – Continue performing engineering, analysis and trade-offs; conduct proof of concept testing to support IUSS integration into the Navy's C4I architecture, including IT-21 implementation.

FY04 ASWC4I (200K) – Continue performing engineering, analysis and trade-offs; conduct proof of concept testing to support IUSS integration into the Navy's C4I architecture, including IT-21 implementation.

FY05 ASWC4I (200K) – Continue performing engineering, analysis and trade-offs; conduct proof of concept testing to support IUSS integration into the Navy's C4I architecture.

	FY 02	FY 03	FY 04	FY 05
System Engineering	0.250	0.255	0.260	0.270
RDT&E Articles Quantity				

FY02 System Engineering (\$250K) – Provided system level engineering across IUSS programs. Translated Fleet requests into system level design solutions.

FY03 IUSS System Engineering (\$255K) – Continue to provide system level engineering across IUSS programs. Translate Fleet requests into system level design solutions.

FY04 IUSS System Engineering (\$260K) – Continue to provide system level engineering across IUSS programs. Translate Fleet requests into system level design solutions.

FY05 IUSS System Engineering (\$270K) – Continue to provide system level engineering across IUSS programs. Translate Fleet requests into system level design solutions.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
WeCAN	5.947	0.000	0.000	0.000
RDT&E Articles Quantity				

(5,947) **FY02 WE CAN - CONGRESSIONAL PLUS-UP** – Expanded capability of WECAN collaborative planning functionality to include other multi-mission warfare areas. Provided WECAN functionality to new ASW platforms. Funding provided continued program support and the migration of existing capabilities to the Navy Common Collaborative Tool Set and integration with other warfare areas and domains.

	FY 02	FY 03	FY 04	FY 05
SURTASS System Eng & Shore Support	0.000	1.595	1.750	1.750
RDT&E Articles Quantity				

FY03 (\$1,595K): Continue development of SURTASS ARCI (I) interfaces with IUSS legacy systems. Continue incorporation of future ARCI (I), Comms, and TDA improvements. Develop shore processing/display software in the ARCI (I) architecture. Investigate data compression algorithms; link management implementations, and improved reach back capabilities. Continue implementation of Common OMI.
FY04 (\$1,750K): Continue development of SURTASS ARCI (I) interfaces with IUSS legacy systems. Continue incorporation of future ARCI (I), Comms, and TDA improvements. Develop shore processing/display software in the ARCI (I) architecture. Investigate data compression algorithms; link management implementations, and improved reach back capabilities. Complete implementation of Common OMI.
FY05 (\$1,750K): Continue incorporation of future ARCI (I), Comms, and TDA improvements. Continue development of shore processing/display software in the ARCI (I) architecture. Incorporate improved data compression algorithms, link management implementations, and improved reach back capabilities.

	FY 02	FY 03	FY 04	FY 05
Passive Processing & Automation	0.000	3.257	2.066	1.980
RDT&E Articles Quantity				

FY03 (\$3,257K): Continue development of algorithms and software for signal processing and automation associated with unique SURTASS requirements and environments, in conjunction with the SPWG and AWG. Develop automated tools to reduce operator workload caused by increased beam count and high clutter in shallow water. Participation in SDWG and related working groups.
FY04 Passive Processing & Automation (\$2,066K) – Continue development of algorithms and software for signal processing and automation associated with unique SURTASS requirements and environments. Participation in SDWG and related working groups.
FY05 Passive Processing & Automation (\$1,980K) – Continue development of algorithms and software for signal processing and automation associated with unique SURTASS requirements and environments. Participation in SDWG and related working groups.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
TB-29A/Twin-Line	0.000	2.400	2.000	1.500
RDT&E Articles Quantity				

FY03 (2,400K): Continue processing improvements to support TB-29A operations and expand array interoperability. Develop across platform telemetry architecture. Develop Twin-Line modifications to TB-29A architecture. Continue work to implement twin-line to long-line conversion capabilities, including processing and hardware changes.

FY04 (\$2,000K): Continue processing improvements to support TB-29A operations and expand array interoperability. Develop across platform telemetry architecture. Continue development of Twin-Line modifications to basic TB-29A architecture. Continue work to implement twin-line to long-line conversion capabilities, including processing and hardware changes.

FY05 (\$1,500K): Continue processing improvements to support TB-29A operations and expand array interoperability. Continue development of across platform telemetry architecture.

	FY 02	FY 03	FY 04	FY 05
Littoral LFA	0.000	0.000	0.000	2.110
RDT&E Articles Quantity				

FY05: Littoral LFA (\$2,110K) – Begin development of prototype littoral LFA system for both SURTASS platforms and deployable source array. Develop higher frequency, smaller, lower cost sources for deployment from SWATH-P and platforms of opportunity.

	FY 02	FY 03	FY 04	FY 05
Towed Array Technologies	0.000	0.000	0.000	0.454
RDT&E Articles Quantity				

FY05: Towed Array Technology (\$454K)– Begin development of all fiber optic arrays. Develop improved array front-end components and handling systems. Develop array locator and array recovery systems. Develop processing for extension into tactical frequency regions.

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0204311N-Integrated Surveillance Systems				X0766: IUSS Detection and Classification System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IUSS Common Architecture	WX	Various	0.990	0.160	11/02	0.150	11/03	0.150	11/04	Continuing	Continuing	
LFA Improvements /Active Acoustic	CPFF	TRW/Various	4.005	0.500	11/02	0.000	11/03	0.500	11/04	Continuing	Continuing	
C4ISR Integration	CPFF	TRW/Various	1.719	0.050	11/02	0.050	11/03	0.050	11/04	Continuing	Continuing	
FDS/AODS	WX	Various	1.216	0.000	11/02	0.000	11/03	0.000	11/04	0.000	1.216	
Passive Signal Processing/ Sonar	Var/WX	Various	0.000	0.500	11/02	0.400	11/03	0.400	11/04	Continuing	Continuing	
Array Improvements	Var/WX	Various	0.000	0.300	11/02	0.320	11/03	0.320	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
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											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			7.930	1.510		0.920		1.420		0.000	11.780	
Remarks:												

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204311N-Integrated Surveillance Systems			X0766: IUSS Detection and Classification System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IUSS Common Architecture	Var/ WX	VARIOUS	1.051	0.500	11/02	0.500	11/03	0.500	11/04	Continuing	Continuing	
LFA Improvements	Var/ WX	VARIOUS	5.866	1.500	11/02	0.000	11/03	0.400	11/04	Continuing	Continuing	
Passive Signal Processing/ Sonar	Var/ WX	VARIOUS		0.950	11/02	0.500	11/03	0.500	11/04	Continuing	Continuing	
Array Improvements	Var/ WX	VARIOUS		0.250		0.400	11/03	0.250	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal T&E			6.917	3.200		1.400		1.650		0.000	13.167	
Remarks:												
LFA Improvements /C4ISR	Var/ WX	VARIOUS	1.737	0.150	11/02	0.000	11/03	0.150	11/04	Continuing	Continuing	
Passive Signal Processing/ Sonar	Var/ WX	VARIOUS		0.100	11/02	0.150	11/03	0.150	11/04	Continuing	Continuing	
Array Improvements	Var/ WX	VARIOUS		0.200	11/02	0.200	11/03	0.200	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.737	0.450		0.350		0.500		0.000	3.037	
Remarks:												
Total Cost			224.154	17.012		10.017		13.189		0.000	264.372	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		14.235	20.405		
Current BES/President's Budget		19.704	17.012	10.017	13.189
Total Adjustments		5.469	-3.393	0.000	0.000
Summary of Adjustments					
Web Centric ASW Net (WECAN)		6.000			
Sec. 8123: Management Reform Initiative		-0.179			
Sec 313-PL 107-206 Revised Economic Assumptions		-0.043			
Functional Transfer from SPAWAR to NSMA			-2.944		
Sec. 8100 Business Process Reform			-0.070		
Sec. 8135 Economic Assumptions		-0.056	-0.114		
Sec. 8109 IT Cost Growth			-0.032		
Sec. 8029 FY03 FFRDC Reductions			-0.012		
Miscellaneous Navy Adjustments		-0.253			
Miscellaneous Department Adjustments			-0.221		
Subtotal		5.469	-3.393	0.000	0.000
(U) Schedule:					
The following projects have been delayed due to funding reductions: DT/OT for SURTASS/LFA will be delayed by 1 year. Active Acoustics Program will be put on hold for 1 year. Littoral Low Frequency Active (LLFA) System Development and Demonstration phase will be extended by one year. The incorporation of active processing into the ARCI processing system will be delayed by one year and the developmental and operational testing of the TB-29 twinline system will be expanded by 6 months.					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 11 of 27)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 2237 OMN Omitted per instructions Related RD TEN: (U) PE 0604784N Advanced Deployable System	16.338	20.206	15.228	21.231	12.134	0.446	17.166	33.777	Continuing	Continuing
(U) E. ACQUISITION STRATEGY: *										
Program Milestones Engineering Milestones T&E Milestones Contract Milestones	FY2002 ARCI PBA/RDA VARIANT 7/02 ARCI (I) PROCUREMENT	FY2003 ARCI TB29/TL VARIANT 7/03 T-23 SEA TESTS	FY2004 ARCI TB29/TL VARIANT 8/04	FY2005 ARCI ACTIVE VARIANT 7/05 TB29A/TL T-23 SEA TESTS						
* Not required for Budget Activities 1,2,3, and 6										

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems								PROJECT NUMBER AND NAME X0766: IUSS Detection and Classification System																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones																																
Complete																																

R-1 SHOPPING LIST - Item No. 174

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME SURTASS- X0758					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	97.810	8.356	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	106.166
RDT&E Articles Qty											0

(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 greatly reducing costs by consolidating logistics support, using Non-Developmental Items and commercial hardware, and increasing operator efficiency through computer aided detection and classification processing. SURTASS development efforts include: twin-line array 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. Project X0758 budget is being moved to Project X0766 beginning in FY03.

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME SURTASS- X0758

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Passive Processing & Automation	2.000	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 (\$2,000K) - Continued development of improved acoustic signature formation, and target passive ranging. Investigated concepts for monitoring low priority beams as part of overall link management concept. Developed algorithms for improved low frequency performance. Continued participation in the APB process. Surveyed off-board sensor technologies for applicability to SURTASS.

	FY 02	FY 03	FY 04	FY 05
TB-29A/Twin-Line	2.100	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 (\$2,100K) - Continued processing improvements to support TB-29A operations and expand array interoperability. Continued development of across platform telemetry architecture. Investigated concepts for conversion of TB-29A Twin-line capability into a Long-line capability.

	FY 02	FY 03	FY 04	FY 05
Shore Processing	1.532	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 (\$1,532K) - Continued incorporation of OMI Commonality Working group guidance. Continued development of Link Management functionality. Continued incorporation of shore improvements to support TL array operations.

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME SURTASS- X0758
-------------------------------------------------------------	-----------------------------------------------------------------------------	--------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
SURTASS/LFA	2.724	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 CONGRESSIONAL PLUS-UP (\$2,724K) - Continued research and software development to improve processing in littoral/shallow water regions. Conducted T-29 Twin Line Array development risk reduction engineering, analysis, and testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments /Planned Program	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments /Planned Program	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME SURTASS- X0758			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		5.806	0.000	0.000	0.000
Current BES/President's Budget		8.356	0.000	0.000	0.000
Total Adjustments		2.550	0.000	0.000	0.000
Summary of Adjustments					
SURTASS LFA		2.800			
Section 8123: Management Reform Initiative		-0.076			
Section 313 PL 107-206 Revised Economic Assumptions		-0.024			
Section 8135: Economic Assumptions		-0.024			
Miscellaneous Navy Adjustments		-0.126			
Subtotal		2.550	0.000	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not applicable					

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME X9102: IUSS Mission Planning					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	6.686	2.927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.613
RDT&E Articles Qty											0

(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. PD18 is involved with the development and upgrade of various IUSS systems. These systems include FDS, FDS-C, SDS, SURTASS, and ADS.

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 20 of 27)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X9102: IUSS Mission Planning

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
IUSS Mission Planning	6.686	2.927	0.000	0.000
RDT&E Articles Quantity				

FY02 (\$6,686K) - Funded first phase of the Automated IUSS Mission Planning System. This effort builds on the work begun in the ADS program (PE 0604784N) to automate array laydown and cable routing plans and allows the mission planner the capability to rapidly update the plan. Functional requirements for FSS, ADS and SURTASS were combined and prioritized with fleet input. Software was developed as GCCS-M segments that are at least level 6 DII-COE compliant. Included were approximately \$800K to collect environmental and physical data for an area of high fleet tactical interest for mission planner demonstration.

FY03 (\$2,927K) - Phase II : User Automation and data fusion efforts.

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

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X9102: IUSS Mission Planning			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		6.686	2.927	0.000	0.000
Total Adjustments		6.686	2.927	0.000	0.000
Summary of Adjustments					
IUSS		6.800			
Section 8123: Management Reform Initiative		-0.060			
Section 313, PL 107-206 Revised Economic Assumption		-0.014			
Section 8100 Business Process Reform			-0.012		
Section 8135 Economic Assumptions		-0.019	-0.017		
Section 8109 IT Cost Growth			-0.006		
IUSS Mission Planning			3.000		
Miscellaneous Navy Adjustments		-0.021			
Miscellaneous Department Adjustments			-0.038		
Total		6.686	2.927		
(U) Schedule:					
Not applicable					
(U) Technical:					
Not applicable					

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME X9102: IUSS Mission Planning											
(U) D. OTHER PROGRAM FUNDING SUMMARY:																	
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>							
NONE																	
Related RD TEN:																	
(U) PE 0204311N Integrated Surveillance System																	
(U) PE 060478N Advanced Deployable System																	
(U) E. ACQUISITION STRATEGY: *																	
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Program Milestones</td> <td style="width: 70%;">FY2002</td> </tr> <tr> <td>Engineering Milestones</td> <td>PDR 6/02</td> </tr> <tr> <td>T&E Milestones</td> <td>DDR 9/02</td> </tr> <tr> <td>Contract Milestones</td> <td></td> </tr> </table>										Program Milestones	FY2002	Engineering Milestones	PDR 6/02	T&E Milestones	DDR 9/02	Contract Milestones	
Program Milestones	FY2002																
Engineering Milestones	PDR 6/02																
T&E Milestones	DDR 9/02																
Contract Milestones																	
* Not required for Budget Activities 1,2,3, and 6																	

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems				PROJECT NUMBER AND NAME X9103 Fixed Distribution System					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	2.965	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.965
RDT&E Articles Qty											0

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

A. (U) IUSS provides the Navy with it's primary means of submarine detection both nuclear and diesel. The program has undergone a major transition from an 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. SPAWAR is involved with the development and upgrade of various IUSS systems. These systems include: FDS, FDS-Commercial, SDS, SURTASS, and ADS.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X9103: Fixed Distribution System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
FSS	2.965	0.000	0.000	0.000
RDT&E Articles Quantity				

FY02 (\$2,965k) - Developed FSS system improvements to optimize performance. Development efforts included calibrated data collection, increased frequency capability and the impact on signal processing and array designs and increased bandwidth for signal processing. Continued development of an All-Optical underwater surveillance system.

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

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

R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																																													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems	PROJECT NUMBER AND NAME X9103: Fixed Distribution System																																																														
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;"></th> <th style="text-align: right; width: 10%;">FY 2002</th> <th style="text-align: right; width: 10%;">FY 2003</th> <th style="text-align: right; width: 10%;">FY 2004</th> <th style="text-align: right; width: 10%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td colspan="5">(U) Funding:</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> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">2.965</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">2.965</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="5"> Summary of Adjustments</td> </tr> <tr> <td> Fixed Distributed System</td> <td style="text-align: right;">3.000</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 8123: Management Reform Initiative</td> <td style="text-align: right;">-0.027</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 313, PL 107-206 Revised Economic Assumption</td> <td style="text-align: right;">-0.006</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 8135 Economic Assumptions</td> <td style="text-align: right;">-0.008</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Miscellaneous Navy Adjustments</td> <td style="text-align: right;">0.006</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Total</td> <td style="text-align: right; border-top: 1px solid black;">2.965</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule: Not Applicable</p> <p style="margin-top: 20px;">(U) Technical: Not Applicable</p>						FY 2002	FY 2003	FY 2004	FY 2005	(U) Funding:					Previous President's Budget:	0.000	0.000	0.000	0.000	Current BES/President's Budget	2.965	0.000	0.000	0.000	Total Adjustments	2.965	0.000	0.000	0.000	 Summary of Adjustments					Fixed Distributed System	3.000				Section 8123: Management Reform Initiative	-0.027				Section 313, PL 107-206 Revised Economic Assumption	-0.006				Section 8135 Economic Assumptions	-0.008				Miscellaneous Navy Adjustments	0.006				 Total	2.965	0.000	0.000	0.000
	FY 2002	FY 2003	FY 2004	FY 2005																																																												
(U) Funding:																																																																
Previous President's Budget:	0.000	0.000	0.000	0.000																																																												
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R-1 SHOPPING LIST - Item No. 174

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204311N-Integrated Surveillance Systems			PROJECT NUMBER AND NAME X9103: Fixed Distribution System						
(U) D. OTHER PROGRAM FUNDING SUMMARY:											
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
OPN 2225	33.925	0	0	0	0	0	0	0	0	33.925	
Related RD TEN:											
(U) PE 0204311N Integrated Surveillance System											
(U) PE 0604784N Advanced Deployable System											
(U) E. ACQUISITION STRATEGY: *											
Not Applicable											
* Not required for Budget Activities 1,2,3, and 6											

R-1 SHOPPING LIST - Item No. 174

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: FEBRUARY 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE PE 0204413N/Amphibious Tactical Support Units			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	25.648	6.185	5.652	0.161	4.685	4.227	2.271	2.771
21980/SUPPORTING ARMS COORDINATION CENTER (SACC) AUTOMATION	4.328	4.271	4.466	0.161	2.725	2.268	0.312	0.323
22231/LANDING CRAFT UTILITY (LCU) REPLACEMENT & D-DAY MOBILE FUEL DUMP (DMFD)	5.496	1.914	1.186	0.000	0.000	0.000	0.000	0.000
29105/EXPEDITIONARY WARFARE (EXW) TESTBED - SUPPORTING ARMS TECH INSERTION	2.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S2231 MCAC WEAPONS DEVELOPMENT	0.000	0.000	0.000	0.000	1.960	1.959	1.959	2.448
Y2909 AMPHIBIOUS LIGHTERAGE DEVELOPMENT	13.424	0.000	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:

SACC AUTOMATION (21980) - Automates the Supporting Arms Coordination Center (SACC) aboard LHA 1 and LHD 1 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. This PU also contains 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.

LCU REPLACEMENT & DMFD (22231) - LCU Replacement supports the development of a technologically advanced heavy lift utility landing craft that will compliment the high speed, over-the beach, ship-to-shore amphibious lift of the future. The DMFD effort was cancelled in October 2001.

EXW TESTBED (29105) - Expeditionary Warfare Testbed utilizes a landbased test facility to identify emerging technologies that will bring an enhanced capability to the Expeditionary Warfighter. Successfully demonstrated technologies are planned for incorporation into the Command Operations Center - Afloat (COC-Afloat).

MCAC WEAPONS DEVELOPMENT (S2231) - Transitions 6.3 research efforts on LCAC Future Naval Capabilities (FNC): Electronic Warfare Integrated System for Small Platforms (EWISSP), technology refresh for Commercial Off The Shelf (COTS) equipment; Virtual Environment LCAC (VELCAC) training simulators; and integration/interoperability capabilities for LCAC in Expeditionary Warfare environment.

AMPHIBIOUS LIGHTERAGE DEVELOPMENT (Y2909)- Supports the technology development of a service-interoperable causeway lighterage system.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME PU 21980/SACC Automation and AADS/29105 SUPPRT ARMS TECH INSE			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.328	4.271	4.466	0.161	2.725	2.268	0.312	0.323
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The **Supporting Arms Coordination Center (SACC)** effort automates the communications and data flow that calls for fire and supporting arms for Marine forces ashore. Currently the process is all manual and voice accomplished which is unresponsive to the needs of supported forces. Specifically, SACC is developing the Naval Fire Control System and developing/procuring two engineering development models for shipboard installation and test. SACC will also interface with the Advanced Field Artillery Tactical Data System (AFATDS), which integrates the automated function of supporting arms into the composite tactical picture. The **Amphibious Assault Direction System (AADS, AN/KSQ-1)** effort 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 Force ships is also included.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0204413N/Amphibious Tactical Support Units	PROJECT NUMBER AND NAME PU 21980/SACC Automation & AADS		
B. ACCOMPLISHMENTS/PLANNED PROGRAM				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.328	4.271	4.466	0.161
RDT&E Articles Quantity	N/A	N/A	N/A	N/A
<p>SACC: System Engineering Development for Spiral I and Spiral II, including Requirements Definition and Lab Based Testing; Acquisition and Prototype interface development of AFATDS with Naval Fires Network (NFN) and Install and Test Aboard LHA/LHD; DoD Documentation Program Reviews (e.g. ORD revalidation, APB, TEMP SEMP, ILSF); Programmatic Support (e.g. Mgt Plans, Schedule, Briefs, Travel, Studies, etc.); Shipboard Interface and Interoperability Analysis and Testing of Spiral I; Ship Checks and Drawings. Developmental Test and Evaluation of Spiral I and Spiral II; Software Development of Spiral II; Shipboard Interface and Interoperability Testing of Spiral II; Spiral II Test, Training, and Logistics System Development, and System Integration and Shipboard Interface/Interoperability Testing. Portion of extramural program reserved for Small business innovation Research assessment in accordance with 15 USC 638.</p> <p>AADS:</p>				
C. Program Change Summary:				
(U) Funding	FY2002	FY2003	FY2004	FY2005
(U) FY 2003 Pres Budget	4.598	4.376	5.925	0.207
(U) FY 2004 Pres Budget	<u>4.328</u>	<u>4.271</u>	<u>4.466</u>	<u>0.161</u>
(U) Total Adjustments	-0.270	-0.105	-1.459	-0.046
- (U) Summary of Adjustments:				
FY 2002 SBIR	-0.100	0.000	-0.100	-0.100
FY 2002 BTR	-0.113	0.000	-0.113	-0.113
MINOR PRICING ADJUSTMENTS	<u>-0.057</u>	<u>-0.105</u>	<u>-1.459</u>	<u>-0.046</u>
	-0.270	-0.105	-1.672	-0.259
(U) Schedule: Not Applicable				
(U) Technical: Not Applicable				

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204413N/Amphibious Tactical Support Units	PROJECT NUMBER AND NAME PU 21980/SACC Automation and AADS/29105 SUPPRT ARMS TECH INSE

D. Other Program Funding Summary:

	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>To Complete</u>	<u>Total Cost</u>
<u>SACC:</u>										
OPN Line 098100 Items Under \$5M	343	344	870	866	682	828	854	867	Con't	Con't
O&MN Line, 1D3D, PEO EXW, PE 0708012N	314	311	1733	1726	1364	1367	1396	1433	Con't	Con't
<u>AADS:</u>										
OPN Line 098100 Other Nav Equip	0	0	6000	9000	16330	14440	14410	8600	Con't	Con't
O&MN Line, 1B5B, PEO EXW, PE 0708012N	1545	1575	1414	1488	1605	1730	3638	3738	Con't	Con't

The procurement items for **SACC** include jam boxes, Automated Distribution Network Systems (ADNS), racks, workstations, and 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. 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.

(U) Related RDT&E: Not Applicable

E. Acquisition Strategy: The **SACC** effort is part of a collaboration between N75 and N76 to jointly 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 N76 management. The AADS effort is prioritized according to lead-time between hardware procurement and delivery. The longest lead-time is associated with some EPLRS equipment with lead times as long as 18 to 20 months. The intent is to procure the EPLRS long lead-time equipment in FYs 04-05, and other equipment in time for integration installation using a schedule associated with ARG and/or Amphibious ship/craft availability beginning 2nd or 3rd quarter FY05.

R-1 SHOPPING LIST - Item N 175/4

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/ BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204413N/Amphibious Tactical Support Units	PROJECT NUMBER AND NAME PU 21980/SACC Automation and AADS/29105 SUPPRT ARMS TECH INSE

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 - Systems Engineering
NNSY, Norfolk, VA - Technical Data
ARMY - Hardware Development

Contractors & Locations - Work Performed

PM Effects - Hardware Development
TBD - Software Development

Universities & Locations - Work Performed - Not Applicable.

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204413N/Amphibious Tactical Support Units			PU 21980/SACC Automation and AADS/29105 SUPPRT ARMS TECH INSERTION						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	IPR	PM Effects, ARMY	1.553	1.400	12/02						2.953	
Ancillary Hardware Development	WR	NSWC DD				0.500	12/03				0.500	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	NSWC DD , NSWC CSS	2.778	1.201	12/02	0.950	12/03				4.929	
Training Development	wWR	NSWC DD				0.897	12/03				0.897	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			4.331	2.601		2.347		0.000		0.000	9.279	
Remarks:												
Development Support											0.000	
Software Development	CPAF	TBD				0.897	12/03				0.897	
Integrated Logistics Support	WR	NSWC DD		0.200	12/02	0.389	12/03				0.589	
Configuration Management											0.000	
Technical Data	WR	NNSY		0.200	12/02						0.200	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.400		1.286		0.000		0.000	1.686	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204413N/Amphibious Tactical Support Units			PU 21980/SACC Automation and AADS/29105 SUPPRT ARMS TECH INSERTION						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC (DD & CSS)	2.397	1.195	12/02	0.758	12/03	0.050	12/04	0.161	4.561	
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			2.397	1.195		0.758		0.050		0.161	4.561	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel	WR	Various		0.075	12/02	0.075	12/03				0.150	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.075		0.075		0.000		0.000	0.150	
Remarks:												
Total Cost			6.728	4.271		4.466		0.050		0.161	15.676	
Remarks:												

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

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME PU 21980/SACC Automation and AADS/29105			
					SUPPRT ARMS TECH INSERTION			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SACC Milestone III				3Q				

R-1 SHOPPING LIST - Item No. 175/9

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: FEBRUARY 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME 22231/LCU Replacement & DMFD			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	5.496	1.914	1.186	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: LCU Replacement supports development and procurement of a technologically advanced heavy lift utility landing craft to compliment the high speed, over-the-beach, ship-to-shore amphibious lift of the future.</p>								

R-1 SHOPPING LIST - Item No.

175/10

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0204413N/Amphibious Tactical Support Units	PROJECT NUMBER AND NAME 22231/LCU Replacement & DMFD

B. ACCOMPLISHMENTS/PLANNED PROGRAM

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.496	1.914	1.186	0.000
RDT&E Articles Quantity				

LCU:
 Analysis of Alternatives (AoA); Commercial designs (Feasibility & Detail designs); Conduct enabling technologies R&D; Model Testing & Simulations (e.g., beaching, seakeeping, survivability); Government Studies & Technical Support; Shipboard interface & interoperability; DoD 5000 Documentation & Program reviews; Contracting & Evaluation support; Programmatic support; Portion of extramural program reserved for Small business innovation Research assessment in accordance with 15 USC 638.

C. Program Change Summary:

(U) Funding	FY 2002	FY 2003	FY 2004	FY 2005
(U) FY 2003 President's Budget:	5.817	1.976	1.235	0
(U) FY 2004 President's Controls	<u>5.496</u>	<u>1.914</u>	<u>1.186</u>	<u>0</u>
(U) Total Adjustments	-0.321	-0.062	-0.049	0
- (U) Summary of Adjustments:				
FY 2002 SBIR	-0.100	0	0	0
FY 2002 BTR	-0.113	0	0	0
MINOR PRICING ADJUSTMENTS	<u>-0.108</u>	<u>-0.062</u>	<u>-0.049</u>	<u>0</u>
	-0.321	-0.062	-0.049	0

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: FEBRUARY 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME 22231/LCU Replacement & DMFD				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN Line 510000 LCU(R)	0	0	0	28.949	37.562	38.240	38.927	39.629	152.192	335.499
E. ACQUISITION STRATEGY:										
LCU - Feasibility studies will be conducted to determine the best design to meet new Navy requirements for heavy lift utility landing craft and to support a performance specification that will be competitively awarded.										
F. MAJOR PERFORMERS:										
Field Activities & Locations - Work Performed:										
NSWC, Bethesda, MD - System engineering, test and evaluation.										
CNA, Arlington, VA - AoA										
Contractors & Locations - Work Performed:										
Not applicable.										
Universities & Locations - Work Performed										
Not applicable.										

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

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: FEBRUARY 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204413N/Amphibious Tactical Support Units			22231/LCU Replacement & DMFD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WX	NSWC Bethesda, MD				0.200	11/03				0.200	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.200		0.000		0.000	0.200	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	WR	NSWC Bethesda, MD				0.050	11/03				0.050	
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		0.050		0.000		0.000	0.050	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			PE 0204413N/Amphibious Tactical Support Units				22231/LCU Replacement & DMFD					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NSWC Bethesda, MD	0.000	0.644	12/02						0.644	
Operational Test & Evaluation	WX	NSWC Bethesda, MD	0.000			0.050	12/02	0.000		0.000	0.050	
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	0.644		0.050		0.000		0.000	0.694	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NSWC Bethesda, MD		0.970	11/02	0.420	11/02				1.390	
Program management Support	CPFF	Various		0.250	11/02	0.416	11/02				0.666	
Travel				0.050	10/02	0.050	11/02				0.100	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	1.270		0.886		0.000		0.000	2.156	
Remarks:												
Total Cost			0	1.914		1.186		0		0	3.1	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: FEBRUARY 2003										
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME PE 0204413N/Amphibious Tactical Support Units										PROJECT NUMBER AND NAME 22231/LCU Replacement & DMFD													
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones									MS B △																								

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

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

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&BA-7		PROGRAM ELEMENT PE 0204413N/Amphibious Tactical Support Units			PROJECT NUMBER AND NAME 22231/LCU Replacement & DMFD			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AoA Completion	3Q							
Milestone B			1Q					
Contract Award				1Q				

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0204571N Consolidated Training Systems Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	26.048	26.439	21.719	20.184	20.608	15.211	16.384	18.581
21427/22449								
Surface Tactical Team Trainer (STTT)	5.305	8.414	14.676	8.374	5.950	5.749	5.948	6.187
22449								
Shipboard Electronic Attack Trainer (SEAT)	0.967							
29106								
Tactical Communications On-Board Trainer	0.967							
29107								
Link On-Board Trainer	0.977							
S3087								
NSS Training System			0.293	0.392	0.294			
W0604/ Training Range and Instrumentation Development Systems (TRIDS)	3.370	3.065	2.241	2.057	2.144	2.635	2.681	2.728
W3093								
Tactical Combat Training System (TCTS)			2.851	7.862	10.688	4.983	5.878	7.754
W2124								
Air Warfare Training Development (AWTD)	1.942	2.065	1.658	1.499	1.532	1.844	1.877	1.912
X1823								
Training & Modeling Systems (TMS)	12.520	10.552	0.000	0.000	0.000	0.000	0.000	0.000
E9271								
Integrated Training for TACAIR Fleet*		2.343						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*E9271 is a Congressional Add for Integrated Training for TACAIR Fleet. No other details are currently available.

The 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) and High Level Architecture (HLA) protocols. The migration of selected modules of the BFTT software to Windows NT from UNIX OS is underway. BFTT developed the BFTT Electronic Warfare Trainer (BEWT) and applicable BFTT System software to provide EW operator and team training for Fleet EW Systems. The Congressional adds initiate the development of the Electronic Attack training capability for BEWT and develops the Tactical Communication system software interfaces and the BFTT Link Stimulation control software. The Navigation Seamanship and Shiphandling (NSS) Training 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 Training Range and Instrumentation Development Systems (TRIDS) program provides development of many range systems including range electronic warfare simulator, advanced weapons training systems, laser training systems, Tactical Aircrew Combat Training System (TACTS), Large Area Tracking Range (LATR), combat training system improvements and shallow water range technology.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0204571N Consolidated Training Systems Development	
<p>The AWTD program provides development of many aviation training systems including mission rehearsal simulation technologies, and the Aviation Training Technology Integration Facility (ATTIF).</p> <p>The TMS encompasses the requirements analysis and software development associated with the Navy's Maritime Development Agent function as part of the Joint Simulation System (JSIMS). The BFTT will develop the BFTT Electronic Warfare Trainer (BEWT) and applicable BFTT system software to provide EW operator and team training for Fleet EW Systems.</p> <p>The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (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 (spiral) development 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.</p>		

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S3087)				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		8.216*	8.414	14.969**	8.766**	6.244**	5.749	5.948	6.187
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Includes Congressional Plus up funding for: 22449 SEAT; 29106 Tactical Comms OBT; and 29107 Link OBT.

**Includes Re-Engineering Funds Alignment S3087.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Battle Force Tactical Training (BFTT) Program provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) protocols, migrating to High Level Architecture (HLA). 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 BFTT Electronic Warfare Trainer (BEWT) effort provides embedded operator and team electronic emissions recognition training capability, integrated into BFTT. BFTT software modules are being migrated from UNIX/TAC to a Windows-NT/PC Operating System (OS). The Shipboard Electronic Attack Training (SEAT) effort initiates development of the active electronic countermeasures training capability to BEWT and to the BFTT software. The Tactical Communications On-Board Trainer effort modifies the tactical Link communications software to accept training data inputs. The Link On-Board Trainer effort modifies the BFTT operating software to provide control of the Link 4/11/16 Stimulator. NSS Training 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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.579	8.362	9.196	5.714
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

Continue to develop BFTT Link simulation software; develop/integrate new s/w capabilities and system interfaces; develop BG level Display and Debrief software; NTFM integration; BFTT Shore s/w development; Training I/F development for CG47-58 (AEGIS B/L 1 & 2); shock test; debrief s/w development and Fleet Battle Experiments; develop BFTT AIC training for AEGIS; Develop BFTT/TSSS Training on FFG CORTS; CMTpc Integration; Database Architecture & Content Improvements; Common Operating Procedure (COP) for Over The Horizon (OTH) Maritime Data; Common Operating Picture for LAWEX; Fleet Generated Requirements for B/L 2.0/2.1 and Improvements to B/L 2.2 and 2/3; Objective Based Training (Integrated Phase I/II); Readiness Measurement; JSAF Integration into BFTT (1st phase): BFTT-to-Sea (multi-ship demo); database Architecture & Content Improvements; JSAF Modifications for EW (2nd Phase); Database Improvements; AEGIS B/L 7 phase 1C; SQQ-89 Weapons Control; Scenario/Data Management via SIPRNET; Remote Reset of OBTs from BOPC; Improved Data Collection; Integrate Shore Based Aviation Trainers (E-2C, SH-60B, and P3-C). Embedded TBMD Training and JSIMS Integration/engineering will be developed after FY05. All shore based combat system team trainer funding was curtailed in FY94, therefore, BFTT is the Fleets only combat system level team training capability.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.052	0.052	1.680	1.660
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

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.

R-1 SHOPPING LIST - Item No. 176

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)
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B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.674	0.000	0.000	0.000
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

The BFTT High Level Architecture (BFTT HLA) conversion from Distributed Integrated Simulation (DIS) protocols were in FY 02. It was mandated by DOD that the BFTT System be HLA compliant by the end of FY 2002. This compliance enables BFTT Systems to interface and interoperate with all training systems Service-wide.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.967	0.000	0.000	0.000
RDT&E Articles Quantity	N/A	N/A	N/A	NA

Congress appropriated and authorized funding for the initial development of the Shipboard Electronic Attack Trainer (SEAT) capability as part of the BFTT System and BFTT Electronic Warfare Trainer (BEWT). This funding is developing an electronic attack training capability for tactical training by shipboard electronic warfare operators and teams as part of the BFTT Program. There currently is no active EW organic/shipboard proficiency training capability for the AN/SLQ-32A Electronic Warfare System, all training is done at shore-based schools. This effort will provide a cost-effective approach to standardizing active, electronic attack training for operators and teams across the Navy.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.944	0.000	0.000	0.000
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

Congress appropriated and authorized funding for the Link On-Board Trainer (OBT) for the BFTT System. This funding is being used to develop a standardized Tactical Communication On-Board Trainer (OBT) interface and associated software changes required to the Tactical Communication Systems (Link 4A/11/16) and the BFTT System for tactical training by shipboard combat system operators and teams as part of the BFTT Program. This capability will satisfy development of the stimulation/simulation/ onboard training requirement for surface ship Link Systems as part of BFTT, which is a stated requirement in the BFTT Operational Requirements Document (ORD). There currently is no organic/shipboard proficiency training capability for Link Systems (Link 4A/11/16), all training is done at shore-based schools. This effort provides a cost-effective approach to standardizing the Link 4A/11/16 training capability for operators and teams across the Navy.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.000	1.000
RDT&E Articles Quantity	N/A	N/A	N/A	NA

Funding is being provided specifically for TOMAHAWK operator and team training development and integration into BFTT.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.800	0.000
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

This funding supports the R&D efforts associated with the OPN procurement of BFTT for 12 FFG's. The efforts that will be accomplished are software engineering, FFG Combat Direction System Data Extraction (CDS DX) Software development, hardware NRE, software design, engineering, integration and testing, as well as systems engineering.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.293	0.392
RDT&E Articles Quantity	N/A	N/A	N/A	NA

NSS Training 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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	8.568	15.340	20.841	18.822
Current BES/President's Budget:	8.216	8.414	14.969	8.766
Total Adjustments	-0.352	-6.926	-5.872	-10.056
Summary of Adjustments				
Congressional program reductions	0.000			
Congressional undistributed reductions	0.000			
Congressional rescissions	0.000			
SBIR/STTR Transfer	-0.119			
Economic Assumptions	-0.024	-0.086		
Reprogrammings	-0.110	-6.680	-9.068	-10.953
Program Add	0.000	0.000	4.100	1.400
Misc. Reductions/Additions	-0.099	-0.160	-0.904	-0.503
Congressional increases	0.000	0.000	0.000	0.000
Subtotal	-0.352	-6.926	-5.872	-10.056

Schedule:

Not Applicable.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 276200 (Surface BFTT portion only)	40.081	15.922	42.71	39.017	23.294	14.261	0	0	0	350.589

E. 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.

F. MAJOR PERFORMERS:

PHD NSWC, Port Hueneme, CA - BFTT System Engineering, Integration, and Testing.
CDSA Dam Neck, Dam Neck, VA - BFTT Software Development Activity.

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	*	AAI/MD & EWA/WV/ Govworks	11.498							0.000	11.498	11.498
Ancillary Hardware Development	WR	PHD NSWC/Crane/ Govworks	0.999							0.000	0.999	0.999
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	**	CDSA/NSWC Crane/ Govworks	19.551	1.244	01/03	2.736	01/04	1.135	01/05	Continuing	Continuing	N/A
Training Development						0.000		0.000			0.000	
Licenses	WR/RCP	PHD NSWC/CDSA/Crane/ Govworks	2.169	0.173	01/03	1.321	01/04	0.142	01/05	Continuing	Continuing	N/A
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			37.070	1.417		4.057		1.277		Continuing	Continuing	
Remarks: * AAI Contract Award 3/98 CPIF; EWA Contract Award 6/98 CPFF ** WR/RCP/MIPR/IPR												
Development Support											0.000	
Software Development	*	PHD/NAWCTSD/GSA/SPAWAR/ Govworks	37.121	4.878	01/03	7.326	01/04	5.596	01/05	Continuing	Continuing	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	*	PHD NSWC/NAWC TSD/GSA/Crane/ Govworks	8.807	0.850	01/03	1.415	01/04	0.946	01/05	Continuing	Continuing	N/A
GFE											0.000	
Award Fees											0.000	
Subtotal Support			45.928	5.729		8.741		6.542		0.000	66.940	
Remarks: *WR/RCP/MIPR/IPR												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0204571N Consolidated Training Systems Development				21427 Surface Tactical Team Trainer (STTT) (22449/29106/29107/S0387)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	*	Crane/PHD/NAWC/CDSA/Govworks	3.702	0.540	01/03	1.227	01/04	0.426	01/05	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			3.702	0.540		1.227		0.426		Continuing	Continuing	N/A
Remarks: *WR/RCP/MIPR/IPR												
Contractor Engineering Support											0.000	
Government Engineering Support	*	PHD NSWC/GSA/CDSA/Crane/ Govworks	2.679	0.729	01/03	0.944	01/04	0.520	01/05	Continuing	Continuing	N/A
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.679	0.729		0.944		0.520		Continuing	Continuing	N/A
Remarks: *WR/RCP/MIPR/IPR												
Total Cost			89.379	8.414		14.969		8.766		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development										PROJECT NUMBER AND NAME 21427 Surface Tactical Team Trainer (STTT)																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
Acquisition Milestones (Post M/S III)																																					★

R-1 SHOPPING LIST - Item No. 176

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

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME W0604 Training Range and Instrumentation Development (TRID)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	3.370	3.065	2.241	2.057	2.144	2.635	2.681	2.728
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, combat training systems improvements, underwater technology, ranges interoperability and information architecture, shallow water range activity which included establishment of capability at Pacific Missile Range Facility Shallow Water Training Range (PMRF SWTR) 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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W0604 Training Range and Instrumentation Development (TRID)

(U) B. Accomplishments/Planned Program

Large Area Tracking Range (LATR)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.944	1.444	1.071	0.600
RDT&E Articles Quantity				

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. Complete operational test and evaluation and integration of Block 4.0 software 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.

Combat Training Systems Development	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.426	1.621	1.170	1.457
RDT&E Articles Quantity				

Developed additional training capabilities for the Control and Computational Subsystem (CCS), Personal Computer Advanced Display and Debriefing Subsystem (PCADDS), and developed a formalized interface between the CCS and Large Area Tracking Range (LATR). Complete CCS Block 6.0 upgrade. Complete Test Set Upgrade and system rehost. Complete formalization of CCS/LATR integration. Initiate investigation and development of the Common Advanced Display to interface with various Tactical Training Ranges systems.

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0204571N Consolidated Training Systems Development	W0604 Training Range and Instrumentation Development (TRID)			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		3.570	3.141	2.936	2.524
Current BES/President's Budget		3.370	3.065	2.241	2.057
Total Adjustments		-0.200	-0.076	-0.695	-0.467
Summary of Adjustments					
Congressional program reductions			-0.019		
Congressional undistributed reductions					
Congressional rescissions		-0.008			
SBIR/STTR Transfer		-0.053			
Economic Assumptions		-0.009	-0.057	-0.066	-0.051
Reprogrammings		-0.130			
Other Navy/OSD Adjustments				-0.629	-0.416
Congressional increases					
Subtotal		-0.200	-0.076	-0.695	-0.467
(U) Schedule: The following milestones have been added, changed or deleted to better reflect program status:					
	ADDED:	TACTS Upgrade Requests Development 2Q/05 Common Advanced Display Market Survey 3Q/04 Common Advanced Display Specifications Development 3Q/04 Common Advanced Display Production Contract 4Q/05 Test Set Upgrade/Rehost IOC 1Q04/4Q05 Common Advanced Display IOC 4Q/06 Block 5.0 LATR Upgrade IOC 4Q/03			
(U) Technical:	CHANGED:	From:		To:	
N/A		Block 4.0 LATR Upgrade 4Q/03 LATR Multi GIS OT&E 3Q/02 LATR GPS Receiver OT&E 2Q/03 LATR AIDU OT&E 2Q/03		Block 4.0 LATR Upgrade 3Q/03 LATR Multi GIS OT&E 4Q/02 LATR GPS Receiver OT&E 2Q05 LATR AIDU OT&E 2Q/05	

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:		February 2003
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-7			0204571N Consolidated Training Systems Development			W0604 Training Range and Instrumentation Development (TRID)				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Related OPN:	1.542	0.050	0	0	0	0	0	0	Cont.	
Related RDT&E: Not Applicable										
 (U) E. ACQUISITION STRATEGY: *										
<p>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.</p>										

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Trai		W0604 Training Range and Instrumentation Development (TRID)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering and Software Development (Misc. < \$1M)	Various	Various	81.066							0.000	81.066	
Primary Hdw Dev. Electronics	Various	Various	0.450	0.612	1Q/03	0.268	1Q/04	0.078	1Q/05	Continuing	Continuing	
Aircraft Integration	Various	Various	0.107	0.085	1Q/03	0.072	1Q/04	0.036	1Q/05	Continuing	Continuing	
Systems Engineering	Various	Various	0.170	0.096	1Q/03	0.084	1Q/04	0.098	1Q/05	Continuing	Continuing	
Licenses	Various	Various	0.004	0.004	1Q/03					Continuing	Continuing	
Subtotal Product Development			81.797	0.797		0.424		0.212		Continuing	Continuing	
Remarks:												
Development Support (Misc. <\$1M)	Various	Various	6.759	0.338	1Q/03	0.200	1Q/04	0.289	1Q/05	Continuing	Continuing	
Software Dev. Electronics	Various	Various	1.044	0.657	1Q/03	0.442	1Q/04	0.575	1Q/05	Continuing	Continuing	
Integrated Logistics Support	Various	Various	0.070	0.070	1Q/03	0.067	1Q/04	0.070	1Q/05	Continuing	Continuing	
Configuration Management	Various	Various	0.080	0.085	1Q/03	0.054	1Q/04	0.080	1Q/05	Continuing	Continuing	
Technical Data	Various	Various	0.010		1Q/03	0.075	1Q/04			Continuing	Continuing	
Studies & Analysis	Various	Various		0.359	1Q/03	0.100	1Q/04	0.150	1Q/05	Continuing	Continuing	
Subtotal Support			7.963	1.509		0.938		1.164		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

Exhibit R-3, Project Cost Justification
(Exhibit R-3, Page 18 of 47)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Trai		W0604 Training Range and Instrumentation Development (TRID)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (Misc. <\$1M)	Various	Various	3.918	0.187	1Q/03	0.192	1Q/04	0.160	1Q/05	Continuing	Continuing	
Operational Test & Evaluation	Various	Various	0.212	0.168	1Q/03	0.314	1Q/04	0.239	1Q/05	Continuing	Continuing	
Test Assets	Various	Various	0.022	0.076	1Q/03	0.056	1Q/04	0.006	1Q/05	Continuing	Continuing	
Subtotal T&E			4.152	0.431		0.562		0.405		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various	0.125	0.100	1Q/03	0.077	1Q/04	0.076	1Q/05	Continuing	Continuing	
Government Eningeering Support	Various	Various	0.265	0.115	1Q/03	0.124	1Q/04	0.100	1Q/05	Continuing	Continuing	
Program Mangement Support	Various	Various	1.773	0.088	1Q/03	0.091	1Q/04	0.080	1Q/05	Continuing	Continuing	
Travel	Various	Various	0.020	0.025	1Q/03	0.025	1Q/04	0.020	1Q/05	Continuing	Continuing	
SBIR Assessment			0.053							0.000	0.053	
Subtotal Management			2.236	0.328		0.317		0.276		Continuing	Continuing	
Remarks:												
Total Cost			96.148	3.065		2.241		2.057		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 19 of 47)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development			PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			2.851	7.862	10.688	4.983	5.878	7.754
RDT&E Articles Qty								

(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 (spiral) development 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.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)
-------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------------------------------------------

B. Accomplishments/Planned Program

Tactical Combat Training System	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.851	7.862
RDT&E Articles Quantity				4

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) Aircraft Instrumentation System (Internal) (AIS). 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 AISI and for fielding the TCTS system aboard deployed carriers.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development	PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)
-------------------------------------------------------------	---------------------------------------------------------------------------------------	-------------------------------------------------------------------------

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:			0.000	0.000
Current BES/President's Budget			2.851	7.862
Total Adjustments			2.851	7.862

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions			-0.091	-0.415
Reprogrammings				
Other Navy/OSD Adjustments			2.942	8.277
Congressional increases				
Subtotal			2.851	7.862

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

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CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0204571N Consolidated Trai		W3093 Tactical Combat Training System (TCTS)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hdw Dev. Electronics	CPFF	TBD				1.783	1Q/04	2.475	1Q/05	Continuing	Continuing	
Subtotal Product Development						1.783		2.475		Continuing	Continuing	
Remarks:												
Software Dev. Electronics	CPFF	TBD						1.637	1Q/05	Continuing	Continuing	
Integrated Logistics Support	Various	Various				0.230	1Q/04	0.390	1Q/05	Continuing	Continuing	
Subtotal Support						0.230		2.027		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

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CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0204571N Consolidated Train		PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (Misc. <\$1M)	WX	NAWC-AD PR				0.082	1Q/04	1.723	1Q/05	Continuing	Continuing	
Test Assets										Continuing	Continuing	
Subtotal T&E						0.082		1.723		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	CPFF	TBD				0.042	1Q/4Q					
Government Engineering Support	N/A	NAWC-AD PR				0.399	1Q/04	0.775	1Q/05	Continuing	Continuing	
Program Mangement Support	N/A	NAWC-AD PR				0.250	1Q/04	0.790	1Q/05	Continuing	Continuing	
Travel	N/A	NAWC-AD PR				0.065	1Q/04	0.072	1Q/05	Continuing	Continuing	
Subtotal Management						0.756		1.637		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		2.851		7.862		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0204571N Consolidated Training Systems Development										PROJECT NUMBER AND NAME W3093 Tactical Combat Training System (TCTS)												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Instrumentation Development																																
F/A-18 IS																																
Rotary Wing RS																																
Ground System Dev																																
Track Interface																																
Remote User Int																																
CGTS Development																																
Fixed Range Integration																																
Test & Evaluation Milestones																																
NDI FAAT (DT/OT III)																																
AISI DT/OT II																																
CGTS DT/OT II																																
Production Milestones																																
Lot 1 FY 04																																
Lot 2 FY 05																																
LRIP AISI																																
Lot 3 FY 06/07																																
Lot 4 FY 07																																
Deployments																																
IOC																																
FOC																																

R-1 SHOPPING LIST - Item No. 176

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development			PROJECT NUMBER AND NAME W2124/Air Warfare Training Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	1.942	2.065	1.658	1.499	1.532	1.844	1.877	1.912
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 directly support the Navy and Marine Corps Aviation Simulation Master Plans (ACAT IVM programs), 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 transportable, modular, High Level Architecture (HLA) compliant, high fidelity Distributed Mission Training (DMT) and mission rehearsal capabilities. 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: DMT weapons server, high resolution helmet mounted, and/or flat panel displays, photographic quality image generation, advanced environmental effects models, radar/infra-red/electro-optic and acoustic sensor simulations; 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 computer generated forces (CGF) 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 technology before it is fielded. Debrief and intelligent training support tools are focused on human performance enhancements for Fleet readiness exercises.

These technologies will both lower total ownership costs of the training systems, and through technology infusion, increase fleet readiness by enhancing overall system fidelity to the projected operating environments.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.562	0.680	0.874	0.817
RDT&E Articles Quantity				

Develop and integrate (ATTIF) modular architecture components for intelligent wingman, E-2C crew station, intelligent synthetic forces, and tactical communications. Demonstrate low-cost training DMT configurations, while maintaining or increasing fidelity. Demonstrate low cost training and mission rehearsal configurations and evaluate medium fidelity cockpits. Demonstrate low cost Intelligent Training Support Tools (ITST), and evaluate rapid scenario generation tools w/measures of performance (MOP) capability. Analyze, develop, integrate modular components for cockpit avionics, tactical aircraft intelligent agents, (friend/foe), intelligent wingman, E-2C, intelligent synthetic forces and support tools.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.538	0.481	0.441	0.427
RDT&E Articles Quantity				

Integrated Forward Looking Infra-Red (FLIR) sensor simulation with sensor host. Demonstrate ability to input variables that affect FLIR imagery, analyze mission rehearsal database interoperability, tool requirements, and analyze/specify cost effective mission rehearsal database interoperability.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.283	0.758	0.200	0.255
RDT&E Articles Quantity				

Developed/specified applications for texture storage, and database material encoding for PC-based image generators (IGs).
 Develop applications for real-time shadows on PC video cards, and a software-only application that requires no graphics hardware acceleration to implement simulation features.
 Develop applications for texture storage, volumetric weather on PC image generators.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development		
B. Accomplishments/Planned Program (Cont.)				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.559	0.146	0.143	0.000
RDT&E Articles Quantity				
<p>Upgraded and specified common Instructor Operating Station (IOS) designs to include ITST. Analyze, develop, and integrate (ATTIF) modular architecture components for F/A-18 cockpit avionics, intelligent wingman, E-2C, and intelligent synthetic forces. Upgrade common IOS interface to the Joint Mission Planning System (JMPS) characteristics for mission planning, and for the Navy Aviation Simulation Master Plan (NASMP) debrief tools.</p>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204571N/Consolidated Training Systems Development	W2124/Air Warfare Training Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	1.887	2.115	2.163	1.832
Current BES/President's Budget	1.942	2.065	1.658	1.499
Total Adjustments	0.055	-0.050	-0.505	-0.333

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.012		
Congressional rescissions	-0.004			
SBIR/STTR Transfer	-0.023			
Economic Assumptions	-0.005	-0.038	-0.043	-0.035
Sponsor/FMB/NAVAIR Adj.				
Reprogrammings	0.087			
Congressional increases				
Other Navy/OSD Adjustments			-0.462	-0.298
Subtotal	0.055	-0.050	-0.505	-0.333

Schedule:

Modular Architecture for the NASMP Threat Server will slip from FY04 to FY05.
 Modular Architecture for the NASMP Environmental Server will slip from FY05 to FY06.
 The ITST upgrades for NASMP will slip from FY06 to FY07.

Technical: Not applicable.

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME W2124/Air Warfare Training Development
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN Line 48 BA-7 (47C2) Commond Ground Equi (USMC Aviation Simulation Master Plan)	0.387	22.078	6.250	0.000	19.950	3.200	0.000	6.900		
APN Line 33 BA-7 (47C2) Commond Ground Equipment (Fleet Aircrew Simulator Training (FAST) Plan)		59.399	31.009	70.872	96.949	58.216	58.409	59.038		

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, working closely with the Navy and Marine Corps Aviation Simulation Master Plans. A true, multidisciplinary Integrated Product Team (IPT) approach is utilized through a combination of reimburseable and direct cite/MIPR contract processes to accomplish the IPT's principal objectives.

F. MAJOR PERFORMERS:

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204571N/Consolidated Training Systems Development			W2124/Air Warfare Training Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	Air Force Research Lab	1.905	0.470	01/03	0.441	01/04	0.400	01/05	Continuing	Continuing	
Systems Engineering	WX&WR	NAWCTSD, NAMRL	3.818	0.730	01/03	0.690	01/04	0.495	01/05	Continuing	Continuing	
Systems Engineering	MIPR	ONR	0.120								0.120	
Systems Engineering	WX	NAWC-WD	0.753								0.753	
Systems Engineering	MIPR	US AF ACADEMY	0.040								0.040	
Systems Engineering	WR	NPGS	0.090								0.090	
Subtotal Product Development			6.726	1.200		1.131		0.895		Continuing	Continuing	
Remarks:												
Trainer Development Support	RX	NAWC-AD	0.539	0.130	01/03	0.135	01/04	0.135	01/05	Continuing	Continuing	
Subtotal Support			0.539	0.130		0.135		0.135		Continuing	Continuing	
Remarks: N/A												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204571N/Consolidated Training Systems Development			W2124/Air Warfare Training Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD	3.165	0.700	01/03	0.369	01/04	0.456	01/05	Continuing	Continuing	
Developmental Test & Evaluation	WX	NCTAMSLANT	0.564								0.564	
Subtotal T&E			3.729	0.700		0.369		0.456		Continuing	Continuing	
Remarks:												
Travel	WX	NAWC-WD	0.112	0.035	01/03	0.023	01/04	0.013	01/05	Continuing	Continuing	
Subtotal Management			0.112	0.035		0.023		0.013		Continuing	Continuing	
Remarks:												
Total Cost			11.106	2.065		1.658		1.499		Continuing	Continuing	
Remarks:												

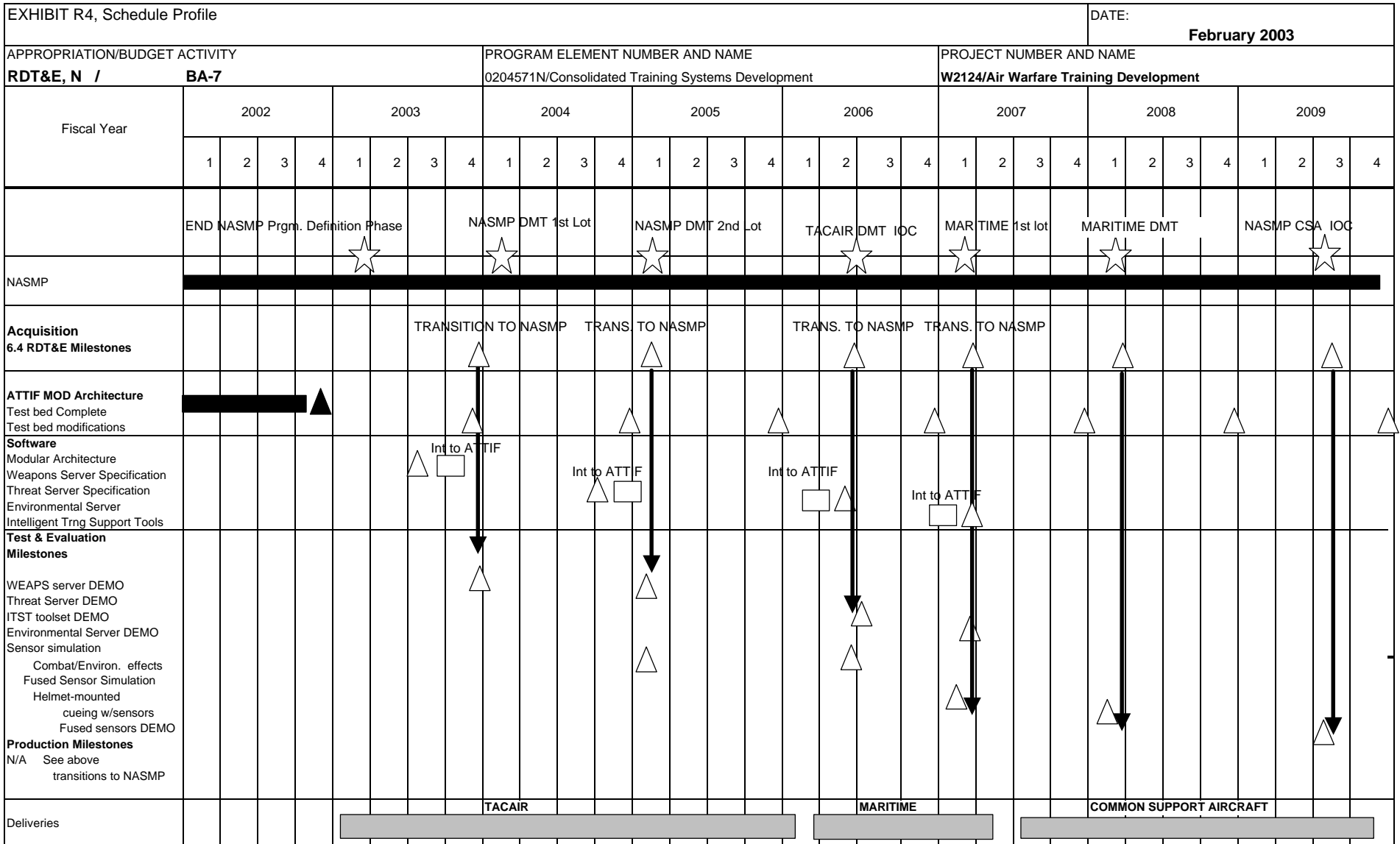
R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 38 of 47)

UNCLASSIFIED

CLASSIFICATION:



R-1 SHOPPING LIST - Item No. 176

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification										DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development					PROJECT NUMBER AND NAME X1823/Training & Modeling Systems (TMS)			
COST (\$ in Millions)	Total Pys	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost	44.196	12.519	10.552	0.000	0.000	0.000	0.000	0.000	0.000	0.000	67.267
RDT&E Articles Qty											

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

Employing naval forces in multi-dimensional warfare is a complex operational problem. Naval staffs must be prepared to operate either as an integral part of a Joint Force, or as separate Naval units. To counter the threat expected in hostile environments, naval officer training must cover all mission areas on a real-time basis at the Joint Staff as well as Battle Force/Group levels. Focus must be on tactical decision-making, tactics development/evaluation, and operational planning and execution. Shore-based classroom training and at-sea exercises have historically satisfied the Battle Group tactical training requirement. However, the effectiveness of this approach to training was reduced by the lack of a real-time decision-making environment during shore-based training and the reduction in number and scope of at-sea exercises. This requirement is fulfilled by the Joint Simulation System (JSIMS), which will replace the legacy Research, Engineering and Systems Analysis System (RESA), and the legacy Enhanced Naval Warfare Gaming System (ENWGS).

The mission of JSIMS is to provide a readily available, operationally valid synthetic environment for the Commanders-in-Chief (CINCs), their components, other Joint organizations and the Services to: Jointly train, educate, develop doctrine and tactics, formulate and assess operational plans, assess war fighting situations, define operational requirements, and provide operational inputs to the acquisition process. In short, JSIMS will provide not only an improved certified capability for inter-Service operability but also an enhanced Joint Battle Staff training capability for the war fighting CINCs. All service Executive Agents (EAs) and Development Agents (DAs) are required to contribute to the initial population of the JSIMS architecture with facilities, services and tools, to meet an Initial Operating capability for Joint Task Force training of September 2005. Because the Services/components are best able to define their own capabilities and functionality, the JSIMS Alliance Executive Office (AEO) is working in concert with the Services to integrate Service-provided functionality into JSIMS for use in Joint and service exercises.

In June 1994 the Services and Director, Joint Program Office signed a Memorandum of Agreement (MOA) to establish JSIMS, a critical next-generation Modeling and Simulation (M&S) system. That framework provides a balanced melding of live, virtual and constructive M&S representations, with Command, Control, Communications, Computers and Intelligence (C4I) fully supported, and interfaces using real-world equipment. As the Maritime Warfare EA, OPNAV N7, on 29 August 1995, assigned NAVSEA as the JSIMS Maritime Development Agent (DA). JSIMS Maritime is developing the Maritime Mission Space Objects for the JSIMS Program, as well as selected portions of the core infrastructure and services. The objective of the JSIMS Maritime portion of the JSIMS Program is to interface with JSIMS and enable Naval senior staffs, and Naval components of Joint staffs, train at all levels of command, in all warfare areas, including joint and service specific training. JSIMS was transferred from NAVSEA to SPAWAR PD13 at the beginning of FY 1999. Due to a reorganization at SPAWAR, the JSIMS-M Program now resides in PD15. On 16 December 1999, USD (AT&L) directed that JSIMS be reorganized per the recommendations made by the JSIMS Senior Review Board, detailed in a 19 November 1999 memorandum. Specifically, JSIMS was directed to convert system architecture to the High-Level Architecture (HLA) standard, establish a JSIMS Alliance Executive Office, develop a new Acquisition Program Baseline (APB), and transfer Program Executive Office (PEO) responsibilities from Air Force to Army. USD (AT&L) has also designated JSIMS as an ACAT-1D program. By end 2001, JSIMS adopted a Block spiral development structure, with software versions, version releases and engineering release milestones numbered commonly. E.g., Block 1 contains work on software Version 1.0, to be released at Version Release Milestone 1 (VRM 1) in Q4, FY2002. Each Block was to have separate acquisition milestone reviews.

By PDM1, 12 Dec 02, OSD deleted funding from this Navy program for years FY04-FY09.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME X1823/Training & Modeling Systems (TMS)

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.183	1.461	0.000	0.000
RDT&E Articles Quantity				

FY02: Provided Maritime Content Library, Data Management Tool, and Data Element Description Document for JSIMS Version 1.0. Provided metadata and battlespace data for Maritime Federate for associated Alliance Integration Events. Provided operational support for associated functional verification tests and user events.

FY03: Supported expanded Validation Events for Version 1.0.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.585	2.978	0.000	0.000
RDT&E Articles Quantity				

FY02: Began requirements analysis and defined design requirements for Maritime Federate development of JSIMS Version 2.0. Began development of model expositions for Maritime Domain scripted missions and model representations for JSIMS Version 2.0. Provided operational support for associated functional verification tests and user events.

FY03: Supported expanded Validation Events for Version 1.0.

R-1 SHOPPING LIST - Item No. 176

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME X1823/Training & Modeling Systems (TMS)		
(U) B. Accomplishments/Planned Program (Cont.)				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.052	3.536	0.000	0.000
RDT&E Articles Quantity				
<p>FY02: Provided unit-tested Maritime Federate and master track processor software for JSIMS Version 1.0</p> <p>FY03: Supported expanded Validation Events for Version 1.0.</p>				
Accomplishments/Effort/Subtotal Cost	4.699	2.577	0.000	0.000
RDT&E Articles Quantity				
<p>FY02: Provided engineering verification test (EVT) results for Maritime Federate software for JSIMS Version 1.0. Began to plan functional verification testing for Maritime Federate software for Version 2.0. Delivered assigned software products to support Maritime workstation displays and interactive controls to the Common Component Workstation Developer. Provided operational support for JSIMS Alliance integration/system test and user events. Conducted requirements analysis for Maritime workstation for Version Release 2.0. This resource level increased due to the application of \$1.637M BTR for Common Component Workstation development and system validation efforts.</p> <p>FY03: Supported expanded Validation Events for Version 1.0.</p>				

R-1 SHOPPING LIST - Item No. 176

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																																																																	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development	PROJECT NUMBER AND NAME X1823/Training & Modeling Systems (TMS)																																																																																		
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>President's Budget:</td> <td style="text-align: right;">11.308</td> <td style="text-align: right;">10.825</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;">12.519</td> <td style="text-align: right;">10.552</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">1.211</td> <td style="text-align: right; border-top: 1px solid black;">-0.273</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> </tr> <tr> <td colspan="5" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 40px;">Section 8123: Management Reform Initiative</td> <td style="text-align: right;">-0.100</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">FY 2002 SBIR Assessment</td> <td style="text-align: right;">-0.041</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Joint Simulation System (JSIMS) BTR</td> <td style="text-align: right;">1.637</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Sec. 313, PL 107-206: Revised Economic Assumptions</td> <td style="text-align: right;">-0.024</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Sec. 8100 Business Process Reform</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-0.043</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Sec. 8135 Economic Assumptions</td> <td style="text-align: right;">-0.035</td> <td style="text-align: right;">-0.061</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Sec. 8109 IT Cost Growth</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-0.020</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Sec. 8029 FY03 FFRDC reduction, P.L. 107-248</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-0.012</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Miscellaneous Navy Adjustments</td> <td style="text-align: right;">-0.226</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Miscellaneous Department Adjustments</td> <td style="text-align: right;">-</td> <td style="text-align: right;">-0.137</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">1.211</td> <td style="text-align: right; border-top: 1px solid black;">-0.273</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> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule:</p> <p style="margin-left: 40px;">JSIMS Block 1, leading to Version Release Milestone 1.0, slipped 6 months to Dec 2002. By PDM1, 12 Dec 02, OSD deleted funding from this Navy Program, FY04-FY09.</p> <p style="margin-top: 20px;">(U) Technical:</p> <p style="margin-left: 40px;">Not Applicable</p>					Funding:	FY 2002	FY 2003	FY 2004	FY 2005	President's Budget:	11.308	10.825	0.000	0.000	Current BES/President's Budget	12.519	10.552	0.000	0.000	Total Adjustments	1.211	-0.273	0.000	0.000	Summary of Adjustments					Section 8123: Management Reform Initiative	-0.100				FY 2002 SBIR Assessment	-0.041				Joint Simulation System (JSIMS) BTR	1.637				Sec. 313, PL 107-206: Revised Economic Assumptions	-0.024				Sec. 8100 Business Process Reform	-	-0.043			Sec. 8135 Economic Assumptions	-0.035	-0.061			Sec. 8109 IT Cost Growth	-	-0.020			Sec. 8029 FY03 FFRDC reduction, P.L. 107-248	-	-0.012			Miscellaneous Navy Adjustments	-0.226				Miscellaneous Department Adjustments	-	-0.137			Subtotal	1.211	-0.273	0.000	0.000
Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																																																																
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0204571N/Consolidated Training Systems Development				PROJECT NUMBER AND NAME X1823/Training & Modeling Systems (TMS)			
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI: 2760 / Other SPAWAR Training	1.754	0.980	0.000	0.000	0.000	0.000	0.000	0.000		
E. ACQUISITION STRATEGY: *										
<p>The JSIMS joint program adopted an Integrated Product Team approach, which includes members of the Integration and Development contractor, Alliance Executive Office, USJFCOM Joint Warfighting Center, Development Agents, and other supporting staff and agencies to better organize, coordinate, and support overall JSIMS development effort. JSIMS-M uses Working Groups and Integrated Project Teams (IPT), overseen by SPAWAR PMW 153, to estimate necessary resources (primarily software developers) and associated strategies to present to the sponsor (CNO N79) for approval.</p> <p>JSIMS-M uses a Navy laboratory as its lead developer. JSIMS is using an evolutionary development approach allowing for new and enhanced requirements to be built into subsequent version releases. This method of development allows for incorporation of new requirements and technology through separate iterations giving the user maximum flexibility to ensure each increment captures the latest user priorities, and avoids changes to the ongoing work. The contract(s) supporting JSIMS Maritime development are solicited as multiple-award, IDIQ contract(s) with CPFF pricing in order to adequately address risk to the Government and to ensure a fair and practical risk distribution between the Government and the contractors. This multiple-award scenario was chosen to maintain competition throughout the life of the procurement and to provide contractors with an incentive to lower costs and increase quality. The procurements for COTS hardware for Maritime will be acquired prior to user sites' utilization of JSIMS. Hardware will be acquired from Tier One vendors, using GSA or omnibus sources, and thus should possess inherently high reliability.</p> <p>While there is no prime development contract within JSIMS-M, there are several development engineering support contracts, none larger than about \$5.0M per year. A Navy Working Capital Fund Activity, the SPAWAR Systems Center San Diego, CA, acts a lead developer, and provides developmental engineering support and reimbursable labor for key positions in the JSIMS-M management structure, most notably the System Engineer and various IPT leads. Various types of contracts are used.</p>										
* Not required for Budget Activities 1,2,3, and 6										

R-1 SHOPPING LIST - Item No. 176

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204571N/Consolidated Training Systems Development			X1823/Training & Modeling Systems (TMS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR/RCP	VARIOUS	10.059	2.248	VARIOUS						12.307	
Licenses	WR	SSCSD, CA	0.536								0.536	
Software Development	WR/RCP	VARIOUS	7.160	3.156	VARIOUS						10.316	
Software Development	WR	SSCSD, CA	21.303	1.210	10/02						22.513	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			39.058	6.614		0.000		0.000			45.672	
Remarks:												
Technical Data	WR	SSCSD, CA	3.525	0.654	10/02						4.179	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			3.525	0.654		0.000		0.000			4.179	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0204571N/Consolidated Training Systems Development			X1823/Training & Modeling Systems (TMS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/RCP	VARIOUS	4.738	1.031	VARIOUS							
Development Test & Evaluation	N/A	SSCSD, CA	0.962	0.688	10/02							
Operational Test & Evaluation	WR/RCP	VARIOUS	0.392	0.203	VARIOUS							
Subtotal T&E			6.092	1.922		0.000		0.000				
Remarks:												
Contractor Engineering Support	WR/RCP	VARIOUS	5.069	0.940	VARIOUS							
Government Engineering Support	WR	SSCSD, CA	2.746	0.357	10/02							
Travel	WR/RCP	SPAWAR	0.225	0.065	VARIOUS							
Subtotal Management			8.040	1.362								
Remarks:												
Total Cost			56.715	10.552		0.000		0.000				
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE PE 0204574N Advanced Cryptologic Systems Engineering					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	0.000	0.000	0.000	1.466	1.468	1.470	1.469	1.469	1.469	Continuing	Continuing
X3091 / Advanced Cryptologic Systems Engineering				1.466	1.468	1.470	1.469	1.469	1.469	Continuing	Continuing
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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&E will provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline to meet emergent requirements.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under BA-7, OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing operational systems.</p>											

R-1 SHOPPING LIST - Item No. 177

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 9)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Advanced Cryptologic Systems Engineering				PROJECT NUMBER AND NAME X3091 / Advanced Cryptologic Systems Engineering					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost				1.466	1.468	1.470	1.469	1.469	1.469	Continuing	Continuing
RDT&E Articles Qty											0

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

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&E will provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline to meet emergent requirements.

R-1 SHOPPING LIST - Item No. 177

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Advanced Cryptologic Systems Engineering	PROJECT NUMBER AND NAME X3091 / Advanced Cryptologic Systems Engineering		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.466	1.468
RDT&E Articles Quantity				
<p>Cryptologic Carry-On Equipment FY04 - 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. FY05 - 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.</p>				

R-1 SHOPPING LIST - Item No. 177

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Advanced Cryptologic Systems Engineering	PROJECT NUMBER AND NAME X3091 / Advanced Cryptologic Systems Engineering
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	0.000	0.000	1.466	1.468
Total Adjustments	0.000	0.000	0.000	0.000

Summary of Adjustments

Claimacy Transfer: NSMA to SPAWAR				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings				
Congressional increases				
Subtotal	0.000	0.000	0.000	0.000

(U) Schedule:

(U) Technical:

R-1 SHOPPING LIST - Item No. 177

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0204574N Advanced Cryptologic Systems Engineerin	PROJECT NUMBER AND NAME X3091 / Advanced Cryptologic Systems Engineering
-------------------------------------------------------------	----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN Line 3501	14.707	20.287	18.678	20.277	19.917	21.387	21.867	21.766	Continuing	Continuing

(U) E. ACQUISITION STRATEGY:

Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to SSC-Charleston, SSC-San Diego and miscellaneous contractors, with management oversight by SPAWAR.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204574N Advanced Cryptologic Systems Engineering			X3091 / Advanced Cryptologic Systems Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various				0.296	12/03	0.293	12/04	Continuing	Continuing	Continuing
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various				0.200	12/03	0.200	12/04	Continuing	Continuing	Continuing
Training Development	Various	Various				0.125	12/03	0.125	12/04	Continuing	Continuing	Continuing
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.621		0.618		Continuing	Continuing	Continuing
Remarks:												
Development Support											0.000	
Software Development	Various	Various				0.620	12/03	0.625	12/04	Continuing	Continuing	Continuing
Integrated Logistics Support										Continuing	Continuing	Continuing
Configuration Management										Continuing	Continuing	Continuing
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.620		0.625		Continuing	Continuing	Continuing
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0204574N Advanced Cryptologic Systems Engineering			X3091 / Advanced Cryptologic Systems Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation						0.060	12/03	0.060	12/04	Continuing	Continuing	Continuing
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets						0.040	12/03	0.040	12/04	Continuing	Continuing	Continuing
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.100		0.100		0.000	0.200	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support						0.125	12/03	0.125	12/04	Continuing	Continuing	Continuing
Travel										Continuing	Continuing	Continuing
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.125		0.125		0.000	0.250	
Remarks:												
Total Cost			0.000	0.000		1.466		1.468		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 177

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 9)

Exhibit R-2, RDT&E Budget Item Justification									Date: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N /7					R-1 ITEM NOMENCLATURE 0204575N Information Warfare					
COST (\$ in Millions)	FY 02	FY 03	FY 04	FY05	FY 06	FY 07	FY 08	FY 09	Cost to Complete	Total Cost
Information Warfare/Z2263	4.411	14.789	11.678	12.201	9.944	8.849	9.015	9.179	Cont.	Cont.
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-----	-----
A. Mission Description and Budget Item Justification										
<p>The Naval Information Warfare Activity (NIWA) serves as the Program Manager for the Offensive Information Warfare (IW) program. As such, NIWA is tasked as the Navy's principal technical agent to research, assess, develop, and prototype IW capabilities. The key focus is to provide tactical commanders with both an IW Mission Planning, Analysis and Command and Control Targeting System (IMPACTS) tool and state-of-the-art Electronic Attack (EA) hardware and software. This project will continue with the development and integration of EA systems (e.g., USQ-146) onto various platforms through the out-years. Ongoing software efforts are to identify and develop IW planning and execution tools, as well as computer network operations capabilities. In addition, NIWA is responsible for the 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.</p>										
B. Program Change Summary:										
	FY02	FY03	FY04	FY05						
PB03	4.6	6.2	6.7	7.2						
PB04	4.4	14.8	11.7	12.2						
Total Adjustments	-0.2	+8.6	+5.0	+5.0						
Cost of War		+9.0								
Inflation/Misc. Adjustments		-0.4	-0.3	0.0						
Sponsor Adjustment			+1.4	+1.1						
Transfer to Project Z2462			+3.9	+3.9						
<p>Sponsor adjustment is for NVACM – Navy Vulnerability Assessment Countermeasures FY04/05 funds to be transferred to project Z2462 in 2QFY03</p>										

Exhibit R-2a, RDT&E Project Justification

Date: February 2003

APPROPRIATION/BUDGET ACTIVITY RDT&E,N /7		PROGRAM ELEMENT 0204575N			PROJECT NAME AND NUMBER Information Warfare/Z2263					
Cost (\$ in Millions)	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	Cost to Complete	Total Cost
Project Cost	4.411	14.789	11.678	12.201	9.944	8.849	9.015	9.179	Cont.	Cont.
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-----	-----

A. Mission Description and Budget Item Justification:

The Naval Information Warfare Activity (NIWA) serves as the Program Manager for the Offensive Information Warfare (IW) program. As such, NIWA is tasked as the Navy's principal technical agent to research, assess, develop, and prototype IW capabilities. The key focus is to provide tactical commanders with both an IW Mission Planning, Analysis and Command and Control Targeting System (IMPACTS) tool and state-of-the-art Electronic Attack (EA) hardware and software. This project will continue with the development and integration of EA systems (e.g., USQ-146) onto various platforms through the out-years. Ongoing software efforts are to identify and develop IW planning and execution tools, as well as computer network operations capabilities. In addition, NIWA is responsible for the 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.

B. Accomplishments/Planned Program

Cost (\$ in Millions)	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
IMPACTS	3.1	2.8	2.8	2.8
Electronic Attack	1.3	10.1	1.0	1.5
Computer Net Operations	0.0	1.5	1.5	1.5
Navy IO	0.0	0.0	0.7	0.7
Program Office Support	0.0	0.4	0.4	0.4
NVACM	0.0	0.0	1.4	1.4
Transfer to Z2462			3.9	3.9

IMPACTS: Convert IMPACTS/GCCS-M software (e.g., RFMP and CM+) operating system formats and support laboratory and shipboard tests of converted software. Continue transition to PC based software in addition to current, UNIX based Graphical User Interface (GUI). Institute a Federated Object Model (FOM) into all IW mission planning support software. Initiate/expand inclusion of EMPIRE, RFMP, C2WC, CM+ into Mission Planning Manager.

Electronic Attack: Continued design of EA systems (e.g., USQ-146) for integration onto various platforms. The program has also provided carry-on Electronic Support Measures (ESM) systems for deploying battle groups, supported USMC Mobile Electronic Warfare System (MEWS) evaluation and adoption of USQ-146 and (Joint Special Operations Command) JSOC evaluation of modified USQ-146 in a helicopter.

Computer Network Operations: Provide manpower, operational command and control, operating funds and state of the art computer hardware and

software to rapidly integrate Computer Network Operations (CNO) concepts and capabilities into Navy fleet and shore operations.

Navy Information Operations (IO), Architecture, Training and Data Management: Provides focus in 3 primary functional areas of IO: Electronic Warfare (EW); Computer Network Operations (CNO); and Perception Management (PM). The timely development of the Navy IO architecture is key to the alignment of Navy IO with Fleet Operational requirements and the Navy Strategic Planning Guidance (NSPG).

Navy Vulnerability Assessment Counter-Measures program (NVACM): Assesses information systems in the design phase to ensure security confidence/integrity of fielded capabilities. This primarily includes: Automated Vulnerability Analysis Support Tool (AVAST) development and implementation and mobile computing vulnerability assessment tools.

C. Other Program Funding Summary

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>To Complete</u>	<u>Total Cost</u>
OMN Line 4A6M			0.4	1.0	1.0	1.0	1.0	1.0		
OMN Line 4B7N	2.2	2.3	2.5	2.6	2.7	2.8	2.8	2.9	CONT.	CONT.
OPN 234000/6	2.9	4.7	4.2	4.0	3.9	4.0	4.1	4.2	CONT.	CONT.

D. Acquisition Strategy: N/A.

E.. Major Performers:

SAIC – Arlington, VA	IW Mission Planning, Analysis and Command and Control Targeting System Integration (IMPACTS)
Naval Air Warfare Center – China Lake	Electronic Attack system integration and development
SPAWAR Systems Center – Charleston	Electronic Attack system integration and development
SPAWAR Systems Center – San Diego	Electronic Attack system integration and development
Rockwell International - Cedar rapids, IA	Electronic Attack system integration and development
Argon Engineering – Fairfax, VA	Electronic Attack system integration and development

Exhibit R-3 Cost Analysis										Date: February 2003		
RDT&E,N/7				Program Element: 0204575N						Information Warfare/Z2263		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY03 Cost	FY03 Award Date	FY04 Cost	FY04 Award Date	FY05 Cost	FY05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Var	Var	0.996	8.734	Var	2.049	Var	2.242	Var	Cont.	Cont.	
Subtotal Product Development			0.996	8.734	Var	2.049	Var	2.242	Var	Cont.	Cont.	
Development Support	Var	Var	1.079	1.905	Var	1.979	Var	2.034	Var	Cont.	Cont.	
Software Development	Var	Var	1.901	2.000	Var	2.000	Var	2.100	Var	Cont.	Cont.	
Subtotal Support			2.980	3.905	Var	3.979	Var	4.134	Var	Cont.	Cont.	
Remarks												

Exhibit R-3 Cost Analysis										Date: February 2003		
RDT&E,N/7			Program Element: 0204575N							INFORMATION WARFARE/Z2263		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY03 Cost	FY03 Award Date	FY04 Cost	FY04 Award Date	FY05 Cost	FY05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Var	Var	0.000	0.400	Var	0.650	Var	0.700	Var	Cont.	Cont.	
Subtotal T&E			0.000	0.400	Var	0.650	Var	0.700	Var	Cont.	Cont.	
Remarks												
AIS Support	Var	Var	0.000	0.150	Var	0.100	Var	0.100	Var	Cont.	Cont.	
Government Engineering Support	Var	Var	0.185	0.750	Var	0.450	Var	0.525	Var	Cont.	Cont.	
Program Management Support	Var	Var	0.250	0.850	Var	0.550	Var	0.600	Var	Cont.	Cont.	
Subtotal Management			0.435	1.750	Var	1.100	Var	1.225	Var	Cont.	Cont.	
Transfer to Z2462						3.900		3.900				
Remarks												
Total Cost			4.411	14.789	Var	11.678	Var	12.201	Var	Cont.	Cont.	
Remarks												

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0205601N HARM Improvement			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	31.016	60.263	49.381	132.290	116.729	131.322	82.500	28.832
A1780 HARM Improvement	11.592	3.807	2.013	1.749	3.697	3.706	3.828	3.839
A2185 Adv. Anti-Radiation Guided Missile (AARGM)	18.200	47.531	28.739	53.553	67.409	91.180	41.206	
A2211 Common Missile*	1.224	7.950	13.904	59.614	33.090	36.436	37.466	24.993
A3056 Direct Attack Guided Rocket (DAGR)/APKWS			4.725	12.536	12.533			
A3057 Common Defense System				4.838				
A9272 Low Cost High Temp Material		0.975						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds: \$14.7 million in FY 2002 for AARGM risk reduction efforts and producibility enhancements, less Congressional undistributed reductions; \$1.0 million in FY 2003 for Low Cost High Temperature Material for Radome and Antennas, less Congressional undistributed reductions.

(U) **HIGH-SPEED ANTI-RADIATION (HARM) IMPROVEMENT:** The International HARM Upgrade Program (IHUP) (Block IIIB/VI) is a tri-national Precision Navigation Unit (PNU) cooperative program consisting of a USN-unique tactical software upgrade and a hardware upgrade which includes an Inertial Measurement Unit (IMU) and a Global Positioning System (GPS) receiver. This upgrade will provide a much improved guidance capability for the current AGM-88B missile (in German and Italian inventories) and AGM-88C missile (in U.S. inventory). This IMU/GPS System will be retrofitted into existing missiles, as a kit. 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 a Phase III Small Business Innovative Research (SBIR) program designed to develop and demonstrate an advanced multi-mode seeker to the AGM-88 HARM. A2983/Quick Bolt (QB) is an Advanced Concept Technology Demonstration (ACTD) of Joint-suppression of Enemy Air Defense (J SEAD) technology enhancements applicable to AARGM. An AARGM System Development and Demonstration (SD&D) will commence in FY03. The AARGM program plans production of 1,750 missiles (60) Low Rate Initial Production (LRIP) and 1,690 Full Rate Production modification kit(s).

*Previously referred to as Modernized Hellfire.

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0205601N HARM Improvement
<p>(U) COMMON MISSILE (CM): Army lead joint service program to replace the aging legacy TOW, Maverick, and Hellfire missiles with a single multi-role weapon, IAW approved Navy, Army and Marine Corps mission needs statement for future multi-role precision guided weapons. The Department of the Navy (DoN) has a Memorandum of Understanding (MOU) with the Army for participation in the development of the Common Missile. Common Missile will provide Line of Sight (LOS), Non-Line of Sight (NLOS), and Beyond Line of Sight (BLOS) capabilities including precision strike with Fire & Forget technologies, increased range, and increased lethality for both Fixed Wing and Rotary Wing Aircraft. Common Missile will maximize the Warfighter's' operational flexibility by allowing them to effectively engage a variety of stationary and mobile targets, including advanced armor, bunkers, buildings, command and control vehicles, transporter/erector launchers and patrol craft.</p> <p>(U) DIRECT ATTACK GUIDED ROCKET (DAGR): The DAGR is an Army ATD to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. DAGR offers the Navy 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. DAGR will provide and inexpensive, small, lightweight, precision guided weapon that is effective against soft and lightly armored targets and which enhances crew survivability with increased stand-off range. Army, Marine Corps, and recent Navy 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.</p> <p>(U) COMMON DEFENSE WEAPONS SYSTEM (CDWS): The Department of the Navy has a requirement to replace legacy weapons with an advanced crew served weapon for assault support helicopters. Specific applications include a machine gun to replace M2M 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.</p> <p>(U) LOW COST HIGH TEMP MATERIALS: Congressional add for design and development of low cost, high temperature materials for radome and antenna use. Funding will support the design and development of six new radome candidate material systems that are (1) safe for production processing, (2) low cost in manufacturing, (3) structurally strong at high temperatures, and (4) compliant with RF transmission requirements compatible with Air-to-Ground Missile Hardware. Congressional add for design and development of low cost, high temperature materials for radome and antenna use. This alternative radome capability will be developed to support AARGM, High-Speed Anti-Radiation (HSAD), and other follow-on AGM-88 configurations.</p>	

R-1 SHOPPING LIST - Item No. 179

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 48)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A1780 HARM Improvement			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	11.592	3.807	2.013	1.749	3.697	3.706	3.828	3.839
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 recently developed (FY96 through FY99) 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 FY00.

The International HARM Upgrade Program (IHUP)/Precision Navigation Unit (PNU) is a tri-national (U.S., Italy, and Germany) cooperative program designed to improve the HARM's effectiveness by enhancing the missile's probability of kill and reducing the potential for fratricide while making the missile easier to employ. The Program consists of significant hardware and software modifications to the missile's control and guidance sections. The USN frequently refers to the IHUP upgrade as Block IIIB/VI. The three nations involved have agreed to jointly fund the design, development, testing and production of hardware kits to be installed in the missile control section along with an improved software version to be installed in the missile guidance section. The HARM Block IIIB/VI program started development in FY98 and will commence production in FY03. Funding in FY00 through FY03 is dedicated to the HARM Block IIIB/IV program.

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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A1780 HARM Improvement

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.592	3.807	0.000	0.000
RDT&E Articles Quantity				

Completes design, development, testing and integration of the IHUP PNU Block IIIB/VI.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.013	1.749
RDT&E Articles Quantity				

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.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0205601N HARM Improvement	A1780 HARM Improvement			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		12.221	3.901	2.113	1.842
FY 2004 President's Budget		11.592	3.807	2.013	1.749
Total Adjustments		-0.629	-0.094	-0.100	-0.093
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.023		
Congressional rescissions		-0.026			
SBIR/STTR Transfer		-0.318			
Economic Assumptions		-0.033	-0.071	-0.064	-0.048
Reprogrammings		-0.252			
Congressional increases					
Other Navy/OSD Adjustments				-0.036	-0.045
Subtotal		-0.629	-0.094	-0.100	-0.093
Schedule:					
MS III moved from 4Q03 to 1Q04 in order to resolve Contractor Testing anomalies. The Full Rate Production (FRP) contract award remains 2Q04.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A1780 HARM Improvement				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
WPN BLI 203270, HARM MODS		4.863	7.787	8.000	8.196	8.403			0	37.249
Related RDT&E: Not applicable.										
E. ACQUISITION STRATEGY: *										
<p>The HARM Block IIIB/VI Upgrade program is an ACAT III Program and will consist of three separate phases (EMD, Production, and Technology Evaluation and Assessment). The acquisition strategy for the HARM Block IIIB/VI Program is complete and is based upon a signed international Memorandum of Agreement with Germany, Italy, and U.S. Navy; a tri-national Cooperative Operational Requirements Document (CORD) details German, Italian, and U.S. Navy common requirements; and a Cooperative Test and Evaluation Master Plan (CTEMP) summarizes all test requirements. These three documents drive the overall acquisition approach to the HARM Block VI project.</p> <p>Management of the Block IIIB/VI upgrade will be directed by a trilateral Steering Committee, however, the U.S. Navy Project Manager (in concert with Project Managers from Germany and Italy) is responsible for Program execution. Each partner will share one-third of "common costs", the U.S. Navy will fund Block VI unique costs, and the German and Italian participants with fund Block IIIB unique costs. Each country will pay its own aircraft integration costs.</p>										

R-1 SHOPPING LIST - Item No. 179

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A1780 HARM Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	RSC, Tucson, AZ	18.249	0.793	10/02						19.042	19.042
Ancillary Hardware Development												
Aircraft Integration	WX	NAWC WD, China Lake, CA	9.746	1.038	10/02						10.784	
Ship Integration												
Ship Suitability												
Systems Engineering*	WX	NAWC WD, China Lake, CA	2.984	0.479	10/02	0.018	10/03	0.011	10/04		3.492	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			30.979	2.310		0.018		0.011		0.000	33.318	
Remarks: * In FY04/05, Germany and Italy will contribute to the Systems Engineering line.												
Development Support												
Software Development												
Integrated Logistics Support	WX	NAWC WD, Point Mugu, CA	1.209	0.573	10/02	0.199	10/03				1.981	
Configuration Management												
Technical Data												
Studies & Analyses		Boeing		0.030	01/03						0.030	
GFE												
Award Fees												
Subtotal Support			1.209	0.603		0.199		0.000		0.000	2.011	
Remarks:												

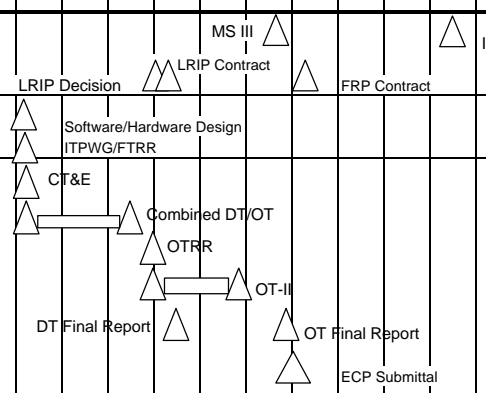
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A1780 HARM Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD China Lake, CA	9.006								9.006	
Operational Test & Evaluation	WX	NAWC WD China Lake, CA	3.308								3.308	
Operational Test & Evaluation FME	WX	NAWC WD China Lake, CA		0.859	10/02	1.717	10/03	1.714	10/04	Continuing	Continuing	
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			12.314	0.859		1.717		1.714		Continuing	Continuing	
Remarks: German and Italian cost share contribution to DT/OT.												
Contractor Engineering Support	RX	Rockwell Collins	2.149	0.010	01/03	0.065	12/03	0.015	12/04		2.239	
Government Engineering Support												
Program Management Support												
Travel/Transportation	WX	NAWCAD, Pax River, MD	0.337	0.025	10/02	0.014	10/03	0.009	10/04	Continuing	Continuing	
SBIR Assessment												
Subtotal Management			2.486	0.035		0.079		0.024		Continuing	Continuing	
Remarks:												
Total Cost			46.988	3.807		2.013		1.749		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																								DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement								PROJECT NUMBER AND NAME A1780 HARM Improvement																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																																				
Development																																				
Testing CT&E Combined DT/OT Independent OT (OPEVAL)																																				



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

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)				
COST (\$ in Millions)		FY 2002*	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost									
RDT&E Articles Qty		18.200	47.531	28.739	53.553	67.409	91.180	41.206	

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Congressional Add: \$14.7 million in FY 2002 for AARGM risk reduction efforts and producibility enhancements, less Congressional undistributed reductions.

The Advanced Anti-Radiation Guided Missile (AARGM) Project transitions 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 FY03. The AARGM SD&D program is designed to integrate a Multi-mode (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning system/Inertial Navigation System (GPS/INS)) on the HARM missile.

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 SEAD 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 technology being integrated in the AARGM program resolves the problem of "shut-down".

The AARGM Advanced Technology Demonstration ATD technology demonstration program was an outgrowth of a Phase I and II competitive SBIR program. Phase I and II SBIR efforts successfully demonstrated the feasibility of a multi-mode seeker to address radar "shut-down" issues. Science and Applied Technology (SAT), Inc. was awarded Phase I and II contracts (FY90-93) and was subsequently selected for a Phase III demonstration in FY94. Phase III ATD work is being performed by STK (previously SAT) under NAVAIR contract N00019-94-C-0078. This contractual effort will result in a cumulative contract value of \$194.9M. The AARGM ATD completed in FY 2002; the AARGM Risk Reduction/Producibility Enhancement Effort will complete in FY03. AARGM will commence System Development and Demonstration (SD&D) in FY03. The AARGM program plans to produce 1,750 missiles (60 Low Rate Initial Production (LRIP) missiles and 1,690 Full Rate AGM-88Es).

The AARGM program is the vehicle for the Quick Bolt Advanced Concept Technology Demonstration (ACTD). Quick Bolt adds the ability 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 is planned for completion in FY 2003.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	18.200	21.900		
RDT&E Articles Quantity				

Advanced Anti-Radiation Guided Missile (AARGM) Advanced Technology Demonstration (ATD) completion; Risk Reduction/Producibility Enhancement efforts for transitioning into SD&D.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		11.712	28.739	53.553
RDT&E Articles Quantity				

Milestone B System Development and Demonstration (SD&D) activities, and post-Milestone B SD&D effort. Contractor to update the SD&D 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 asset, and test and evaluation requirements analysis, and developmental logistics support. Contractor to perform engineering and technical evaluation services to support program management of AARGM.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		13.919		
RDT&E Articles Quantity				

Quick Bolt Advanced Concept Technology Demonstration (ACTD) contractor and governmental activities to demonstrate the utility of integrating off-board sensor cueing into a new HARM seeker and the utility of providing Weapon Impact Assessment data for BDA cueing. Contractor to support Military Utility Assessment activities including hardware in-the-loop testing, field testing, and missile live firings. Contractor to deliver residual ACTD assets.

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)		
C. PROGRAM CHANGE SUMMARY:				
Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	14.57	48.710	54.712	69.416
FY 2004 President's Budget	18.200	47.531	28.739	53.553
Total Adjustments	3.630	-1.179	-25.973	-15.863
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.288		
Congressional rescissions	-0.031			
SBIR/STTR Transfer	-0.319			
Economic Assumptions	-0.050	-0.891	-0.758	-1.247
Other Navy/OSD Adjustments			-25.215	-14.616
Reprogrammings	4.030			
Congressional increases				
Subtotal	3.630	-1.179	-25.973	-15.863
Schedule:				
AARGM Initial Operating Capability changed by two years, from FY08 to FY10.				
Technical:				

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)
-------------------------------------------------------------	--------------------------------------------------------------	---------------------------------------------------------------------------------

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 Proc. Line Item No. 232700, HARM MODS	0	0	0	0	0	0	24.818	42.425	600.757	668

E. ACQUISITION STRATEGY:

The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program (ATD), and has evolved into a Phase III SBIR program transitioning into System Development and Demonstration (SD&D). The AARGM SD&D fulfills U.S. Navy operational requirements and the SD&D incorporates AARGM system requirements. Government responsibilities for both the ATD and SD&D include monitoring, technical assessment and validation of contractor technology development and testing.

The Quick Bolt Advanced Concept Technology Demonstration (ACTD) will be completed in FY03 and transitioned into the AARGM SD&D.

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2185 Advanced Anti-Radiation Guided Missile (AARGM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	SAT, Woodland Hills, CA	98.562	0.000		0.000		0.000		0.000	98.562	98.562
Primary Hardware Dev. - Risk Red.	CPFF	SAT, Woodland Hills, CA	52.305	14.000	11/02	0.000		0.000		0.000	66.305	66.305
Primary Hardware Dev. - Quick Bolt	CPFF	SAT, Woodland Hills, CA	4.700	12.634	10/02	0.000		0.000		0.000	17.334	17.334
Primary Hardware Dev. - SD&D	CPIF	ATK, San Diego, CA	0.000	3.931	05/03	23.500	12/03	42.900	12/04	127.769	198.100	198.100
Aircraft Integration	WX	NAWC WD, China Lake	0.122	2.238	10/02	0.488	10/03	0.022	10/04	0.015	2.885	
Systems Engineering	WX	NAWC WD, China Lake	15.611	4.200	10/02	2.831	10/03	4.654	10/04	37.792	65.088	
Systems Engineering	WX	JHU/APL, MD	0.615	0.000							0.615	
Primary Hardware Dev. - Risk Red.	CPFF	ATK, San Diego, CA	0.000	7.900	03/03							
Tooling												
GFE												
Award Fees												
Subtotal Product Development			171.915	44.903		26.819		47.576		165.576	456.789	
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support	Var	Various		0.050	02/03	0.200	10/03	1.618	10/04	6.380	8.248	
Configuration Management												
Technical Data												
Studies & Analyses	Var	Various		0.027	10/02	0.027	10/03	0.028	10/04	0.090	0.172	
GFE												
Award Fees												
Subtotal Support			0.000	0.077		0.227		1.646		6.470	8.420	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2185 Advanced Anti-Radiation Guided Missile (AARGM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD, CHINA LAKE		1.200	10/02	0.893	10/03	2.481	10/04	13.633	18.207	
Operational Test & Evaluation	WX	NAWC WD, CHINA LAKE								7.709	7.709	
Live Fire Test & Evaluation												
Test Assets	WX	Assorted						0.750	10/04	2.250	3.000	
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	1.200		0.893		3.231		23.592	28.916	
Remarks:												
Contractor Engineering Support	RX	DCS Corp, Alexandria, VA	3.236	1.311	10/02	0.720	11/03	1.000	11/04	3.651	9.918	
Government Engineering Support												
Program Management Support												
Travel	WX	NAWC AD, Patuxend MD	0.375	0.040	10/02	0.080	10/03	0.100	10/04	0.507	1.102	
Transportation												
SBIR Assessment												
Subtotal Management			3.611	1.351		0.800		1.100		4.157	11.019	
Remarks:												
Total Cost			175.526	47.531		28.739		53.553		199.795	505.144	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 48)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: February 2003																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement										PROJECT NUMBER AND NAME A2185 Advanced Anti-Radiation Guided Missile (AARGM)																						
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009													
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4										
Acquisition Milestones						MS B	△																																			
Completion of AARGM ATD Completion of Quick Bolt ACTD			△			△																																				
Development System Design Review Preliminary Design Review Critical Design Review Functional Configuration Audit Production Readiness Review						SDR	△							PDR	△					CDR	△								FCA	△				PRR	△							
Testing & Evaluation Milestones Development Testing (IIA) Operational Testing (IIA)																																										
Production Milestones Contract Award (SD&D) Low-Rate Initial Production LRIP I Low-Rate Initial Production LRIP II							△	SD&D Contract Awd																												△	LRIP 1				△	LRIP II

R-1 SHOPPING LIST - Item No. 179

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A2211 Common Missile*			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	1.224	7.950	13.904	59.614	33.090	36.436	37.466	24.993
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

*Previously referred to as JAWS/Modernized HELLFIRE

(U) Common Missile (CM): Army lead joint service program to replace the aging legacy TOW, Maverick, and Hellfire missiles with a single multi-role weapon, IAW approved Navy, Army and Marine Corps mission needs statement for future multi-role precision guided weapons. The Department of the Navy (DoN) has a Memorandum of Understanding (MOU) with the Army for participation in the development of the Common Missile. Common Missile will provide Line of Sight (LOS), Non-Line of Sight (NLOS), and Beyond Line of Sight (BLOS) capabilities including precision strike with Fire & Forget technologies, increased range, and increased lethality for both Fixed Wing and Rotary Wing Aircraft. Common Missile will maximize the Warfighter's' operational flexibility by allowing them effectively engage a variety of stationary and mobile targets, including advanced armor, bunkers, buildings, command and control vehicles, transporter/erector launchers and patrol craft.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2211 Common Missile

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.224	7.950	13.904	59.614
RDT&E Articles Quantity				

Continued participation with the Army to in Common Missile System Development and Demonstration, to include:

- Development of seeker, propulsion and Warhead technologies for Navy and Marine Corps Fixed and Rotary Wing peculiar requirements (including shipboard operability and suitability);
- Systems engineering, including development of component technical solutions using SMART (simulation and modeling for acquisition, requirements and training).
- Design reviews (Baseline Design Review, Preliminary Design Review, Critical Design Review);
- Risk reduction engineering on multi-mode seekers (Dual/Tri-Mode), advanced warheads, and variable thrust propulsion;
- Platform integration.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0205601N HARM Improvement	A2211 Common Missile			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		1.289	8.147	14.492	6.473
Current BES/President's Budget		1.224	7.950	13.904	59.614
Total Adjustments		-0.065	-0.197	-0.588	53.141
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.048		
Congressional rescissions		-0.003			
SBIR/STTR Transfer		-0.033			
Economic Assumptions		-0.003	-0.149	-0.321	-1.252
Reprogrammings		-0.026			
Congressional increases					
Other Navy/OSD Adjustments				-0.267	54.393
Subtotal		-0.065	-0.197	-0.588	53.141
Schedule:					
Not Applicable.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A2211 Common Missile
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost
WPN (\$M)						6.3	5.9	19.5	TBD	31.7
Related RDT&E: U. S. Army P.E. 0603313A PROJ D263 Future Missile Technology Insertion (FMTI). U.S. Army P.E. 0604329A Common Missile, U.S. Army P.E. 0604802A Advanced Precision Kill Weapon System.										

E. ACQUISITION STRATEGY:

N/A

* Not required for Budget Activities 1,2,3, and 6
 ** Required for DON and OSD submit only.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2211 Common Missile						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	AAMCOM, Huntsville, AL		1.870	11/02	4.459	11/03	5.628	11/04		11.957	
Ancillary Hardware Development	TBD	TBD (Contractor)				1.000	11/03	8.146	11/04		9.146	9.146
Training Development	WX	NAWCAD/WD				4.000	11/03				4.000	4.000
Aircraft Integration	WX	NAWCAD/WD		0.300	11/02	1.873	11/03	17.400	11/04		19.573	
Ship Suitability												
Systems Engineering	WX	NAWCAD/WD	1.238	3.230	10/02			1.915	10/04		6.383	
Licenses												
Tooling												
GFE												
Award Fees		TBD (Contractor)				0.476	11/03	2.022	11/04		2.498	
Subtotal Product Development				5.400		11.808		35.111			52.319	
Remarks:												
Development Support	WX	NAWCAD/WD	1.374			0.312	10/03	0.319	10/04		2.005	
Software Development												
Integrated Logistics Support												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			1.374			0.312		0.319			2.005	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 48)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A2211 Common Missile						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD/WD	0.185	1.000	11/02			2.000	11/04		3.185	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets	MIPR	TBD (Contractor)						17.641	11/04		17.641	17.641
Tooling	MIPR/TDE	NACWD/Contractor		0.500	11/02						0.500	
GFE												
Award Fees												
Subtotal T&E			0.185	1.500		0.000		19.641		0.000	21.326	
Remarks:												
											0.000	3.653
Government Engineering Support	WX	NAWCAD/WD	1.912	0.500	01/03	0.468	01/04	0.479	11/04	Continuing	Continuing	
Program Management Support	Various	Various		0.500	Various	1.116	Various	3.864	11/04		5.480	
Travel	WX/MIPR	NAVAIR/AAMCOM, Huntsville, AL	0.125	0.050	10/02	0.200	01/04	0.200	10/04		0.575	
Transportation												
SBIR Assessment			0.039								0.039	
Subtotal Management			2.076	1.050		1.784		4.543		Continuing	Continuing	
Total Cost			3.635	7.950		13.904		59.614		Continuing	Continuing	

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 48)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3056 Direct Attack Guided Rocket (DAGR)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			4.725	12.536	12.533			
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Army, Marine Corps, and recent Navy 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 DAGR is an Army ATD to develop a low cost Semi Active Laser (SAL) precision guidance section for existing 2.75 inch unguided rockets. DAGR 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 stand-off range. DAGR 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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3056 Direct Attack Guided Rocket (DAGR)

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.725	12.536
RDT&E Articles Quantity				

FY04 - 05 Direct Attack Guided Rocket (DAGR) funding supports the Navy participation and share in SD&D with the Army. This is an Army lead program. The program will develop, test and qualify a laser guided 2.75-inch munitions for the Navy and Marine Corps rotary wing and fixed wing aviation. Funding will ensure Navy requirements are contained in the System Development and Demonstration contract, Statement of Work and will participate in Source Selection Board activities. Participated with the Army to validate the Operational Requirements Document (ORD). Prepared for a Milestone B decision, System Development and Demonstration. FY04 component development, DT testing and technical analysis. FY05, 5" rocket design and development, development of OT targets and, procurement of OT guidance sections, OT technical analysis, Aircraft Integration studies.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3056 Direct Attack Guided Rocket (DAGR)			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	4.875	12.907
Current BES/President's Budget		0.000	0.000	4.725	12.536
Total Adjustments		0.000	0.000	-0.150	-0.371
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions				-0.120	-0.279
Reprogrammings					
Congressional increases					
Other Navy/OSD Adjustments				-0.030	-0.092
Subtotal		0.000	0.000	-0.150	-0.371
Schedule:					
Not Applicable.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3056 Direct Attack Guided Rocket (DAGR)
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PANMC - Airborne Rockets, All Types *					3.5	7.0	10.5			
Related RDT&E: U. S. Army P.E. 0603313A PROJ D263 Future Missile Technology Insertion (FMTI). U.S. Army P.E. 0604329A Common Missile, U.S. Army P.E. 0604802A Advanced Precision Kill Weapon System.										
* Planned procurement strategy for the DAGR 2.75-inch guidance sections within the current Airborne Rockets, All Types PANMC funding profile										

E. ACQUISITION STRATEGY:

Not an ACAT program with no specific acquisition strategy.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3056 DAGR (APKWS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD				0.505	10/03	2.357	10/04		2.862	2.862
Ancillary Hardware Development	TBD	TBD						0.054	10/04		0.054	0.054
Training Development	TBD	TBD						0.050	10/04		0.050	0.050
Aircraft Integration	TBD	TBD				0.200	10/03	0.100	11/04		0.300	
Ship Suitability												
Systems Engineering	TBD	TBD						0.544			0.544	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						0.705		3.105		0.000	3.810	
Remarks:												
Development Support	WX	NAWCAD/NAWCWD						0.050	10/04		0.050	
Software Development	WX	NAWCAD/NAWCWD						0.025	10/04		0.025	
Integrated Logistics Support	WX	NAWCAD/NAWCWD						0.180	10/04		0.180	
Configuration Management	WX	NAWCAD/NAWCWD						0.060	10/04		0.060	
Technical Data	WX	NAWCAD/NAWCWD						0.165	10/04		0.165	
Studies & Analyses	WX	NAWCAD/NAWCWD						0.385	10/04		0.385	
Contractor Engineering Support	WX	NAWCAD/WD						0.250	10/04	6.533	6.783	
Government Engineering Support	WX	NAWCAD/WD				0.755	10/03	1.850	10/04		2.605	
Subtotal Support								2.965			2.965	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 31 of 48)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3056 DAGR (APKWS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	PX	NSWC Indian Head, MD				1.060	10/03				1.060	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets	TBD	Contractor/TBD				1.810	10/03	6.000	10/04	6.000	13.810	13.810
Tooling												
GFE												
Award Fees												
Subtotal T&E						2.870		6.000		6.000	14.870	
Remarks:												
Program Management Support	WX	NAWCAD/WD				0.329	10/03	0.400	10/04		0.729	
Travel						0.066	10/03	0.066	10/04		0.132	
Transportation												
SBIR Assessment												
Subtotal Management						0.395		0.466		0.000	0.861	
Remarks:												
Total Cost						3.970		12.536		6.000	22.506	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement								PROJECT NUMBER AND NAME A3056 Direct Attack Guided Rocket (DAGR)																						
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009													
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4										
Acquisition Milestones																																										
Milestone B				▲																																						
Milestone C																▲																										
SDD*					▲	System Development and Demonstration (SDD)												▲																								
SDD Contract Award*					▲																																					
AH-1 INT/OT									▲	-----												▲																				
Test & Evaluation Milestones									▲	-----												▲																				
Component Development/ System Test and Qual											▲	-----		▲																												
Operational Test																																										
Production Milestones																																										
LRIP																																										
FRP																																										
FRP (Follow-on)																																										
Deliveries																																										

R-1 SHOPPING LIST - Item No. 179

* US Army SD&D activities begin in FY 2003; Navy participation begins in FY 2004

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A3057 Common Defense Weapons System			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost				4.838				
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Department of the Navy has a requirement to replace legacy M2M and XM-218 50 caliber machine guns with an advanced crew served weapon for assault and support helicopters. Specific applications 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 hardware development.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA - 7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3057 Common Defense Weapons System

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				4.838
RDT&E Articles Quantity				

Funding will support requirements validation, advance technology demonstration, and hardware development, including integration and system qualification efforts on the H1/H46/H53 helicopters.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3057 Common Defense Weapons System			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	4.964
Current BES/President's Budget		0.000	0.000	0.000	4.838
Total Adjustments		0.000	0.000	0.000	-0.126
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions					-0.117
Reprogrammings					
Congressional increases					
Other Navy/OSD Adjustments					-0.009
Subtotal		0.000	0.000	0.000	-0.126
Schedule:					
Not Applicable.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A3057 Common Defense Weapons System
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-5 - H-53 Mods (\$M)		6			14.2	14.2				28.4
Related RDT&E: U. S. Army P.E. 0603313A PROJ D263 Future Missile Technology Insertion (FMTI). U.S. Army P.E. 0604329A Common Missile, U.S. Army P.E. 0604802A Advanced Precision Kill Weapon System.										

E. ACQUISITION STRATEGY:

Not an ACAT program with no specific acquisition strategy.

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3057 Common Defense Weapons System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	Contractor (TBD)/NAWCWD						2.000	10/04		2.000	
Ancillary Hardware Development												
Training Development	WX	NAVAIR						0.075	10/04		0.075	
Aircraft Integration	WX	NAWCAD/WD						1.283	10/04		1.283	
Ship Suitability												
Systems Engineering	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development								3.498			3.498	
Remarks:												
Development Support	WX	NAWCAD/NAWCWD						0.140	10/04		0.140	
Software Development												
Integrated Logistics Support	WX	NAWCWD						0.070	10/04		0.070	
Configuration Management	WX	NAWCWD						0.025	10/04		0.025	
Technical Data	WX	NAWCWD						0.025	10/04		0.025	
Studies & Analyses	WX	NAVAIR						0.075	10/04		0.075	
GFE												
Award Fees												
Subtotal Support								0.335			0.335	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 39 of 48)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A3057 Common Defense Weapons System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD/WD						0.400	10/04		0.400	
Operational Test & Evaluation	WX	NAWCAD/WD						0.194	10/04		0.194	
Live Fire Test & Evaluation												
Test Assets								0.100	10/04		0.100	
Tooling												
GFE												
Award Fees												
Subtotal T&E								0.694			0.694	
Remarks:												
Contractor Engineering Support												
Government Engineering Support	TBD	TBD						0.145	10/04		0.145	
Program Management Support	TBD	TBD						0.146	10/04		0.146	
Travel	TBD	TBD						0.020	10/04		0.020	
Transportation												
SBIR Assessment												
Subtotal Management								0.311			0.311	
Remarks:												
Total Cost								4.838			4.838	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 40 of 48)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement										PROJECT NUMBER AND NAME A3057 Common Defense Weapons System (CDWS)												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Contract Award Advanced Technology Development & Hardware Development																																
H-1/H-46/H-53 Integration																																
Test & Evaluation Milestones																																
System Qualification testing																																

R-1 SHOPPING LIST - Item No. 179

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement			PROJECT NUMBER AND NAME A9272 Low Cost High Temp Material			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost								
RDT&E Articles Qty		0.975						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional add for design and development of low cost, high temperature materials for radome and antenna use.

Funding will support the design and development of new radome candidate materials that are: (1) safe for production processing, (2) low cost in manufacturing, (3) structurally strong at high temperatures, and (4) compliant with RF transmission requirements compatible with Air-to-Ground Missile Hardware. This alternative radome capability will be developed to support AARGM, High-Speed Anti-Radiation (HSAD), and other follow-on AGM-88 configurations. Hardware configurations for testing effect of materials on radar transmissions will be developed.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A9272 Low Cost High Temp Material

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.975	0.000	0.000
RDT&E Articles Quantity				

Develop assorted, new radome candidate materials that are (1) safe for production processing, (2) low cost in manufacturing, (3) structurally strong at high temperatures, and (4) compliant with RF transmission requirements compatible with AARGM. Hardware configurations for testing will be developed. Candidate materials will be selected and screened for mechanical/physical properties and coating durability at high-temperatures. Final test will be performed to assess material and establish data points of radome transmission using candidate materials. NAWC WD field activity will provide engineering analysis to assess low cost, high temperature materials design and development.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A9272 Low Cost High Temp Material
-------------------------------------------------------------	--------------------------------------------------------------	--------------------------------------------------------------

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0	0.000	0.000	0.000
FY 2004 President's Budget	0.000	0.975	0.000	0.000
Total Adjustments	0.000	0.975	0.000	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.006		
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions		-0.019		
Other Navy/OSD Adjustments				
Reprogrammings				
Congressional increases		1.000		
Subtotal	0.000	0.975	0.000	0.000

Schedule:

Technical:

R-1 SHOPPING LIST - Item No. 179

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205601N HARM Improvement	PROJECT NUMBER AND NAME A9272 Low Cost High Temp Material
-------------------------------------------------------------	--------------------------------------------------------------	--------------------------------------------------------------

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
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E. ACQUISITION STRATEGY:

Stand alone one-year effort for the design and development of low cost, high temperature materials for radome and antenna application will be conducted in FY2003. The program will be executed on an existing Naval Air Warfare Center BOA with Composite Optics, Inc., San Diego CA, and the funds will be obligated by Mar 2003. This contractual effort will develop assorted, new radome candidate material systems that are (1) safe for production processing, (2) low cost in manufacturing, (3) structurally strong at high temperatures, and (4) compliant with RF transmission requirements compatible with AARGM. Hardware configurations for testing will be developed. Candidate materials will be selected and screened for mechanical/physical properties and coating durability at high-temperatures. Final test will be performed to establish data points of radome transmission using candidate materials.

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A9272 Low Cost High Temp Material						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	COI, San Diego	0.000	0.860	03/03						0.860	0.860
Aircraft Integration												
Systems Engineering	WX	NAWC WD, China Lake, CA		0.105	02/03						0.105	
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.965		0.000		0.000		0.000	0.965	
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205601N HARM Improvement			A9272 Low Cost High Temp Material						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel				0.010	02/03						0.010	
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.010		0.000		0.000		0.000	0.010	
Remarks:												
Total Cost			0.000	0.975		0.000		0.000		0.000	0.975	
Remarks:												

R-1 SHOPPING LIST - Item No. 179

UNCLASSIFIED

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7						R-1 ITEM NOMENCLATURE 0205604N Tactical Data Links					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	286.217	37.906	41.614	44.526	19.089	31.183	24.934	25.407	25.883	CONT	CONT
X1743 Link-16 Improvements	15.677	14.879	14.832	14.412	6.177	11.988	7.675	7.819	7.965	CONT	CONT
X2126 ATDLS Integration	270.540	23.027	26.782	30.114	12.912	19.195	17.259	17.588	17.918	CONT	CONT
Quantity of RDT&E Articles	13		9								22
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
(U) This program element (PE) develops and improves the Navy's tactical data link systems. It includes the Link-16 Improvements and Advanced Tactical Data Link Systems (ATDLS) Integration Programs.											
(U) Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (C2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and high throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer.											
(U) The ATDLS Integration Program will integrate the Multifunctional Information Distribution System – Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a pre-planned product improvement of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class 2 terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft such as the F/A-18, P-3, EA-6B, AV-8B, and SH-60; U.S. Navy ships, and U.S. Marine Corps ground units with crypto-secure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IA.											

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	R-1 ITEM NOMENCLATURE 0205604N Tactical Data Links
<p>(U) ATDLS Integration Program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor is a software development effort that provides an interface between the TADILs (Links 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS Command and Decision (C&D)). The Common Data Link Management System is a pre-planned product improvement of the Command and Control Processor. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration, Dynamic Network Management and the Joint Interface Control Officer Support System (JSS). Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. Joint Interface Control Officer Support System will be the standard joint service toolset to monitor and control Multi-TADIL network architectures.</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> <p>(U) NOTE: Defense Emergency Response Fund (DERF) funding of \$7.8M will: (1) increase the scope of the Link-16 Improvement Program to develop new capabilities which are pivotal in support of the Joint and Navy requirement in developing a coherent tactical picture; and (2) crossdeck Dual Net Multi-Frequency Link-11 (DNMFL) Prototypes for data collection and analysis to design and develop DNMFL capability into the Common Data Link Management System (CDLMS).</p>	

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links				PROJECT NUMBER AND NAME X1743 Link-16 Improvements						
COST (\$ in Millions)		Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		15.677	14.879	14.832	14.412	6.177	11.988	7.675	7.819	7.965	Continuing	Continuing
RDT&E Articles Qty				9								9

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

Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (NGC2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and High Throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements
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(U) B. Accomplishments/Planned Program

CDLMS / LINK-22 PROGRAM ENHANCEMENTS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.160	6.994	1.110	0.500
RDT&E Articles Quantity		9		

FY 02 Accomplishments: Continued development of CDLMS/Link-22 program enhancements, which include design and development of MTC and the integration of the System Network Controller (SNC). Commenced development of NGC2P design. Commenced development of the MTP Prototype including Link-16 Joint Range Extension, Link-16 Throughput enhancements and Dual Net Link-11 capabilities. Commenced building nine MTP prototype units.

FY 03 Plan: Complete MTP Prototype development. MTP Prototype will include Extremely High Frequency (EHF) Moderate Data Rate (MDR) Beyond Line of Sight (BLOS) Link-16 capability, Link-16 throughput enhancements and Model 5 Dual Net Link-11 capability. MTP Prototype will be installed on six ships in a battlegroup and tested at sea to obtain real world performance data and three MTP prototypes units will be used for laboratory testing.

FY 04 Plan: Incorporate enhanced capabilities into NGC2P design. Complete design assessment of MTP Prototype and incorporate results into CDR.

FY 05 Plan: Conduct Critical Design Review (CDR).

Multi-Link Test Tool (MLTT) S/W	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.797			
RDT&E Articles Quantity				

Completed NILE design and development Subphase 2 software for the Multi-Link Test Tool (MLTT). Certified the Link-Level COMSEC (LLC) and MLTT software applications used in NILE architecture.

R-1 SHOPPING LIST - Item No. 180

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 4 of 23)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">CDLMS / LINK-22 Design and Test</th> <th style="padding: 5px;">FY 02</th> <th style="padding: 5px;">FY 03</th> <th style="padding: 5px;">FY 04</th> <th style="padding: 5px;">FY 05</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px; text-align: center;">5.922</td> <td style="padding: 5px; text-align: center;">4.306</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </tbody> </table>					CDLMS / LINK-22 Design and Test	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	5.922	4.306			RDT&E Articles Quantity				
CDLMS / LINK-22 Design and Test	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	5.922	4.306																	
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 10px; min-height: 80px;"> <p>FY 02 Accomplishments: Completed Link-22 design requirements supporting integration of Link-22 into NGC2P.</p> <p>FY 03 Plan: Continue CDLMS/Link-22 design. Conduct System Requirements Review (SRR) and Preliminary Design Review (PDR). Incorporate results from the MTP Prototype onto NGC2P system design requirements.</p> </div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">NGC2P INCREMENT 1 CAPABILITY</th> <th style="padding: 5px;">FY 02</th> <th style="padding: 5px;">FY 03</th> <th style="padding: 5px;">FY 04</th> <th style="padding: 5px;">FY 05</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Accomplishments/Effort/Subtotal Cost</td> <td style="padding: 5px;"></td> <td style="padding: 5px; text-align: center;">3.532</td> <td style="padding: 5px; text-align: center;">13.302</td> <td style="padding: 5px; text-align: center;">5.677</td> </tr> <tr> <td style="padding: 5px;">RDT&E Articles Quantity</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </tbody> </table>					NGC2P INCREMENT 1 CAPABILITY	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		3.532	13.302	5.677	RDT&E Articles Quantity				
NGC2P INCREMENT 1 CAPABILITY	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		3.532	13.302	5.677															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 10px; min-height: 100px;"> <p>FY 03 Plan: Commence development of NGC2P Increment 1 capability. Commence development of Increment 1 software. Commence development of CDLMS field change and technical manuals and training curricula updates.</p> <p>FY 04 Plan: Continue development of NGC2P Increment 1 capability. Continue development of EHF MDR BLOS capability, Link-16 throughput enhancements and Model 5 Dual Net Link-11 capability as well as continuing the rehosting of current C2P software from CMS-2 to Modern Higher Order Software language. Continue development of CDLMS field change and technical manual development. Continue development of training curricula update.</p> <p>FY 05 Plan: Continue development of NGC2P Increment 1 capability and development of training curricula. Commence shore based development, test and evaluation of NGC2P Increment 1 capability.</p> </div>																			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget	15.207	15.207		
Current BES/President's Budget	14.879	14.832	14.412	6.177
Total Adjustments	-0.328	-0.375	0	0
Summary of Adjustments				
Section 8123: Management Reform Initiative	-0.134			
SBIR	-0.323			
Section 313, PL 107-206: Revised Economic Assumptior	-0.032			
Section 8100 : Business Process Reform		-0.061		
Section 8135: Economic Assumptions	-0.040	-0.085		
Section 8109: IT Cost Growth		-0.028		
Section 8029: P.L. 107-248 FY 03 FFRDC Reduction		-0.009		
Miscellaneous Department Adjustments	0.201	-0.192		
Total Adjustments	-0.328	-0.375	0.000	0.000

Project X1743 no longer identifies RDT&E,N funding for the NATO Improved Link Eleven (NILE) In-Service Support Phase (ISSP). The ISSP commenced in FY 02 and the US contribution will be funded with O&M,N funding. The NILE funding that was budgeted in FY 03 has been reallocated to support the completion and assessment of the Multi-TADIL Processor (MTP) Prototype.

(U) Schedule:

The design milestones have slipped from FY 02 to FY 03 and the NGC2P Increment 1 IOC slipped from 4th quarter FY 05 to 3rd quarter FY 07.

(U) Technical:

The technical development approach for the Next Generation Command and Control Processor (C2P) (NGC2P) has been modified to include rapid prototyping of selected NGC2P capabilities referred to as Multi-TADIL Processor (MTP). Consequently, the formal design reviews have been moved to FY03 to take advantage of the results of MTP rapid prototype development that was initiated in FY02. This rapid prototype development approach will enable real world data to be used for the NGC2P development. The MTP set of capabilities will be fielded on seven Model 5 CDLMS configured ships and is referred to as Interim NGC2P. The objective NGC2P will be fielded in two functional increments. Increment 1 will achieve IOC in 3Q/07 and will include Link-16 Joint Range Extension capability and Link-16 high throughput enhancements. Increment 2 will achieve IOC in 1Q/09 and will include Link-22. Due to this change in technical approach and that the Navy has a higher priority to implement Link-16 Joint Range Extension and Link-16 throughput enhancements, the Link-22 IOC has moved to FY 09.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	-------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X1743 Link-16 Improvements
-------------------------------------------------------------	------------------------------------------------------------------------	--------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN Line 2614 ATDLS	8.584	7.448	16.197	2.402	13.274	11.588	11.801	12.017	Continuing	Continuing
DERF	12.500									

(U) E. ACQUISITION STRATEGY:

Next Generation Command and Control Processor and Multi TADIL Processor are utilizing existing cost plus contracts.

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Exhibit R-3 Cost Analysis (page 3)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X1743 Link-16 Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX	SPAWARSYSCEN, San Diego, CA	0.731	0.800	Various	1.629	Various	2.019	Various	Continuing	Continuing	Continuing
Subtotal T&E			0.731	0.800		1.629		2.019				
Remarks:												
Engineering Support and Travel	Various	Various	1.270	0.554	Various	0.571	Various	0.490	Various	Continuing	Continuing	Continuing
Subtotal Management			1.270	0.554		0.571		0.490				
Remarks:												
Total Cost			30.556	14.832		14.412		6.177				
Remarks:												

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EXHIBIT R4, Schedule Profile																										DATE:						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7													PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links										PROJECT NUMBER AND NAME X1743 Link-16 Improvements				February 2003					
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Program Milestones																																
NGC2P INC 1																																
NGC2P INC 2																																
Engineering Milestones																																
NGC2P INC 1																																
NGC2P INC 2																																
Test & Evaluation Milestones																																
MLTT																																
LLC																																
MTP Prototype																																
NGC2P INC 1																																
NGC2P INC 2																																
Contract Milestones																																
LLC																																
NGC2P																																

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0205604N Tactical Data Links				PROJECT NUMBER AND NAME X1743 Link-16 Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MLTT Certification	3Q							
LLC Certification	4Q							
MTP Prototype at Lab Test		1Q						
NGC2P Increment 1 SRR		2Q						
LLC LRIP		2Q						
MTP Prototype at Sea Test		3Q						
Interim NGC2P Production Contract Award			2Q					
NGC2P Increment 1 PDR		4Q						
NGC2P Increment 1 CDR				2Q				
NGC2P Increment 1 DT				4Q				
NGC2P Increment 1 CSIT						1Q		
NGC2P Increment 1 TECHEVAL/OPEVAL						2Q		
NGC2P Increment 1 Link Certification						2Q		
NGC2P Increment 2 PDR						2Q		
NGC2P Production Contract Award						2Q		
NGC2P Increment 1 IOC						3Q		
NGC2P Increment 1 BGIT						3Q		
NGC2P Increment 2 CDR						4Q		
NGC2P Increment 2 FOT&E							4Q	
NGC2P Increment 2 IOC								1Q

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links				PROJECT NUMBER AND NAME X2126 ATDLS Integration						
COST (\$ in Millions)		Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		270.540	23.027	26.782	30.114	12.912	19.195	17.259	17.588	17.918	Continuing	Continuing
RDT&E Articles Qty		13										13

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

(U) The ATDLS Integration program will integrate the Multifunctional Information Distribution System – Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a Pre-Planned Product Improvement (P3I) of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class II terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft such as the F/A-18, P-3, EA-6B, AV-8B and SH-60; U.S. Navy ships, and U.S. Marine Corps ground units with crypto-secure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IIA.

(U) ATDLS Improvement program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor (C2P) is a software development effort that provides an interface between the TADILs (Link 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS C&D). Common Data Link Management System (CDLMS) is a Pre-planned Product Improvement (P3I) of the C2P. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration, Dynamic Network Management and Joint Interface Control Officer Support System (JSS). Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field. The Joint Interface Control Officer Support System will be the standard service toolset to monitor and control Multi-TADIL network architectures. Engineering changes to the tactical data links will support the objective of achieving a Single Integrated Air Picture (SIAP) across the Joint Forces in projected operational environments.

(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.

(U) Additional terminal development costs are funded in program element 0604771D.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration

(U) B. Accomplishments/Planned Program

F/A-18 MIDS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	16.627	15.481	2.937	
RDT&E Articles Quantity				

FY 02 Accomplishments: Completed F/A-18 MIDS integration software, flight testing and TECHEVAL.
 FY 03 Plan: Complete F/A-18 MIDS OPEVAL. Conduct F/A-18 system interoperability certification testing.
 FY 04 Plan: Conduct F/A-18 MIDS EMC features regression testing. Correction and testing of deficiencies identified during OPEVAL.

MIDS on Ship (MOS)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.951	2.491		
RDT&E Articles Quantity				

FY 02 Accomplishments: Integrated MIDS on Ship with Model 5 Combat System and conducted testing.
 FY 03 Plan: Complete MIDS on Ship development and operational testing.

TADIL-J System Engineering	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.655	2.341		
RDT&E Articles Quantity				

FY 02 Accomplishments: Continued TADIL-J System Engineering which included investigating future capabilities and enhancements and ensured Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension, dynamic network management and time critical strike applications.
 FY 03 Plan: Continue TADIL-J System Engineering which included investigating future capabilities and enhancements and ensured Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension, dynamic network management, time critical strike, and support integration concepts for additional aircraft.

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration
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(U) B. Accomplishments/Planned Program

C2P Performance Upgrades	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.794	1.173		
RDT&E Articles Quantity				

FY 02 Accomplishments: Continue Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.
 FY 03 Plan: Completed Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.

Low Cost Integration	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.110	3.867	
RDT&E Articles Quantity				

FY 03 Plan: Conduct Low Cost Integration preliminary and critical design reviews and develop prototype for initial testing and certification.
 FY 04 Plan: Conduct Low Cost Integration service and joint interoperability certification while performing lab integration testing and demonstration.

Dynamic Network Management	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.186	15.866	12.912
RDT&E Articles Quantity				

FY 03 Plan: Commence Dynamic Network Management (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. Supports the development of dynamic reconfiguration protocols and algorithms, preliminary DNM design, laboratory and simulation testing and Fleet Battle Experiment. Conduct Preliminary Design Review (PDR).
 FY 04 Plan: Continue Dynamic Network Management 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. Supports the development of Link-16 terminal and test bed hardware and software modifications to implement DNM capability. Develop improved Link-16 capabilities including enhanced throughput and organic navigation.
 FY 05 Plan: Continue Dynamic Network Management 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. Complete Link-16 terminal and test bed modifications. Perform software formal qualification tests (SFQT), link certification and participate in Fleet exercise to evaluate DNM maturity. Commence designing and development of platform integration of DNM into ship and aircraft. Develop Dynamic Network Management integrated logistics support products including system-operating procedures.

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration		
(U) B. Accomplishments/Planned Program				
JT Interface Cont. Off. Supt System (JSS)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			7.444	
RDT&E Articles Quantity				
<p>FY 04 Plan: Conduct software development and integration of JICO Support System into Navy platforms.</p>				

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 16 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget		24.155	27.460		
Current BES/President's Budget		23.027	26.782	30.114	12.912
Total Adjustments		-1.128	-0.678	0	0
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.213			
FFRDC		-0.002	-0.016		
SBIR		-0.338			
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.051			
Section 8135: Economic Assumptions		-0.065	-0.154		
Federal Technology Transfer		-0.011			
Miscellaneous Adjustments		-0.448	-0.348		
Section 8135: Business Process Reform			-0.110		
Section 8109: IT Cost Growth			-0.050		
Total Adjustments		-1.128	-0.678	0.000	0.000
Commencing in FY 04, Project X2126 no longer separately identifies TADIL-J systems engineering in the program plans. TADIL-J systems engineering is included in the applicable product line.					
(U) Schedule:					
Completion of Performance Upgrades development efforts slipped from FY 02 to FY 03. The operational test for CDLMS software version 2.0 slipped from FY 02 to FY 03 due to the slip in the AEGIS Baseline 6.1 certification test.					
(U) Technical: Not applicable.					

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	-------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links	PROJECT NUMBER AND NAME X2126 ATDLS Integration
-------------------------------------------------------------	------------------------------------------------------------------------	-----------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN LINE LI 052500 F/A-18	37.624	48.206	48.207	50.573	42.974	48.965	49.926	50.879	Continuing	Continuing
RDT&E,DA	16.328	10.797	10.863	18.859	19.205	19.566	19.955	20.375	Continuing	Continuing
OPN LI 2614 ATDLS	8.584	7.536	16.197	2.402	13.274	11.588	11.801	12.017	Continuing	Continuing
DERF	12.500									

SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits.

RELATED RDT&E:

PE 0604771D/P771 - Link-16: Link-16 systems engineering support.

PE 0604771D/P773 - MIDS: MIDS-LVT terminal development.

(U) E. ACQUISITION STRATEGY:

F/A-18 MIDS aircraft integration is utilizing cost plus fixed fee contracts on an R&D Basic Ordering Agreement with Boeing. MIDS integration and testing, TADIL-J systems engineering, and performance upgrades development are utilizing existing cost plus contracts.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X2126 ATDLS Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
F/A-18 Integration	PD	NAVAIRSYSCOM, PAX River, MD	142.970	6.999	Various	1.217	Various				151.186	151.186
TADIL-J System Engineering	WX	SPAWARSCEN, San Diego, CA	27.009	1.224	Various						28.233	28.233
TADIL-J System Engineering	Various	Various	3.726	0.928	Various						4.654	4.654
MIDS on Ship	CPIF	BAE Systems, Wayne, NJ (DLS)	13.944	0.500	12/02						14.444	14.444
MIDS on Ship	Various	Various	44.240	0.900	Various						45.140	45.140
Performance Upgrades	WX	SPAWARSCEN, San Diego, CA	13.143	1.070							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, MD	0.900								0.900	0.900
DNMFL Prototypes	Various	Various	2.127								2.127	2.127
Low Cost Integration	Various	Various		1.946	Various	2.528	11/03			Continuing	Continuing	Continuing
DNM Sys Engineering	WX	SPAWARSCEN, San Diego, CA		0.500	11/02	2.750	11/03	1.900	11/04	Continuing	Continuing	Continuing
DNM Development	CPFF	Northrup Grumman		1.840	03/03	7.781	11/03	2.100	11/04	Continuing	Continuing	Continuing
DNM Development	MIPR	Warner Robbins AFB		0.600								
DNM Integration	WX	Various				1.100	11/03	3.218	11/04	Continuing	Continuing	Continuing
JSS Software Dev and Integration	MP	ESC Hanscom AFB, MA				6.471	03/04				6.471	6.471
JSS Software Dev and Integration	WX	SPAWARSCEN, San Diego, CA				0.973	11/03				0.973	0.973
Subtotal Product Development			257.220	16.507		22.820		7.218				
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0205604N Tactical Data Links			X2126 ATDLS Integration							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Development Support													
Software Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
Studies & Analyses													
GFE													
Award Fees													
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													

R-1 SHOPPING LIST - Item No. 180

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205604N Tactical Data Links			X2126 ATDLS Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various	4.025								4.025	4.025
MIDS F/A-18 T&E	WX	SPAWARSYSCEN San Diego, CA	9.088	2.720	Various	0.496	Various				12.304	12.304
MIDS F/A-18 T&E	Various	Various	7.863	4.533	Various	1.197	Various				13.593	13.593
MIDS on SHIP T&E	PD	OPTEVFOR Norfolk, VA	0.092	0.500	Various						0.592	0.592
MIDS on SHIP T&E	WX	SPAWARSYSCEN San Diego, CA	0.940	0.400	11/02						1.340	1.340
MIDS Test Assets	SS/CPAF/IF	MIDSCO Fairfield, NJ	6.594								6.594	6.594
Low Cost Integration T&E	Various	Various				0.749	Various			Continuing	Continuing	Continuing
Dynamic Network Management	WX	SPAWARSYSCEN San Diego, CA				2.933	12/03	3.855	Various	Continuing	Continuing	Continuing
Subtotal T&E			28.602	8.153		5.375		3.855				Continuing
Remarks:												
Engineering Support and Travel	Various	Various	7.745	2.122	Various	1.919	Various	1.839	Various	Continuing	Continuing	Continuing
Subtotal Management			7.745	2.122		1.919		1.839		0.000		
Remarks:												
Total Cost			293.567	26.782		30.114		12.912				
Remarks:												

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EXHIBIT R4, Schedule Profile																										DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0205604N Tactical Data Links										PROJECT NUMBER AND NAME X2126 ATDLS Integration												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Program Milestones			LRIP 3 △		DAB MS III △		IOC △																									
MIDS																																
DNM																																
Engineering Milestones																																
DNM																																
LCI																																
Test & Evaluation Milestones			TECHEVAL △		Interoperability Cert △																											
F/A-18																																
Ship																																
LCI																																
DNM																																

R-1 SHOPPING LIST - Item No. 180

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-07					R-1 ITEM NOMENCLATURE 0205620N Surface ASW Combat System Integration			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	27.789	35.106	12.179	11.187	5.332	10.802	11.063	11.266
Q0896 / ASW Combat Systems Integration	0.000	0.000	0.000	0.000	1.262	5.332	5.432	5.534
Q1916 / Surface ASW System Improvements	27.789	35.106	12.179	11.187	4.070	5.470	5.631	5.732

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 The objective of this Program Element (PE) is to significantly improve existing AN/SQQ-89(V) and Surface Ship Sonar System Capabilities. It will improve AN/SQQ-89(V) Measures of Performance (MOP) by enhancing detection, tracking, classification, data processing and display capabilities, and increasing acoustic sensor frequency bandwidth. This PE will take advantage of Acoustic Rapid COTS Insertion (ARCI) type initiatives and the AN/SQQ-89(V) open system architecture to develop and integrate the Multi-Function Towed Array (MFTA) with active sonar bistatics (Echo Tracker Classifier - ETC) and torpedo defense capabilities into the AN/SQQ-89(V) as a backfit program for CG47 (as part of the Cruiser Conversion program) and DDG51 class ships (AN/SQQ-89A(V)15). Via the Peer Review Process (PRP), the AN/SQQ-89A(V)15 system architecture will support technology refresh, maximize software portability, and support interoperability with multiple AEGIS baselines.

Defense Emergency Response Funds (DERF) Funds:
 Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07		PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		27.789	35.106	12.179	11.187	4.070	5.470	5.631	5.732
RDT&E Articles Qty			1						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Surface ASW System Improvements project will support essential performance enhancements on AN/SQQ-89(V) and Surface Ship Sonar Systems. This project will develop and refine active classification and display upgrades to support implementation in both the AN/SQQ-89(V) hull subsystem and the MFTA. This project will integrate the MFTA with active sonar bistatics (ETC) and torpedo defense capabilities into the AN/SQQ-89(V) as a backfit program for CG47 (as part of the Cruiser Conversion program) and DDG51 class ships (AN/SQQ-89A(V)15). This project will contract for the delivery of the AN/SQQ-89A(V)15 Engineering and Development Model (EDM) in FY 2003, with installation planned on a CG47 class ship in FY 2004, and developmental and operational tests scheduled in FY 2004/2005 respectively. Via the PRP and ARCI, evolutionary programs will be incorporated into the AN/SQQ-89A(V)15 system architecture to take advantage of the latest advances in technology, support technology refresh, maximize software portability, and support interoperability with multiple AEGIS baselines. This Project will also develop the AN/SQQ-89(V) design and interface with the Light Airborne Multi-Purpose (LAMPS) Mk III Blk II system.

Congressionally added funds in FY03 (\$11.6M) will continue AN/SQQ-89(V) Surface Undersea Warfare Combat System sensor and signal processing improvements begun under SBIR N97-090. These funds will be used to improve war fighting capabilities on board Flight I and II DDG51 class ships by modernizing the AN/SQQ-89(V) Surface Undersea Warfare Combat System through COTS technical refresh initiatives not included in the Program of Record. Funding will be used to develop and build a system for land based testing as well as a system for roll-on/roll-off at-sea demonstration and testing and evaluation.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Enhance AN/SQQ-89A(V)15 System Architecture	10.351	4.736	5.402	7.187
RDT&E Articles Quantity				

Continue enhancement of AN/SQQ-89A(V)15 system architecture via the incorporation of evolutionary programs through the PRP, development of a common superset software baseline, and ARCI type initiatives that take advantage of the latest advances in technology to support technology refresh, maximize software portability, and modify external interfaces to support interoperability with multiple AEGIS baselines. Also includes the development of improved torpedo detection algorithms to be incorporated into the Torpedo Recognition and Alertment Functional Segment (TRAFS) on AN/SQQ-89(V) platforms.

	FY 02	FY 03	FY 04	FY 05
MFTA, ETC and Torpedo DCL Integration	14.179			
RDT&E Articles Quantity				

Completed integration of MFTA, active sonar bistatic processing (ETC) and torpedo Detection, Classification and Localization (DCL) software into the AN/SQQ-89A(V)15 common superset software baseline.

	FY 02	FY 03	FY 04	FY 05
MFTA Sea Tests	0.275	0.335		
RDT&E Articles Quantity				

Coordinate and conduct test of MFTA performance at sea. Provide report and analysis of findings.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
AN/SQQ-89A(V)15 EDM Delivery and Installation		17.123	1.777	
RDT&E Articles Quantity		1		

FY03: Contract for delivery of AN/SQQ-89A(V)15 EDM, provide associated integration and production support, and coordinate installation efforts.
 FY04: Contract for installation of AN/SQQ-89A(V)15 EDM on board CG47 class ship, provide associated Installation Checkout (INCO) support.

	FY 02	FY 03	FY 04	FY 05
LAMPS Mk III Blk II CAUSS & Ku Band Integration	0.919	0.500	1.000	1.000
RDT&E Articles Quantity				

Continue 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.

	FY 02	FY 03	FY 04	FY 05
AN/SQQ-89(V) Test & Evaluation Program	0.700	0.812	0.686	0.590
RDT&E Articles Quantity				

Provide AN/SQQ-89(V) test and evaluation planning support, update Test & Evaluation Master Plan (TEMP) to reflect AN/SQQ-89A(V)15 test program, coordinate and conduct roll-on roll-off test of the Torpedo Alertment Upgrade (TAU) version 5.0 on a DDG51 class ship, provide performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using MOP and measures of effectiveness (MOE) methods.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
AN/SQQ-89A(V)15 EDM DT/OT			3.314	2.410
RDT&E Articles Quantity				

FY04: Coordinate and conduct developmental test DT-IIIAQ of the AN/SQQ-89A(V)15 EDM and coordinate plan for FY05 operational test OT-IIIK.
 FY05: Coordinate and conduct operational test OT-IIIK of the AN/SQQ-89A(V)15 EDM.

	FY 02	FY 03	FY 04	FY 05
EA Algorithm Transition into AN/SQQ-89A(V)15	1.365			
RDT&E Articles Quantity				

Transition Environmentally Adaptive (EA) algorithms and active sonar parameter control into the AN/SQQ-89A(V)15.

	FY 02	FY 03	FY 04	FY 05
AN/SQQ-89(V) Sensor/Signal Processing Improvements		11.600		
RDT&E Articles Quantity				

Congressionally added funds in FY03 will continue AN/SQQ-89(V) Surface Undersea Warfare Combat System sensor and signal processing improvements begun under SBIR N97-090. These funds will be used to improve war fighting capabilities on board Flight I and II DDG51 class ships by modernizing the AN/SQQ-89(V) Surface Undersea Warfare Combat System through COTS technical refresh initiatives not included in the Program of Record. Funding will be used to develop and build a system for land based testing as well as a system for roll-on/roll-off at-sea demonstration and testing and evaluation.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements		
C. PROGRAM CHANGE SUMMARY:				
	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY03 Pres Controls) :	28.119	24.424	16.609	14.337
Current BES/President's Budget (FY04 President Controls)	27.789	35.106	12.179	11.187
Total Adjustments	-0.330	10.682	-4.430	-3.150
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions	-0.385	-0.462		
Congressional rescissions				
SBIR/STTR Transfer	-0.642			
Economic Assumptions/Rate Adjustments			-0.258	-0.216
Reprogrammings	0.697	-0.456	-4.172	-2.934
Congressional increases *		11.600		
Subtotal	-0.330	10.682	-4.430	-3.150
* Congressionally added funds in FY03 will continue AN/SQQ-89(V) Surface Undersea Warfare Combat System sensor and signal processing improvements begun under SBIR N97-090.				
Schedule: Not Applicable				
Technical: Not Applicable				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-07	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration	PROJECT NUMBER AND NAME Q1916 Surface ASW System Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
2136 AN/SQQ-89 Surf ASW Combat Sys (OPN)	16.2	13.9	0.0	0.0	0.0	0.0	0.0	32.8	Continuing	Continuing
2020 Cruiser Conversion (SCN)										
2122 DDG-51 (SCN)										

E. ACQUISITION STRATEGY:

- Prime Contractor award 2Q FY 2002 (Lockheed Martin, Syracuse, NY)
- Complete AN/SQQ-89A(V)15 EDM 1Q FY 2004, install on-board CG 47 class ship in FY 2004, conduct developmental test in FY 2004 and operational test in FY 2005. Via PRP, incorporate evolutionary technologies into AN/SQQ-89(V) platforms at scheduled intervals.

F. MAJOR PERFORMERS:

- Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic processor, prime contractor for FY03 Congressional Add to continue AN/SQQ-89(V) sensor and signal processing improvements begun under SBIR N97-090
- Applied Hydro-Acoustics Research (AHA), MD - SBIR Phase III contract for common acoustic processor and beamformer processing for MFTA
- Digital System Resources (DSR), VA - SBIR Phase III contract for common acoustic processor
- 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) Production and Design Agent. This contract was competitively awarded in May 2002
- 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

R-1 SHOPPING LIST - Item No. 181

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-07			0205620N Surface ASW Combat System Integration			Q1916 Surface ASW System Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W & S/W Development	C/CPFF	AAC, NY	2.222	8.945	12/02					0.000	11.167	
Primary H/W & S/W Development	C/CPFF	AHA, MD	3.666	1.870	11/02					0.000	5.536	
Primary H/W & S/W Development	C/CPFF	DSR, VA	3.644	2.342	11/02					0.000	5.986	
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	6.669	1.172	10/02	0.784	12/03			0.000	8.625	
Primary H/W & S/W Development	C/CPAF	LOCKHEED MARTIN, NY	36.617	10.837	11/02	4.200	12/03	5.800	12/04	Continuing	Continuing	
Primary H/W & S/W Development	WR	NAVSEA/DAHLGREN, VA	7.776	1.643	10/02	0.648	11/03	0.650	11/04	Continuing	Continuing	
Primary H/W & S/W Development	WR	NAVSEA/NEWPORT, RI	26.829	1.423	10/02	1.552	11/03	0.927	11/04	Continuing	Continuing	
Primary H/W & S/W Development	Var.	Var.	28.221	5.341	Var.	0.687	Var.	0.500	Var.	Continuing	Continuing	
Subtotal Product Development			115.644	33.573		7.871		7.877		Continuing	Continuing	
Remarks: Budgeted for award fees (\$M): 0.208 in FY03, 0.526 in FY04, 0.573 in FY05 (Lockheed Martin, NY). Lockheed Martin's performance has been excellent, earning close to 100% of possible award fee for the most recent award fee periods.												
Engineering & Technincal Svcs (ETS)	Var.	Var.	0.900							0.000	0.900	
Studies, Analyses & Evaluation (SAE)	Var.	Var.	1.500							0.000	1.500	
Subtotal Support			2.400	0.000		0.000		0.000		0.000	2.400	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-07			0205620N Surface ASW Combat System Integration				Q1916 Surface ASW System Improvements					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental & Operational T&E	Var.	Var.	4.164			3.312	Var.	2.410	Var.	Continuing	Continuing	
Miscellaneous T&E	Var.	Var.	3.422	0.812	Var.	0.686	Var.	0.590	Var.	Continuing	Continuing	
Subtotal T&E			7.586	0.812		3.998		3.000		Continuing	Continuing	
Remarks:												
Program Management Support	Var.	Var.	6.436	0.571	Var.	0.160	Var.	0.160	Var.	Continuing	Continuing	
Travel	Var.	Var.	1.154	0.150	Var.	0.150	Var.	0.150	Var.	Continuing	Continuing	
			7.590	0.721		0.310		0.310		Continuing	Continuing	
Remarks:												
Total Cost			133.220	35.106		12.179		11.187		Continuing	Continuing	
Remarks:												

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration				Q1916 Surface ASW System Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	1Q-3Q							
Active/Passive Data Collection (PCO-Ops)	2Q							
Contract Award to Lockheed Martin	3Q							
Contracts Requirements Review (CRR)	3Q							
Initial Software Delivery to System Integrator	4Q							
System Integration Requirements Review (SIRR)	4Q							
Government Acceptance Test (GAT)	4Q	1Q-2Q						
Integrated Baseline Review (IBR)		1Q						
EDM Material Ordered		1Q						
System Integration Baseline Review (SIBR)		2Q						
Final Software Delivery to System Integrator		2Q						
System Integration Design Review (SIDR)		3Q						
EDM Assembly Begins		3Q						
DESRON 15 SHAREM		3Q						
EDM Test		4Q	1Q					
Test Readiness Review (TRR)			1Q					
System Qualification Test (SQT)			2Q					
EDM Delivery			2Q					
Developmental Test DT-III AQ			3Q-4Q					
Preproduction Readiness Review (PRR)			4Q					
Operational Test (OT-III K)				2Q				
Initial Operational Capability (IOC)				4Q				
Production Delivery to CG47 Class Ship (1)				4Q				
Production Delivery to CG47 Class Ships (2,3)					4Q			
Peer Review Process S/W / H/W Drop - Build 1						1Q		
Contract Award						2Q		
Production Delivery to CG47 Class Ships (4,5)						4Q		
Production Delivery to CG47 Class Ships (6,7)							4Q	
Peer Review Process S/W / H/W Drop - Build 2								1Q
Production Delivery to CG47 Class Ships (8,9)								4Q

R-1 SHOPPING LIST - Item No. 181

UNCLASSIFIED

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

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	19.320	21.499	17.227	24.234	24.823	30.039	30.557	31.106
MK48 ADCAP/F0366	19.320	21.499	17.227	24.234	24.823	30.039	30.557	31.106
Quantity of RDT&E Articles								

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

(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 has 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. Full rate production and IOC are scheduled for FY06. The intent of the CBASS program is to achieve improvements in shallow water torpedo performance over current (MK48 Mod 5) capability.

(U) The introduction of the Torpedo Technology Insertion program in FY04 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.

R-1 SHOPPING LIST - Item No. 182

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 9)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N
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B. Accomplishments/Planned Program

TORPEDO APB	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.666	8.188	8.334	8.670
RDT&E Articles Quantity				

FY02- Torpedo Advanced Processor Build efforts continued in order to address fleet identified performance priorities for MK48 ADCAP MODS. 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. Conducted validation of safety features for submarine crew safety.

FY03 - FY05 Torpedo Advanced Processor Build efforts continue in order to address fleet identified performance priorities for MK48 ADCAP MODS and to address broadband algorithms. Provides rapid delivery of incremental software improvements to fielded MODS torpedoes every 12-18 months. Efforts include software coding, modeling and simulation of software releases (including development and validation of models) and engineering tests in water for evaluation of proposed releases. Conduct Follow-On Test and Evaluation of . MK48 ADCAP MODS per TEMP. Conduct validation of safety features for submarine crew safety

CBASS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.294	8.751	4.993	7.925
RDT&E Articles Quantity				

FY02- Initiated fabrication of CBASS EDM hardware. Continued development of advanced wideband algorithms, signal processing, and tactical software. Continued integration of CBASS prototype hardware and software components and test equipment. Continued in-water testing to support algorithm development and initial software builds.

FY03- Integration and delivery of CBASS EDM hardware. Continue development of advanced wideband algorithms, signal processing, and tactical software. Continue integration of CBASS prototype hardware and software components and test equipment. Continue in-water testing to support algorithm development and initial software builds.

FY04- Continue integration of CBASS prototype hardware and software components and test equipment. Conduct software testing, modeling and simulation predictions, and initial check-out in-water testing of EDM vehicles.

FY05- Conduct in-water developmental testing, technical and operational testing with CBASS EDM vehicles. Efforts include torpedo preparations, model validation, post-run analysis, and range preparations.

R-1 SHOPPING LIST - Item No. 182

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 9)

UNCLASSIFIED

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N
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B. Accomplishments/Planned Program (Cont.)

OPTEVFOR	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.360	0.560	0.400	0.500
RDT&E Articles Quantity				

FY02-FY05 Provided for COMOPTEVFOR trusted agent test analysis and model validation support.

TACDEVEX 01-03	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		4.000		
RDT&E Articles Quantity				

FY03- Conduct developmental testing of MK48 ADCAP Mod 6 in cold water, littoral environments. Efforts include torpedo preparations, modeling and simulation predictions, post-run analysis, and preparations for required submarine hit-shot certification analysis prior to exercise.

TECHNOLOGY INSERTIONS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.500	7.139
RDT&E Articles Quantity				

FY04- Transition torpedo technologies selected under Torpedo Technology Insertion program. Perform military worth tradeoff studies to evaluate and identify the candidate advanced technologies that would provide the greatest performance improvement or increased capability. Define a series of spiral development packages of several hardware improvements and to build on proven torpedo hardware platforms. Start development efforts (including planning and systems engineering) that would implement these new technologies into the latest MK48 ADCAP torpedoes.

FY05- Transition torpedo technologies selected under Torpedo Technology Insertion program. Award contracts to industry to develop technologies. Continue analysis of available technology solutions against desired performance objectives, and continue integration of first technology insertion package.

BTR 64515	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.000			
RDT&E Articles Quantity				

FY02- Awarded contract to develop three (3) underwater test vehicles.

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: February 2003		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7		R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N		
C. PROGRAM CHANGE SUMMARY:				
Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	16.979	22.052	23.073	30.182
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)	19.320	21.499	17.227	24.234
Total Adjustments	2.341	-0.553	-5.846	-5.948
Summary of Adjustments				
Reprogrammings	2.903	-0.128	-5.530	-5.559
FY2002 SBIR (dtd 5-15-02)	-0.146			
Congressional undistributed reductions	-0.036			
Economic Assumptions	-0.380	-0.425	-0.316	-0.389
Subtotal	2.341	-0.553	-5.846	-5.948
Schedule: Not applicable.				
Technical:				
FY04-05: Limit scope of tradeoff studies, Torpedo APB systems engineering and Algorithm development as a result of USN directed general reductions.				

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: February 2003				
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7						MK48 ADCAP/0205632N				
D. OTHER PROGRAM FUNDING SUMMARY:										
	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	CONT.
MK48 ADCAP MODS (WPN/PE0204284N/BA-3/P-1 Item 322500)	41.617	60.934	60.372	61.893	62.872	63.952	65.457	66.692		
Sub. Tactical Warfare Systems (RDT&E/PE0603562N/BA-4/S1739)	9.120	13.075	6.027	6.350	7.062	10.387	10.489	10.775		
Advanced Submarine Systems (RDT&E/PE0603561N/BA4/S9039)	122.614	129.601	52.744	158.595	74.686	75.290	272.209	319.708		
E. ACQUISITION STRATEGY:										
CBASS EMD contract was competitively awarded among qualified ADCAP producers.										
F. MAJOR PERFORMERS:										
NUWC Division Newport, Newport, RI - Continued integration of CBASS prototype hardware and software components and test equipment. Continued in-water testing to support algorithm development and initial software builds.										
Northrop Grumman, Annapolis, MD - Initiated fabrication of CBASS EDM hardware and delivered two (2) rackmount systems.										

R-1 SHOPPING LIST - Item No. 182

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 5 of 9)

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Exhibit R-3 Cost Analysis (page 1)	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA-7		MK48 ADCAP/0205632N			MK48 ADCAP/F0366							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NUWC NPT	CONT.	0.000	10/02	1.254	10/03	1.885		CONT.	CONT.	N/A
Primary Hardware Development	Various	Various	0.000	0.000		1.700	11/03	4.089	11/04	CONT.	CONT.	N/A
Primary Hardware Development	C,CPIF	Northrop Grumman	27.916	3.111	11/02	0.000		0.000		0.000	31.027	31.027
Ancillary Hardware Development	C,CPFF	TRI / Austin	0.000	0.075	12/03							
Systems Engineering	WR	NUWC NPT	CONT.	7.135	10/02	3.378	10/03	5.036	10/04	CONT.	CONT.	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			CONT.	10.321		6.332		11.010		CONT.	CONT.	

Remarks: Total Cost and Target Value of Contract represents contract Latest Revised Estimate based on completed negotiations and CBASS hardware technical requirements.

Development Support Equipment												
Software Development	WR	NUWC NPT	CONT.	2.529	10/02	4.317	10/03	3.678	10/04	CONT.	CONT.	N/A
Software Development												N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			CONT.	2.529		4.317		3.678		CONT.	CONT.	

Remarks:

R-1 SHOPPING LIST - Item No. 182

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

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-7			MK48 ADCAP/0205632N				MK48 ADCAP/F0366					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	NUWC NPT	CONT.	4.112	10/02	3.004	10/03	5.734	10/04	CONT.	CONT.	N/A
Operational Test & Evaluation	WR	OPTEVFOR	CONT.	0.560	11/02	0.400	11/03	0.500	11/04	CONT.	CONT.	N/A
Modeling & Simulation	WR	NUWC NPT	CONT.	2.080	10/02	1.236	10/03	1.338	10/04	CONT.	CONT.	N/A
Modeling & Simulation	Various	Various	CONT.	1.000	11/02	1.150	11/03	1.150	11/04	CONT.	CONT.	N/A
GFE												
Subtotal T&E			CONT.	7.752		5.790		8.722		CONT.	CONT.	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Anteon	CONT.	0.500	MISC.	0.500	MISC.	0.500		CONT.	CONT.	N/A
Travel				0.045		0.045		0.045		CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead				0.352		0.243		0.279		CONT.	CONT.	N/A
Subtotal Management			CONT.	0.897		0.788		0.824		CONT.	CONT.	
Remarks:												
Total Cost			CONT.	21.499		17.227		24.234		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 182

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 9)

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EXHIBIT R-4, Schedule Profile	DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7	R-1 ITEM NOMENCLATURE MK48 ADCAP/0205632N

PROGRAM EFFORTS	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Torpedo Advanced Processor Builds		ADCAP Mods DT/FOT&E △ ▽	△	ADCAP Performance Upgrades based on Fleet Priorities △		△	△	→
CBASS Development	Engineering Tests in Support of CBASS Algorithm and Software Development			DT/OT ▽ △ ▽	OPEVAL △ ▽			
Torpedo Technology Insertion			△		△ MSIII Tech Insertion Package #1 DT/OT △ ▽ △			Tech Insertion Package #2 DT/OT △ ▽ △
				△ SDR △ PDR △ CDR			△ SDR △ PDR △ CDR	

R-1 SHOPPING LIST - Item No. 182

Exhibit R-4, RDT&E Budget Item Justification
(Exhibit R-4, page 8 of 9)

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Exhibit R-4a, Schedule Detail						DATE:		
						February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N/BA-7	MK48 ADCAP/0205632N				MK48 ADCAP/F0366			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Torpedo Advanced Processor Build								
Developmental/Operational Testing		2Q-3Q						
Software Delivery			1Q	3Q		1Q	3Q	
CBASS Development								
Engineering Tests	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q				
Algorithm Development	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q				
Developmental/Operational Testing				3Q-4Q				
Operational Evaluation (OPEVAL)					1Q-2Q			
Milestone III (MSIII)					2Q			
Torpedo Technology Insertion								
Study Phase/System Development			1Q-4Q					
System Design Review (SDR)				1Q				
Priliminary Design Review (PDR)				3Q				
Critical Design Review (CDR)				4Q				
Developmental/Operational Testing					1Q-2Q			
Technology Insertion Package #1					4Q			
Study Phase/System Development						1Q-4Q		
System Design Review (SDR)							1Q	
Priliminary Design Review (PDR)							3Q	
Critical Design Review (CDR)							4Q	
Developmental/Operational Testing								1Q-2Q
Technology Insertion Package #1								4Q

R-1 SHOPPING LIST - Item No. 182

Exhibit R-4a, RDT&E Budget Item Justification

(Exhibit R-4a, page 9 of 9)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				R-1 ITEM NOMENCLATURE 0205633N, AVIATION IMPROVEMENTS				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	49.976	39.928	60.073	54.431	58.108	56.891	52.399	53.192
W0601 Common Ground Equipment	3.489	3.361	3.166	2.660	2.697	2.742	2.818	2.869
W0852 Consolidated Automated Support System (CAS)	6.000	6.594	6.442	6.390	6.493	6.597	6.737	6.862
W1041 A/C Equip Reliability/Maintainability Improve	2.406	0.606	1.447	2.078	3.020	3.123	2.369	2.875
W1355 Aircraft Engine CIP	34.292	29.367	49.018	43.303	45.898	44.429	40.475	40.586
W9109 Aircraft Exploration Model Development	2.424							
W9110 Nano-Composite Hard-Coat for A/C Coatings	1.365							

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 aircraft. 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. 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. The 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. Nano-Composite Hard-Coat for Aircraft Coatings is evaluation of erosion coatings for propulsion systems.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements			PROJECT NUMBER AND NAME W0601 Common Ground Equipment			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	3.489	3.361	3.166	2.660	2.697	2.742	2.818	2.869
RDT&E Articles Qty								

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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0601 Common Ground Equipment

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.677			
RDT&E Articles Quantity				

Advanced Boresight Equipment (ABE) - Provides the capability to do quick and accurate boresight operations without the current limitations. ABE is specified to do a complete boresight in less than one (1) hour, including the mounting of adapters. Will allow for other maintenance operations to continue concurrently with the boresighting operation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.727	2.111	2.781	2.162
RDT&E Articles Quantity				

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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.085	1.250		
RDT&E Articles Quantity				

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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0601 Common Ground Equipment

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.385	0.498
RDT&E Articles Quantity				

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

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0601 Common Ground Equipment			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		3.328	3.444	3.488	2.991
Current BES/President's Budget		3.489	3.361	3.166	2.660
Total Adjustments		0.161	-0.083	-0.322	-0.331
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.020		
Congressional rescissions		-0.007			
SBIR/STTR Transfer		-0.032			
Economic Assumptions		-0.010	-0.063	-0.101	-0.073
Reprogrammings		0.000			
Other Adjustments		0.210		-0.221	-0.258
Congressional increases					
Subtotal		0.161	-0.083	-0.322	-0.331
Schedule:					
JETI MSIII slipped from 03/02 to 06/02 due to the delay in completion of Technical Evaluation. ABE Award slipped from 01/02 to 05/02 due to a restructuring of the program.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 183

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0601 Common Ground Equipment
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN 070500 Ground Support Equipment Related RDT&E: Not Applicable	135.971	160.762	195.179	198.385	196.141	188.627	184.974	173.9	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.

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N Aviation Improvements			W0601 Common Ground Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	12.837	1.624	02/03	2.305	02/04	1.681	03/05	Continuing	Continuing	
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	Various	Various				0.501	02/04	0.614	03/05	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			12.837	1.624		2.806		2.295		Continuing	Continuing	
Remarks:												
Development Support	Various	Various	4.139	1.687	02/03	0.035	12/03	0.030	12/04	Continuing	Continuing	
Software Development												
Integrated Logistics Support	Various	Various				0.060	12/03	0.060	12/04	Continuing	Continuing	
Configuration Management												
Technical Data												
Studies & Analyses	Various	Various				0.030	12/03	0.030	12/04	Continuing	Continuing	
GFE												
Award Fees												
Subtotal Support			4.139	1.687		0.125		0.120		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N Aviation Improvements			W0601 Common Ground Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E - SETI	Various	Various	1.034	0.050	02/03						1.084	
DT&E - NGMH	Various	Various				0.060	12/03			Continuing	Continuing	
DT&E - TETI	Various	Various						0.080	12/04	Continuing	Continuing	
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			1.034	0.050		0.060		0.080		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various				0.025	12/03	0.025	12/04	Continuing	Continuing	
Government Engineering Support	Various	Various				0.060	12/03	0.050	12/04	Continuing	Continuing	
Program Management Support	Various	Various				0.075	12/03	0.075	12/04	Continuing	Continuing	
Travel	Various	Various				0.015	12/03	0.015	12/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.175		0.165		Continuing	Continuing	
Remarks:												
Total Cost			18.010	3.361		3.166		2.660		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements								PROJECT NUMBER AND NAME W0601 Common Ground Equipment												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones NGMH																																
MS A																																
MS B																																
MS C																																
Prototype Phase																																
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
Test & Evaluation Milestones NGMH																																
Development Test																																
Operational Test																																
Production Milestones NGMH																																
LRIP FY 07																																
FRP FY 09																																
LRIP																																
FRP Start																																
Deliveries NGMH																																
LRIP (3)																																

R-1 SHOPPING LIST - Item No. 183

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

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Exhibit R-4a, Schedule Detail						DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT					PROJECT NUMBER AND NAME			
RDT&BA-7	0205633N Aviation Improvements					W0601 Common Ground Equipment			
Schedule Profile NGMH	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Prototype Phase		2Q-4Q	1Q-4Q	1Q-2Q					
Milestone A		2Q							
Developmental Testing				3Q-4Q	1Q-4Q				
Milestone B				4Q					
Operational Testing						1Q-4Q	1Q		
Start Low-Rate Initial Production (LRIP)						1Q-4Q	1Q-2Q		
Milestone C							1Q		
Low-Rate Initial Production I Delivery							2Q		
Full Rate Production Start								1Q	

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 10 of 39)

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements			PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	6.000	6.594	6.442	6.390	6.493	6.597	6.737	6.862
RDT&E Articles Qty								

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 electro-optics capability to support the ATFLIR, multi-analog test capability to enable functional testing, and CASS station modernization elements.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.509	3.829	2.000	
RDT&E Articles Quantity				

Synthetic Instrument Package

Provides for development, integration and test of a package of synthetic instruments which will enable the replacement of several discrete test instruments with synthetic instruments. Objectives are significantly improve technical performance, ameliorate obsolescence, lower ownership costs of CASS, and reduce footprint.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.491	2.765	1.000	1.000
RDT&E Articles Quantity				

CASS Station Upgrades

Provides technologies for upgrading CASS station test capability to test emerging weapon system requirements. Includes development of an inertial reference capability to facilitate support of Inertial Measurement Systems as well as modifications to the design of RTCASS necessitated by technical problems encountered during DT&E.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.000	0.659
RDT&E Articles Quantity				

Electro-Optic capability

Developes a downsized electro-optic support system to enable RTCASS to provide support for Marine Air FLIR and LASER Targeting systems.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.442	4.731
RDT&E Articles Quantity				

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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0205633N Aviation Improvements	W0852 Consolidated Automated Support System			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		6.682	6.757	6.740	6.707
Current BES/President's Budget		6.000	6.594	6.442	6.390
Total Adjustments		-0.682	-0.163	-0.298	-0.317
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.039		
Congressional rescissions		-0.014			
SBIR/STTR Transfer		-0.144			
Economic Assumptions		-0.017	-0.124	-0.172	-0.170
Reprogrammings		-0.507			
Other Adjustments				-0.126	-0.147
Congressional increases					
Subtotal		-0.682	-0.163	-0.298	-0.317
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN 070500 CASS Related RDT&E: Not Applicable	96.409	88.562	92.698	74.14	87.172	88.926	90.619	92.229	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. Synthetic Instrument Package (SIP) program leverages on a Joint Services initiative with Boeing. Boeing competitively selects the CIP supplier.

F. MAJOR PERFORMERS:

Not applicable

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N Aviation Improvements			W0852 Consolidated Automated Support System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development - SI	Various	Various	6.517	3.829	03/03	1.460	03/04			Continuing	Continuing	
Hardware Development - Upgrades	Various	Various	20.652	2.465	Various	0.750	Various	0.750	Various	Continuing	Continuing	
Hardware Development - EO	TBD	TBD				1.500	Various	0.600	Various	Continuing	Continuing	
Hardware Development - Mod	TBD	TBD				1.042	Various	3.831	Various	Continuing	Continuing	
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			27.169	6.294		4.752		5.181		Continuing	Continuing	
Remarks:												
Development Support - SI	TBD	TBD				0.240	Various			Continuing	Continuing	
Development Support - Upgrades	TBD	TBD				0.250	Various	0.250	Various	Continuing	Continuing	
Development Support - EO	TBD	TBD				0.500	Various	0.059	Various	Continuing	Continuing	
Development Support - Mod	TBD	TBD				0.400	Various	0.600	Various	Continuing	Continuing	
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		1.390		0.909		Continuing	Continuing	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N Aviation Improvements			W0852 Consolidated Automated Support System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E												
DT&E												
DT&E												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel	WX	NAWCAD, Patuxent River, MD	0.300	0.300	12/02	0.300	12/03	0.300	12/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			0.300	0.300		0.300		0.300		Continuing	Continuing	
Remarks:												
Total Cost			27.469	6.594		6.442		6.390		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements										PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Synthetic Instruments Contract Award			▲																													

R-1 SHOPPING LIST - Item No. 183

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

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&BA-7		PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME W0852 Consolidated Automated Support System			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Synthetic Instruments Contract Award	1Q-3Q								

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	2.406	0.606	1.447	2.078	3.020	3.123	2.369	2.875
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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements	PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.250	0.225	0.000	0.000
RDT&E Articles Quantity				

Aircraft Canopy Crazing Mitigation

Canopies on navy aircraft craze much more rapidly than the counterparts in the Air Force and commercial aviation. This effort is to address the interactions of the canopy materials, the Navy (salt water) environment and the chemicals used to clean and maintain the canopies to determine the mechanisms responsible for the premature crazing. The deliverable will be a report detailing the finding and changes to the maintenance practices as required to increase the life of the canopies.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.264	0.000	0.000	0.000
RDT&E Articles Quantity				

Corrosion Preventative Compounds

Over the last decade a number of corrosion preventative compounds have been developed claiming significant improvement in corrosion protection while also promising reduced maintenance burden to maintain. Individual products had been qualified to a MIL-Spec but no efforts have been made to comparatively test the family of products to determine the best products and practices. This effort will result in quantifiable assessment of the current state of the art and the required validation for the best of breed to be implemented into the fleet as the best practice.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.892	0.081	0.152	0.402
RDT&E Articles Quantity				

Investigate High Value Return on Investment Candidates

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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements	PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.150	0.300	0.335
RDT&E Articles Quantity				

Corrosion Barriers Tapes and Films

Over the last decade a number of barrier protection products (Applique', Av DEC, Gore gaskets, etc...) have been developed claiming significant improvement in corrosion protection while also promising reduced maintenance burden to maintain. Individual products have been investigated but no effort have been made to comparatively test the family of products to determine the best products and practices. This effort will result in quantifiable assessment of the current state of the art and the required validation for the best of breed to be implemented into the fleet as the best practice. Effort follows and compliments recently completed effort on corrosion preventative compounds and continues the efforts for a complete corrosion protection plan.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.150	0.300	0.000
RDT&E Articles Quantity				

Arc Fault Circuit Breaker

The previous tests installed six arc fault circuit breakers (AFCB) after testing the AFCB at Naval Air Station (NAS) Patuxent River for shock, vibration, electrical, electromagnetic interference (EMI), temperature and altitude. The AFCB were flown in the C-9B aircraft for six months accumulating over 300 flights and over 500 flight hours. However, no system level tests for AFCB were performed. This effort is to install approximately 80 - 115 volt, 400 Hz single phase AFCB on a C-9 Cargo/Transport aircraft to prevent arcing faults from starting fires. The test would show that on a commercial jet aircraft that the AFBC would work through system level Electro Magnetic Compatability (EMC) and lighting events.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.375	0.460
RDT&E Articles Quantity				

ASQ-208

Project will flight test and qualify a digital magnetic abnormality detector (MAD) to replace the current poor performing MAD. New equipment will reduce the number of sub-assemblies from 13 to 4 and reduce the space, weight and power consumption required by the old unit.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements	PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.320	0.535
RDT&E Articles Quantity				

APN-202 Improvement Program

Perform validation/verification of replacement APN-202 system

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.346
RDT&E Articles Quantity				

Smart Wire

Effort will validate and transition Office of Naval Research (ONR) funded technology development by conducting full aircraft flight test and developing plans and procedures for fleet wide implementation.

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements	PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)
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C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget	0.622	0.620	0.631	0.534
FY 2004 President's Budget	2.406	0.606	1.447	2.078
Total Adjustments	1.784	-0.014	0.816	1.544

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.003		
Congressional rescissions	-0.001			
SBIR/STTR Transfer				
Economic Assumptions	-0.002	-0.011	-0.046	-0.057
Reprogrammings	1.787			
Other Adjustments			0.862	1.601
Congressional increases				
Subtotal	1.784	-0.014	0.816	1.544

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements	PROJECT NUMBER AND NAME W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
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Related RDT&E:
0205633N, Aircraft Exploration Model Development, W9109

E. ACQUISITION STRATEGY:

Not applicable

F. MAJOR PERFORMERS:

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N, Aviation Improvements			W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses	WX	NAWCAD Patuxent River, MD	8.659	0.354	10/02	1.267	10/03	1.858	10/04	Continuing	Continuing	
GFE												
Award Fees												
Subtotal Support			8.659	0.354		1.267		1.858		Continuing	Continuing	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0205633N, Aviation Improvements			W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	ss/cpff	Raytheon, Indianapolis, IN	0.720	0.090	11/02	0.090	11/03	0.090	11/04	0.900	1.890	1.890
Contractor Engineering Support	ss/cpff	Lockheed, Marietta, GA	0.000	0.112	11/02						0.112	0.112
Program Management Support	WX	NAWCAD, Patuxent River, MD		0.040	10/02	0.080	10/03	0.120	10/04	Continuing	Continuing	
Travel	WX	NAWCAD, Patuxent River, MD		0.010	10/02	0.010	10/03	0.010	10/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			0.720	0.252		0.180		0.220		Continuing	Continuing	
Remarks:												
Total Cost			9.379	0.606		1.447		2.078		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															0205633N, Aviation Improvements				W1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)													
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Canopy Cracking	██████████																															
Corrosion Preventative Compounds	██████████																															
Corrosion Barriers Tapes and Films					██████████				██████████				██████████																			
High Value Return on Investment	██████████				██████████				██████████				██████████				██████████				██████████				██████████							
Arc Fault Circuit Breaker					██████████				██████████																							
ASQ-208									██████████				██████████				██████████															
Smart Wire													██████████				██████████				██████████				██████████							
APN-202									██████████				██████████				██████████															

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements			PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	34.292 [*]	29.367	49.018	43.303	45.898	44.429	40.475	40.586
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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

* DERF funding of \$3.3 Million received in FY 2002.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.886	1.957	2.228	2.023
RDT&E Articles Quantity				

T56 Engine (P-3, E-2, C-2, C-130)

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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.501	1.127	0.743	0.675
RDT&E Articles Quantity				

E-2/C-2/C-130

Incorporate improved blade heaters. Develop improved propeller control system.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.222	0.756	1.152	1.047
RDT&E Articles Quantity				

S-3

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. Collecte 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.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.600	2.537	2.254	2.047
RDT&E Articles Quantity				

Mature Aircraft

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 Wittnev Associates.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.628	0.613	0.524	0.476
RDT&E Articles Quantity				

H-2/H-60

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 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.320	3.240	6.030	5.475
RDT&E Articles Quantity				

AV-8B

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.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.672	1.632	3.511	3.190
RDT&E Articles Quantity		.		

H-53/H-46/H-3

Bleed valve redesign. Efforts on the top cause for engine removals; improv on wing times; addressed top safety concerns as ranked by the Operational Advisory Group (OAG); reliability-centered maintenance program; improv 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 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.628	0.613	1.887	1.714
RDT&E Articles Quantity				

H-1

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 (T700 and T400); addressed Blisk, Rear Shaft, Spacer & Tierod Life Update (T700), development of environmentally friendly repairs such as High Velocity OXY fuel coatings to replace chrome and nickel plate repairs; and development of Durability Project (T700-401/-401C), N5 Blades w/ tip cap & Nozzles, T700 TiN Coating (Test Articles, Corrosion/Erosion/Full Sand Engine Testing), T700 Diagnostics Life Mgt Performance Evaluation (IMD), T700 Diagnostics (Performance Evaluation), Durability Project (T700-401/-401C), T700 TiN Coating (Pending Pass/Fail... Incorp TiN), EPAMs Mission Update to 4BN, T700 Diagnostics (Performance Evaluation), T400 Improved Compressor Turbine Stub Shaft, T400 Improved Gas Generator Case Diffuser Inlet, T400 Improved Compressor Coating, T400 Life Management, Study T400 Parts Obsolescence.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.100	2.049	0.631	0.574
RDT&E Articles Quantity				

F-14B/D

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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.200	3.200	10.964	9.956
RDT&E Articles Quantity				

F-18 C/D/E/F

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 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.327	3.500	3.027	2.749
RDT&E Articles Quantity				

T-45

Address top safety issues reported from fleet. Analysis and redesign components with service revealed deficiencies.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.317
RDT&E Articles Quantity				

V-22

Begin transition of T406 engine from EMD program to CIP efforts. Establish life management plan and critical parts tracking requirements. Address design issues as required.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program
-------------------------------------------------------------	-------------------------------------------------------------------	--------------------------------------------------------------------------------

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	16.208	8.143	16.067	13.060
RDT&E Articles Quantity				

Multi-Platform Product Support Teams
 Projects designed to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improv products and processes for fuels, lubricants, and refueling equipment; improv blade and vane repair processes and life cycle support; and improv electrical system product support, wiring, and battery systems.

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

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget		30.431	30.094	37.588	28.065
Current BES/President's Budget		34.292	29.367	49.018	43.303
Total Adjustments		3.861	-0.727	11.430	15.238
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.177		
Congressional rescissions		-0.065			
SBIR/STTR Transfer		-0.458			
Economic Assumptions		-0.083	-0.550	-1.300	-1.084
Reprogrammings		-0.096			
Other Adjustments		-0.037		12.730	16.322
Congressional increases (DERF)		4.600			
Subtotal		3.861	-0.727	11.430	15.238
Schedule: Not applicable					
Technical: Not Applicable					

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements	PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program												
<p>D. OTHER PROGRAM FUNDING SUMMARY:</p> <p><u>Line Item No. & Name</u></p> <p>PE 0203752A (Aircraft Engine CIP Army) PE 0207268F (Aircraft Engine CIP Air Force) PE 0602236N (Turbine Engine Improvement, TOC FNC) PE 0603236N (Turbine Engine Improvement, TOC, FNC) PE 0602114N (UAV Propulsion Autonomous Operations FNC) PE 0603114N (UAV Propulsion Autonomous Operations FNC)</p> <p>E. ACQUISITION STRATEGY:</p> <p>Not applicable</p> <p>F. MAJOR PERFORMERS:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Major Performer</u></th> <th style="text-align: left;"><u>Location</u></th> <th style="text-align: left;"><u>Description of Work</u></th> <th style="text-align: left;"><u>FY03 Amt & Award Date</u></th> <th style="text-align: left;"><u>FY04 Amt & Award Date</u></th> <th style="text-align: left;"><u>FY 05 Amt & Award Date</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			<u>Major Performer</u>	<u>Location</u>	<u>Description of Work</u>	<u>FY03 Amt & Award Date</u>	<u>FY04 Amt & Award Date</u>	<u>FY 05 Amt & Award Date</u>						
<u>Major Performer</u>	<u>Location</u>	<u>Description of Work</u>	<u>FY03 Amt & Award Date</u>	<u>FY04 Amt & Award Date</u>	<u>FY 05 Amt & Award Date</u>									

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0205633N Aviation Improvements				W1355 Aircraft Engine Component Improvement Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Eng F110 Engine Program	SS/CPAF	GE- OHIO	16.986	2.049	12/02	0.631	12/03	0.574	12/04		20.240	20.240
Systems Eng F402 Engine Program	SS/CPFF	ROLLS ROYCE - UK	25.222	3.240	12/02	6.030	12/03	5.475	12/04		39.967	39.967
Systems Eng F404/T58/T64 Engine	SS/CPFF	GE - MASS	32.199	1.632	12/02	3.511	12/03	3.190	10/04		40.532	40.532
Systems Eng J52 Engine Program	SS/CPFF	P&W - FLORIDA	11.506	2.537	12/02	1.503	12/03	1.365	12/04		16.911	16.911
Systems Eng T56 Engine Program	SS/CPFF	INDIANA	7.653	1.957	02/03	2.228	02/04	2.023	02/05		13.861	13.861
Systems Eng F405 Engine Program	SS/CPAF	ROLLS ROYCE - UK	6.692			3.027	12/03	2.749	12/04		12.468	12.468
Systems Eng F/A 18E/F Engine Prog	SS/CPFF	GE - MASS	0.664			10.964	12/03	9.956	12/04		21.584	21.584
Systems Eng T700 Engine Program	SS/CPFF	GE - MASS	5.841	1.225	01/03	1.048	01/04	0.951	01/05		9.065	9.065
Systems Eng TF34 Engine Program	SS/CPFF	GE - MASS	5.657	0.756	11/02	1.152	11/03	1.047	11/04		8.612	8.612
Systems Eng V22 Engine Program	SS/CPFF	ROLLS ROYCE - INDIANA	1.000					0.317	12/04		1.317	1.317
Systems Eng T400 Engine Program	SS/CPFF	P&W - FLORIDA				1.887	11/03	1.714	12/04		3.601	3.601
Systems Eng J85 Engine Program	SS/CPFF	GE - OK				0.751	12/03	0.682	11/04		1.433	1.433
Systems Eng Props Program	SS/CPFF	HAM SUNSTRAND - CONN	5.550	1.127	12/02	0.743	12/03	0.675	12/04		8.095	8.095
Systems Eng Contracts under 1.0M	VARIOUS	VARIOUS	12.966	1.171	10/02	1.645	10/03	1.666	10/04	Continuing	Continuing	
Systems Eng Lab Field Activity (1.0 or m	WX	NAWCAD-PAX	110.118	11.185	10/02	11.860	10/03	9.052	10/04	Continuing	Continuing	
Systems Eng Other In-House Support (1	VARIOUS	VARIOUS	15.330	0.820	10/02	1.150	10/03	1.091	10/04	Continuing	Continuing	
GFE-GFP Fuel Increment	MILSTRIP	DES/DLA	4.355	0.351	10/02	0.351	10/03	0.360	10/04	Continuing	Continuing	
Award Fees**	SS/CPAF		1.060	0.439							1.499	1.499
Subtotal Product Development			262.799	28.489		48.481		42.887		Continuing	Continuing	

Remarks:

* F110 (F14 B/D) AF contract has a ten year period of performance.

** Award fees for F110, F402 (.210), F402 (.240).

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			Program Element (PE) No. and Name			Project Unit (PU) No. and Name						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	2.694	0.146	10/02	0.067	10/03	0.053	10/04	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			2.694	0.146		0.067		0.053		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	1.023	0.098	10/02	0.067	10/03	0.053	10/04	continuing	Continuing	
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			1.023	0.098		0.067		0.053		Continuing	Continuing	
Remarks:												
Total Cost			270.962	29.367		49.018		43.303		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 183

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 39 of 39)

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205658N
PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY INNOVATION OFFICE

COST: (Dollars in Thousands)

PROJECT NUMBER/TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R0834 Laboratory Fleet Support	6,981	4,685	3,708	3,849	3,952	4,777	4,857	4,942
R2371 Lash Hyperspectral	4,131	-	-	-	-	-	-	-
R2701 Lash Study	4,898	1,659	-	-	-	-	-	-
R9111 Littoral/Mine Countermeasures Rapid Response	4,131	6,637	-	-	-	-	-	-
Total	20,141	12,981	3,708	3,849	3,952	4,777	4,857	4,942

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Fleet/Force Technology Innovation Office (NFFTIO) 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, NFFTIO facilitates and disseminates the Command Capability Issues (CCIs) provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). NFFTIO also collaborates with the F/F to identify specific solutions to known operational capability needs and provides the means to develop and demonstrate prototype systems. The result is that NFFTIO provides insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term S&T programs. The program also develops leaders among the civilian scientists and engineers in the Naval Research Enterprise (NRE). Upon completion of their Science Advisor tours, the scientists and engineers return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. NFFTIO 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 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205658N
PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY INNOVATION OFFICE

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget Submission:	18,480	4,801	4,923	4,770
Adjustments from FY 2003 President's Budget:				
Congressional Plus-ups		8,500		
Post-Production R&D Continuation			-578	-690
ACTD offsets			-66	-80
NWCF Rate Adjustments			-11	+6
Cong Recissions/Adjustments/Undist. Reductions	-88	-151		
Efficiencies at NWCF Activities			-71	-74
Non-S&T R&D Offset			-404	
Pay Raise/Inflation Adjustments		-169	-85	-83
Execution Adjustments	2,103			
SBIR Assessment	-354			
FY 2004/2005 President's Budget Submission:	20,141	12,981	3,708	3,849

PROGRAM CHANGE SUMMARY EXPLANATION:

Schedule: Not applicable
Technical: Not applicable

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205658N Project Number: R0834
PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY INNOVATION OFFICE Project Title: Laboratory Fleet Support

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
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R0834 Naval Fleet/Force Technology Innovation Office	6,981	4,685	3,708	3,849	3,952	4,777	4,857	4,942
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A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of the Naval Fleet/Force Technology Innovation Office (NFFTIO) is to ensure that the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T), develop teaming relationships to rapidly demonstrate and transition technology, support development of technology-based capability options for naval forces, and enable 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 on-the-spot Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands worldwide. In addition, NFFTIO facilitates and disseminates Command Capability Issues (CCIs) provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). NFFTIO also collaborates with the F/F to identify specific solutions to known operational capability needs and provides the means to develop and demonstrate prototype systems. The result is that NFFTIO provides insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term Science & Technology (S&T) programs. The program also develops a cadre of civilian scientists and engineers who, upon completion of their NFFTIO Science Advisor tours, return to the Naval technical community with first hand knowledge of the F/F and warfighting issues. NFFTIO enables a continuous collaboration between the warfighters, the technical community, and strategic development commands.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2002	FY 2003	FY 2004	FY 2005
Naval Fleet/Force Technology Innovation Office	6,981	4,685	3,708	3,849

FY 2002 ACCOMPLISHMENTS:

- Facilitated and disseminated the CCIs provided by the F/F Commanders.
- Leveraged investments to provide a total of twenty-five Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands worldwide.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0205658N

Project Number: R0834

PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY
INNOVATION OFFICE

Project Title: Laboratory Fleet
Support

- Assisted Science Advisors in obtaining working experience with high-level decision-makers and operators in an effort to develop technologies for transition to the F/F.
- Collaborated with the F/F to identify specific solutions to known operational capability needs and provided the means to develop and demonstrate prototype systems.
- Helped move S&T to the operational F/F rapidly, leveraged long-term S&T investments to meet operational F/F capability needs, and provided a method for the Research, Development, Testing and Evaluation (RDT&E) community to surge in response to real world crises. In FY 2002 this surge capability was formalized through the stand-up of the Naval Research Science & Technology Action Team (NR-STAT).
- Transitioned the technology insertions that were initiated in prior years to operational use and acquisition programs.

FY 2003 PLANS:

- Continue to leverage the investment to provide and support Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands worldwide for the remainder of FY03.
- Continue to assist these Science Advisors to obtain experience working with high-level decision-makers and operators to develop technologies for transition to the F/F.
- Continue to collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems.
- Continue to help move S&T to the operational F/F rapidly, leverage long-term S&T investments to meet operational F/F capability needs, and provide a method for the RDT&E community to surge in response to real world crises.
- Continue to transition the technology insertions that were initiated in prior years to operational use and acquisition programs.

FY 2004 PLANS:

- Continue to facilitate and disseminate the CCIs provided by the F/F commanders.
- Continue to leverage the investment to provide and support Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands worldwide.
- Continue to assist Science Advisors to obtain experience working with high-level decision-makers and operators to develop technologies for transition to the F/F.
- Continue to collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems.
- Continue to help move S&T to the operational F/F rapidly, leverage long-term S&T investments to meet operational F/F capability needs, and provide a method for the RDT&E community to surge in response to real world crises.

R-1 Line Item 184

Page 4 of 8

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY
INNOVATION OFFICE

Project Number: R0834

Project Title: Laboratory Fleet
Support

- Continue to transition the technology insertions that were initiated in prior years to operational use and acquisition programs.

FY 2005 PLANS:

- Continue to leverage the investment to provide and support Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands worldwide.
- Continue to assist Science Advisors to obtain experience working with high-level decision-makers and operators to develop technologies for transition to the F/F.
- Continue to collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems.
- Continue to help move S&T to the operational F/F rapidly, leverage long-term S&T investments to meet operational F/F capability needs, and provide a method for the RDT&E community to surge in response to real world crises.
- Continue to transition the technology insertions that were initiated in prior years to operational use and acquisition programs.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:

PE 0601152N In-House Lab 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 Tech
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 & Expeditionary Warfare Applied Research
PE 0603114N Power Projection Advanced Tech
PE 0603123N Force Protection Advance Tech
PE 0603235N Common Picture Advanced Technology
PE 0603236N Warfighter Sustainment Advanced Tech

R-1 Line Item 184

Page 5 of 8

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0205658N

Project Number: R0834

PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY
INNOVATION OFFICE

Project Title: Laboratory Fleet
Support

PE 0603271N RF Systems Advanced Tech
PE 0603640M MC Advance Tech Demo
PE 0603727N Joint Experimentation
PE 0603729N Warfighter Protection Advanced Tech
PE 0603747N Undersea Warfare Advanced Technology
PE 0603758N Navy Warfighting Experiments & Demo
PE 0603782N Mine & Expeditionary Warfare Advanced Tech

D. ACQUISITION STRATEGY: Not applicable.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY
INNOVATION OFFICE

Project Number: R0834

Project Title: Laboratory Fleet
Support

CONGRESSIONAL PLUS-UPS:

R2371	FY 2002	FY 2003
LASH Hyperspectral	4,131	N/A

Funds provided developed the LASH hyperspectral sensor to improve Anti Submarine Warfare metrics by reducing false alarms due to environmental clutter. Improvements to detection algorithms were made through a systematic addressing of the most prevalent false alarm signatures. Testing continued during SEVENTH Fleet exercises, and COMPACFLT was consulted to update the capability metrics. A new hardware processor was designed and installed in LASH units. Overland testing was carried out to determine the value of the sensor for land targets and to discriminate against land clutter.

R2701	FY 2002	FY 2003
LASH Study	4,898	1,659

Funds provided were used to develop a demonstration program using a subcontracted, commercial airship. The airship is being deployed from Elizabeth City, NC, and St. Augustine, FL. The project is collecting data to determine the value of an airship for Electro-Optical and Infrared (EO/IR) sensing. The LASH sensor has been used onboard the airship for whale monitoring, coral reef oceanography, and for deer surveys on government land. The airship was deployed for force protection during the Marine Corps Marathon in Washington, DC.

R9111	FY 2002	FY 2003
Littoral/Mine Countermeasures Rapid Response	4,131	6,637

Funds provided augmented the development of a hyperspectral based, airborne sensor for near shore minefield classification. Funds incorporated improved Navigation/Stabilization system capabilities into the Pod/Sensor system. Automatic detection algorithm development was continued and supported by flight data. The sensor participated in Exercise Millennium Challenge with the Navy's Very Shallow Water (VSW) Detachment to detect mines in the VSW and Surf Zone. This work continues to be guided by metrics determined in concert with OPNAV, Navy acquisition, and Marine Corps Systems Command. During the Spring of CY03, a feasibility test is planned to determine the new airborne sensor's effectiveness in detecting mines in the surf zone.

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0205658N

Project Number: R0834

PROGRAM ELEMENT TITLE: NAVAL FLEET/FORCE TECHNOLOGY
INNOVATION OFFICE

Project Title: Laboratory Fleet
Support

Cost Categories	Contract Method & Type	Performing Activity & Location	FY02 Cost	FY-02 Award Date	FY-03 Cost	FY-03 Award Date	FY-04 Cost	FY-04 Award Date	FY-05 Cost	FY-05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	Various	6,981	TBD	4,685	TBD	3,708	TBD	3,849	TBD	Cont.	Cont.	Cont.
Subtotal Product Development			6,981		4,685		3,708		3,849		Cont.	Cont.	Cont.
Total Cost			6,981		4,685		3,708		3,849		Cont.	Cont.	Cont.

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																										DATE:						
Not Applicable																										February 2003						
APPROPRIATION/BUDGET ACTIVITY													PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME											
BA7													0205658N Navy Science Assistance Program								R2371 Lash Hyperspectral											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

R-1 SHOPPING LIST - Item No. 184

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

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																										DATE:						
Not Applicable																										February 2003						
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
BA7										0205658N Navy Science Assistance Program										R2701 LASH Study												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

R-1 SHOPPING LIST - Item No. 184

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

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																									DATE: February 2003							
Not Applicable										PROGRAM ELEMENT NUMBER AND NAME 0205658N Navy Science Assistance Program										PROJECT NUMBER AND NAME R9111 Littoral/MCM Rapid Response												
APPROPRIATION/BUDGET ACTIVITY BA7																																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

R-1 SHOPPING LIST - Item No. 184

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

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-07		0205667N F-14 Upgrade						
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	1.467							
E9112 TACL SAR Pod	1.467							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The FY 2002 budget reflects a \$1.500 million Congressional add for the Tactical All Weather Collection Long Range (TACL) Synthetic Aperture Radar Reconnaissance system (SAR) Pod which has been decreased by .013 million for an Undistributed Congressional reduction, decreased by .013 for SBIR Transfer, decreased by .003 for a Congressional Rescission and decreased by .004 for Economic Assumptions.

This program element provided for the development of improvements to the Navy F-14 squadrons in order to counter the projected threat through the year 2001. The F-14D increased capability in three major areas: new engine, new digital avionics, and upgraded radar. These changes yield significant improvements in capability and performance, as well as reliability and maintainability, and will facilitate the total integration and exploitation of related programs i.e., Joint Tactical Information Distribution System (JTIDS), Infrared Search and Track System (IRST), and inclusion of Airborne Self-Protection Jammer (ASPJ) in the electronic warfare (EW) suite for the F-14D operational evaluation. A Pre-deployment Update (PDU) program (primarily software) includes air-to-ground ordnance delivery capability, full Link 16 capability, and radar/Electronic Counter-Countermeasures (ECCM) improvements for the F-14D. The PDU program was created because of concurrent development of the F-14D and the above listed common avionics and weapons. It implemented the capabilities inherent in systems incorporated during the full scale development (FSD) program and was a planned integral part of the evolution of the F-14D aircraft. F-14 weapons integration supports integration of EW improvements and correction of OPEVAL deficiencies. Funding was also provided for various software upgrades such as Global Positioning System, and accommodates the realignment of Aviation Depot Level Repairables (AVDLR) from Major Range and Test Facility Bases to direct project funding. FY2001 included a Congressional plus up of \$9 million for Synthetic Aperture Radar (SAR) Pod. These funds were used to demonstrate a podded SAR system on the F-14. Additionally, a \$1 million Congressional plus up was included for Radar Warning Receiver (RWR) Antenna Replacement and System Enhancement. These funds were used to fund the research, development and test costs associated with procuring new RWR antennas system upgrade. The FY 2002 Congressional increase for TACL SAR was used to conduct flight demonstrations of X-BAND High Resolution Synthetic Aperture Radar (SAR) Pod.

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT (PE) NAME AND NO.							
RDT&E, N /BA-7 Operational Sys Dev			0206313M Marine Corps Communications Sys							
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	114.659	196.004	235.722	267.268	216.991	222.829	108.814	89.932	Cont	Cont
C2270 Command Post Systems	24.853	27.943	9.090	7.980	11.820	9.954	8.800	9.243	Cont	Cont
C2272 Intelligence C2 Systems	16.862	18.352	17.616	32.424	27.747	21.017	17.465	15.565	Cont	Cont
C2273 Air Operations C2 Systems	21.930	65.142	95.971	106.936	79.117	106.415	31.574	20.324	Cont	Cont
C2274 Warfare Systems	8.575	7.987	9.727	5.655	5.468	4.562	4.253	4.633	Cont	Cont
C2275 Radio Systems	0.000	0.584	8.881	8.698	4.878	4.337	4.226	3.548	Cont	Cont
C2276 Communications Switching & Control Systems	1.427	4.513	6.381	3.815	4.675	3.921	4.042	3.428	Cont	Cont
C2277 System Engineering & Integration	11.772	10.736	8.907	7.991	9.597	8.768	9.043	9.204	Cont	Cont
C2278 Air Defense Weapons Systems	11.156	28.274	23.428	9.596	6.469	11.127	10.577	5.827	Cont	Cont
C2315 Training Devices/Simulators	13.073	8.580	12.423	8.317	8.434	5.651	4.293	4.446	Cont	Cont
C2510 MAGTF CSSE & SE	5.011	4.376	23.488	18.094	10.643	8.146	8.431	8.634	Cont	Cont
C3099 Radar Systems	0.000	0.000	19.810	57.762	48.143	38.931	6.110	5.080	Cont	Cont
C9279 Defense Emergency Response Fund (DERF)	0.000	12.490	0.000	0.000	0.000	0.000	0.000	0.000	Cont	Cont
C9276 Radar and Marine Corps Ship Maneuver	0.000	7.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.027
Quantity of RDT&E Articles										

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT (PE) NAME AND NO. 0206313M Marine Corps Communications Sys			
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:				
<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).</p> <p>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>				
B. PROGRAM CHANGE SUMMARY				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) FY 2003 President's Budget:	119.716	174.664	163.920	96.349
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions	-0.325	-12.46	-1.216	-10.928
(U) Congressional Rescissions				
(U) Congressional Increases		33.800		
(U) Reprogrammings	-2.028		73.052	181.832
(U) SBIR/STTR Transfer	-1.853			
(U) Minor Affordability Adjustment	-0.851		-0.034	0.015
(U) FY 2004 President's Budget:	114.659	196.004	235.722	267.268
CHANGE SUMMARY EXPLANATION:				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2003	
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 C2270 Command Post Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	24.853	27.943	9.090	7.980	11.820	9.954	8.800	9.243	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>(U) 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 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. MAGTF Software Baseline (MSBL). Decision support integrates information from the seven Command and Control (C2) functional areas and the support function. The information is tailored to support the users' specific needs. As a result of the MAGTF C4I Baseline subproject, an integrated migration strategy is being incorporated into the MAGTF software baseline, which will be common across and used by all MAGTF C4I programs.</p> <p>2. The Tactical Command Operations (TCO) 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>3. The Intelligence Analysis System (IAS) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence; it ensures that tactical intelligence is tailored to meet specific mission requirements. A Marine Expeditionary Force (MEF) IAS variant will also process signal intelligence. Funding for this program has moved to Project C2272 within this Program Element (PE).</p> <p>4. Advanced Field Artillery Tactical Data System (AFATDS) 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.</p> <p>5. The Unit Operations Center (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 battlefield visualization concepts. Unit Operations Center (UOC) will provide a facility and components for the integration of current and planned battlefield automation systems. UOC is a "system of systems" designed to optimize the positioning, interaction, and flow of information among the various staff agencies (G-2, G-3, Operations Directorate, etc) and their automated information systems and between the unit higher, adjacent or subordinate units or headquarters. The Marine Corps deploys Component/Joint Task Force (JTF/Marine Air Ground Task Force (MAGTF) command elements throughout the world to fulfill operational requirements, often in joint/combined forces arenas. The UOC is designed in garrison and tactical versions. The tactical version is called the Combat Operations Center (COC), which is an outgrowth of the integrated COC (ICOC), COC-Interim (COC(I)), and the Enhanced COC (ECOC) developments over the last two years. The garrison version is called the Command Center (CC). Funding for this program has been moved to Project C2273, PE 0206313 in FY04 and beyond.</p> <p>6. GCCS Integrated Imagery and Intelligence (GCCS-I³) is a joint program that is designed to enhance the operational commanders' 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>7. The Data Automated Communications Terminal (DACT) will extend situational awareness to echelons below the battalion level within the Marine Corps. The DACT will receive, store, retrieve, create, modify, transmit and display map overlays, operational messages/reports, and position information via tactical radios, networks, and/or wire lines. A phased approach for full functionality fielding consists of hardware/software upgrades and enhancements that allow interoperability with other C4I systems.</p> <p>8. Marine Corps Training, Exercise, and Employment Plan (MCTEEP) is a Windows-based, Marine Corps developed scheduling tool, identified in the Commandant's Planning Guidance (CPG) to standardize the "TEEP" process. MCTEEP software was first fielded in July 1995 to every G-3/S-3 in the operating forces. Funding for this program has moved to Project C2906 within this PE in FY04 and beyond.</p> <p>9. Single Integrated Air Picture (SIAP) is the product of fused, common, continual, coherent, unambiguous tracks of airborne objects of interest within the surveillance area. The SIAP Systems Engineer Task Force is an ad hoc Joint effort to investigate, research and produce the most common effective means for producing a SIAP. Funding for this program has been moved to Project C2273 in FY04 and beyond.</p>										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2270 Command Post Systems		
(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.060	0.000	0.000	0.000
RDT&E Articles Qty				
TCO: Develop and test new Client Software.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.518	0.150	0.160	0.170
RDT&E Articles Qty				
TCO: Program management and engineering support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.314	0.180	0.195
RDT&E Articles Qty				
TCO: Server testing and integration to develop additional functional capabilities.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.160	0.125	0.130
RDT&E Articles Qty				
TCO: Integrate software changes into new system and perform testing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.334	0.373	0.288
RDT&E Articles Qty				
TCO: Testing and validations of advanced concepts and technologies.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.899	0.376	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Critical improvements to GCCS-I3 Intelligence Support software for USMC requirements.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.089	0.000	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Support of integration facility.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.381	0.000	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Interoperability assessments and software improvements .				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.312	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Software modifications to support USMC joint interoperability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.300	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Perform IOS Client Hardware Trade Study.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.255	1.350	1.800	1.850
RDT&E Articles Qty				
MAGTF C4I BASELINE: Build, test, field and support DII COE compliant versions of GCCS-M in support of the six warfighting functions. This effort focuses primarily on the integration, inclusion and incorporation of Fire Support, Maneuver and Intel capabilities.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys			C2270 Command Post Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.451	0.425	0.460	0.475	
RDT&E Articles Qty					
MAGTF C4I BASELINE: Program Management Support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.671	0.350	0.375	0.375	
RDT&E Articles Qty					
MAGTF C4I BASELINE: Conduct disciplined risk management, requirements tracking and systems engineering and analysis efforts.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	2.118	1.387	1.920	1.534	
RDT&E Articles Qty					
MAGTF C4I BASELINE: Development of MSBL Client in MS Windows environment (C2PC).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.030	0.750	0.350	0.750	
RDT&E Articles Qty					
MAGTF C4I BASELINE: Development of WIN NT Fire Support, Force Protection, and communications clients.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.000	1.300	1.166	0.850	
RDT&E Articles Qty					
MAGTF C4I BASELINE: Development of client for foot mobile Marines in Windows CE environment per user requested improvements.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.575	0.000	0.000	0.000	
RDT&E Articles Qty					
AFATDS: Final development and testing of AFATDS V6.3.2 software. Develop increased interoperability with all other MAGTF C4I automated systems. Increase software effectiveness with, and in support of Marine Corps fire support systems.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.650	0.812	0.000	0.000	
RDT&E Articles Qty					
AFATDS: Development of AFATDS V7 software. Simplify human factors interface to allow easier initial and sustainment training. Increase functionality with Marine Corps fire support systems (including Towed Artillery Digitization.) Enhance air mission processing capabilities of system. Further enhance human factors interface to provide simple and familiar view to users.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.400	0.663	0.000	0.000	
RDT&E Articles Qty					
AFATDS: Research and testing of new hardware platform for system. Enhancements.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.558	0.203	
RDT&E Articles Qty					
AFATDS: Program management and engineering support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.463	1.528	0.043	0.000	
RDT&E Articles Qty					
GCCS-I3: Operational system development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	9.382	0.891	0.000	0.000	
RDT&E Articles Qty					
UOC: Engineering and manufacturing development effort including design of production representative modules.					

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2270 Command Post Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.090	0.612	0.000	0.000	
RDT&E Articles Qty					
UOC: Operational Testing.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.640	0.850	0.000	0.000	
RDT&E Articles Qty					
UOC: Program Management support. Funding for this program has been moved to Project C2273 in PE 0206313 in FY04 and beyond.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.807	0.000	0.000	0.000	
RDT&E Articles Qty					
DACT: Dismounted DACT Prototype development and testing.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.946	0.000	0.000	0.000	
RDT&E Articles Qty					
DACT: Dismounted DACT Security Accreditation, Develop software recovery solution.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.537	0.989	0.692	
RDT&E Articles Qty					
DACT: Dismounted DACT Software development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.100	0.100	0.100	
RDT&E Articles Qty					
DACT: Dismounted DACT FMF test support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.100	0.100	0.156	
RDT&E Articles Qty					
DACT: Dismounted DACT Program Management Support					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.040	0.152	0.000	0.000	
RDT&E Articles Qty					
DACT: Prototype/Internal SAASM GPS development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.060	0.212	0.000	0.000	
RDT&E Articles Qty					
DACT: Internal 188-220 modem development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	2.522	0.000	0.000	
RDT&E Articles Qty					
DACT: Development, integration, testing and fielding of the Tank and DACT Vehicle Mount.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.372	0.212	
RDT&E Articles Qty					
DACT: Dismounted DACT Technology Insertion (Wireless comms).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.171	0.000	0.000	0.000	
RDT&E Articles Qty					
MCTEEP: Development of new software enhancements including 1) Database Evaluation and Conversion, 2) creation of Situation Report (SITREP) and Operational Summary (OpSum) Templates for enhanced Data Entry and 3) Implementation in MCDMT of Common Marine Corps Data Elements.					

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2270 Command Post Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.157	0.000	0.000	align="right"> 0.000	
RDT&E Articles Qty					
MCTEEP: Program management support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.338	0.019	align="right"> 0.000	
RDT&E Articles Qty					
MCTEEP: Development, integration, testing and fielding of selected MCTEEP Software upgrades to enhance the capabilities of MCTEEP. The prospective S/W modifications include; 1) incremental upgrades to accomplish progressively web enabling higher levels of DII / COE compliance, 2) increased data sorting, correlation and filtering capabilities to further facilitate rapid responses to complex information requests, 3) transition from the current Sybase licensed data-base management system (DBMS) to a DBMS having better long term supportability.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	2.335	0.000	align="right"> 0.000	
RDT&E Articles Qty					
SIAPS: Implement JROC approved Block 0 changes in the TAOM.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	8.783	0.000	align="right"> 0.000	
RDT&E Articles Qty					
SIAPS: Service System Engineering support to SIAP SE TF. Funding for this program has been moved to Project C2273, PE 0206313 in FY04 and beyond.					
(U) Total \$	24.853	27.943	9.090	align="right"> 7.980	
(U) PROJECT CHANGE SUMMARY:					
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
(U) FY 2003 President's Budget:	24.755	29.594	22.510	19.554	
(U) Adjustments from the President's Budget:					
(U) Congressional Program Reductions					
(U) Congressional/OSD Program Reductions	-0.066	-1.651	0.620	-0.282	
(U) Congressional Rescissions					
(U) Congressional Increases					
(U) Reprogrammings	0.853		-14.044	-11.315	
(U) SBIR/STTR Transfer	-0.387				
(U) Minor Affordability Adjustment	-0.302		0.004	0.023	
(U) FY 2004 President's Budget:	24.853	27.943	9.090	7.980	
CHANGE SUMMARY EXPLANATION:					
(U) Funding: Change in funding for FY04 and FY05 is due to the realignment of programs within the Marine Corps					
(U) Schedule: Not Applicable.					
(U) Technical: Not Applicable.					

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EXHIBIT R-2a, RDT&E Project Justification									DATE:	
									February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys					C2270 Command Post Systems				
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI# 463100 TCO	0.550	0.000	0.391	0.391	0.191	0.390	0.390	0.190	Continuing	Continuing
PMC BLI# 474900 IAS MOD	1.570	1.315	1.347	1.354	1.375	1.398	1.445	1.474	Continuing	Continuing
PMC BLI# 463100 AFATDS	2.609	0.000	0.674	0.173	4.234	8.141	8.982	3.296	Continuing	Continuing
PMC BLI# 463100 UOC	0.000	22.518	0.015	0.000	0.000	0.000	0.000	0.000	0.000	22.533
PMC BLI# 419000 UOC	0.000	0.000	29.225	36.045	41.292	124.663	151.987	147.525	Continuing	Continuing
PMC BLI# 463100 DACT	13.862	6.366	4.183	0.300	0.300	0.200	0.300	0.300	Continuing	Continuing
(U) Related RDT&E:										
(U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II) Defense.										
(U) Navy Tactical Flag Communication and Control System.										
(U) D. ACQUISITION STRATEGY:										
(U) TCO: 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.										
(U) MSBL: Funds applied to the NGIT contract through ITM2K are on a Time and Materials Contract. Funds to NGIT, Orlando, FL for the SPEED contract are on a Firm Fixed Price Contract; SPAWAR Systems Center, Charleston. Fire Support client software development performed through Cost Plus Fixed Fee contract with Raytheon through Army CECOM, Ft. Monmouth, NJ.										
(U) AFATDS: AFATDS is a Cost Plus Award Fee contract through Army CECOM, Ft. Monmouth, N. J. R&D efforts will be a combined effort between the software developer (Raytheon), the Army PM and the USMC of software enhancements for the next planned versions of AFATDS (V6.3.2 and V7).										
(U) DACT: The Program develops software and hardware for two operational domains. The mounted DACT is a Command Control Situational Awareness device that will be installed in various tactical vehicles at the battalion and below levels with a special vehicle mounting kit, also being developed.										
(U) MCTEEP: Competitively award a cost plus fixed fee contract in 4th Qtr 02. R&D component of this contract will be to enhance existing MCTEEP S/W version 4.0 or to further develop the capabilities of the MCTEEP variant, the M. C. Database Management Tool.										
(U) IAS: The IAS program uses existing Government contracts for hardware and software development and integration. The system is comprised primarily of Commercial Off-the-Shelf (COTS) and Government Off-The-Shelf (GOTS) equipment.										
(U) SIAP: Systems Engineering effort that will be utilized to reduce risk and increase interoperability for legacy and future C4ISR systems.										
(U) GCCS I3: The acquisition of components (software/hardware) for the GCCS I 3 initiative will maximize the use of existing COTS, GOTS, NDI, and GFE equipment. The GCCS I3 initiative will be accomplished in collaboration with Millennium Technologies Corporation and Computer Science Corporation. Maintenance support will be managed by MARCORLOGBASES and those contractors listed above. This strategy accomplishes several goals: procure and field equipment effectively and efficiently, reduce logistics support, and reduce operational maintenance support.										
(U) UOC: The UOC COC is a Competitively Awarded Contract (cost type) for design and FP production options.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		February 2003
PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2270 Command Post Systems	
E. Major Performers:		
TACTICAL COMBAT OPERATIONS (TCO)		
FY 02 MARCORSSYSCOM (MCSC), QUANTICO, VA. Provide funds to NORTHROP GRUMMAN INFORMATION TECHNOLOGY, Quantico, VA for Testing and Validation of software. Dec 01.		
FY 03 SPAWAR, CHARLESTON, S.C. Provide funds to EMA, INC, Charleston, S.C. for Testing and Validation of Advanced Server Concepts. Dec 02.		
FY 04 SPAWAR, CHARLESTON, S.C. Provide funds to EMA, INC, Charleston, S.C. To develop additional functional capabilities, integrate software changes into new system, and perform testing. Dec 03.		
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. Dec 04.		
MAGTF SOFTWARE BASELINE (MSBL)		
FY 02 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development: C2PC and C2CE. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Software integration, building, testing and fielding MSBL. RAYTHEON (via Army CECOM) Ft. Monmouth, NJ. Fire Support Client software development, testing and integration.		
FY 03 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development: C2PC and C2CE. Estimated contract award date: Dec 03. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Estimated contract award date, Dec FY 03. RAYTHEON (via Army CECOM) Ft. Monmouth, NJ. Fire Support client software development, testing and integration. Estimated contract date Dec FY 03.		
FY 04 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development C2PC. Estimated contract award Dec FY 04. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Estimated award date Dec FY 04. RAYTHEON (via Army CECOM) Ft Monmouth, NJ. Fire Support client software development, testing, and integration. Estimated contract date Dec FY 04.		
FY 05 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), San Diego, CA. Software development: C2PC and C2CE. Estimated award Dec FY 05. SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR) Charleston, SC. Software integration, building, testing and fielding MSBL. Award Dec FY 05. RAYTHEON (via CECOM) Ft. Monmouth, NJ. Fire Support Client software development, testing and integration. Estimated contract award date Dec FY 05.		
ADVANCED FIELD ARTILEY TACTICAL DATA SYSTEM (AFATDS)		
FY 03 RAYTHEON SYSTEMS, Ft. Wayne IN. Develop and test software. Award Dec FY03.		
FY 03 MCOTE, Quantico VA. Test V6.3.2 software. Award Dec FY 03.		
FY 03 CEOS. TBD. Program Support. Dec FY 03.		
FY 04 TBD. Program Support.		
FY 05 TBD. Program Support.		
DATA AUTOMATED COMMERCIAL TERMINAL (DACT)		
FY 03 TANKS, Development of Tank Vehicle Mount - to include testing, Dec 02.		
FY 04 NORTHROP GRUMMAN, Software Development, Jan 03.		
FY 04 TECHNOLOGY INSERTION, Wireless communication, Vendor TBD, Feb 03.		
FY 05 NORTHROP GRUMMAN, Software Development, Jan 04.		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2270 Command Post Systems
E. Major Performers (Continued):		
MARINE CORPS TRAINING EXERCISE EMPLOYMENT PLAN (MCTEEP)		
FY 02	STANLEY ASSOCIATES, INC., Woodbridge, VA. Development of new software enhancements. Aug 02.	
FY 03	STANLEY ASSOCIATES, INC., Woodbridge, VA. Development, integration, testing and fielding of selected MCTEEP Software upgrades to enhance the capabilities of MCTEEP. Nov 02.	
INTELLIGENCE ANALYSIS SYSTEM (IAS)		
FY 02	NSWC, CRANE,IN. Support to GCCS I3 Software to USMC Requirements. SPAWAR SSCC, Charleston, VA., Interoperability assessment and in support of integration facility.	
FY 03	NSWC, CRANE,IN. Critical Improvements to GCCS I3 software for program requirements and software mods. SPAWAR SSCC, Charleston, VA., Joint Interoperability, perform IOS Client and Server Trade Study.	
GLOBAL COMMAND CONTROL SYSTEM (GCCS I3)		
FY 02	SSCC, Charleston, S.C. Funds provided for Program Engineering Services and support to define, develop and interoperability with GCCS I3 related software and hardware.	
FY 02	NAVY SYSTEMS MANAGEMENT ACTIVITY (WSMA), Arlington, VA. Funds provided for Engineering and Program Management and technical analysis support.	
FY 03	SSCC, Charleston, S.C. Funds provided for Program Engineering Services and Support to define, develop and interoperability with GCCS I3 related software and hardware.	
UNIT OPERATIONS CENTER (UOC)		
FY 02	NORTHROP GRUMMAN, Stafford, VA, Program support, Oct 01.	
FY 02	GENERAL DYNAMICS, Scottsdale, AZ. Statement of Objectives for Combat Operations Center and Engineering Manufacture Development. May 02.	

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Exhibit R-3 Cost Analysis								DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2270 Command Post Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
UOC	WR	SPAWAR	4.891	1.225	01/02	0.702	01/03					0.000	6.818	
UOC	WR	JSC		0.065	01/02							0.000	0.065	
UOC	WR	MCSC, Quantico, VA	1.412	0.657	01/02	0.320	01/03					0.000	2.389	
UOC	RCP	General Dynamics, Scottsdale, AZ		7.000	03/02	0.706	01/03					0.000	7.706	
TCO	RCP	MCSC, Quantico, VA		0.518	02/02							0.000	0.518	
TCO	WR	SPAWAR, Charleston, SC	1.270			0.808	12/02	0.678	12/03	0.613	12/04	1.921	5.290	
MAGTF C4I BASELINE	RCP	SSC, Charleston, SC	6.255	1.255	02/02	1.350	12/02	1.804	12/03	1.667	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Raytheon, Indianapolis, IN	2.450	0.600	02/02	0.750	12/02	0.350	12/03	0.750	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, San Diego, CA	9.123	2.118	02/02	1.237	12/02	1.766	12/03	1.542	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, Aquia, VA	4.350	1.000	02/02	1.300	12/02	1.166	12/03	0.850	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, Orlando, FL	1.530	0.430	04/02	0.000		0.000		0.000		Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, Aquia, VA	1.692	0.326	10/02	0.425	12/02	0.460	12/03	0.475	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	WR	MCTSSA, Camp Pendleton, CA	0.600	0.125	12/02	0.150	12/02	0.150	12/03	0.175	12/04	Cont.	Cont.	
MAGTF C4I BASELINE	RCP	Northrop Grumman, Aquia, VA	1.771	0.671	12/02	0.350	12/02	0.375	12/03	0.375	12/04	Cont.	Cont.	
AFATDS	MIPR	USA, Ft. Sill, OK	1.562	0.090	02/02	0.175	12/02					Cont.	Cont.	
AFATDS	C/FFP	CECOM, Ft. Monmouth,NJ	1.218	0.640	02/02	0.479	12/02	0.558	12/03	0.203	12/04	Cont.	Cont.	
AFATDS	CPFF/MIPR	USA, CECOM	1.445	0.525	02/02	0.451	12/02					Cont.	Cont.	
AFATDS	WR	MCSC, Quantico, VA		0.020	02/02	0.020	12/02					Cont.	Cont.	
AFATDS	CPFF/MIPR	CECOM, Ft. Monmouth,NJ	0.675	0.350	02/02	0.350	12/02					Cont.	Cont.	
GCCS-13	WR	MTC		0.750	08/02	1.000	11/02					0.000	1.750	
GCCS-13	MIPR	NSA				0.032	12/02					0.000	0.032	
GCCS-13	WR	AIS				0.100	11/02					0.000	0.100	
GCCS-13	WR	MTC				0.396	04/02	0.043	12/03			0.000	0.396	
DACT	TM	Raytheon, Fort Wayne, IN	0.950	0.946	02/02							Cont.	Cont.	
DACT	RCP	SSC, Charleston, SC	0.882	0.807	02/02							Cont.	Cont.	
DACT	TM/MIRP	Booz-Allen, Ft. Monmouth, NJ	1.185	0.060	02/02	0.537	12/02	0.220	11/03	0.368	11/04	Cont.	Cont.	
DACT	TM/MIPR	Booz-Allen, Ft. Monmouth, NJ	0.344	0.040	02/02	0.152	12/02	0.152	11/03			Cont.	Cont.	
DACT	FFP	NGIT, San Diego CA	1.793			0.212	11/02	0.989	11/03	0.592	11/04	Cont.	Cont.	
MCTEEP	C/CPFF	Northrop Grumman, Aquia, VA		0.157	02/02	0.000						0.000	0.157	
MCTEEP	C/CPFF	Stanley Assoc		0.171	08/02							0.000	0.171	
MCTEEP	C/CPFF	TBD				0.338	11/02	0.019	11/03			0.000	0.357	
SBIR												0.000	0.000	
Subtotal Product Dev			45.398	20.546		12.340		8.730		7.610		Cont.	Cont.	
Remarks:														

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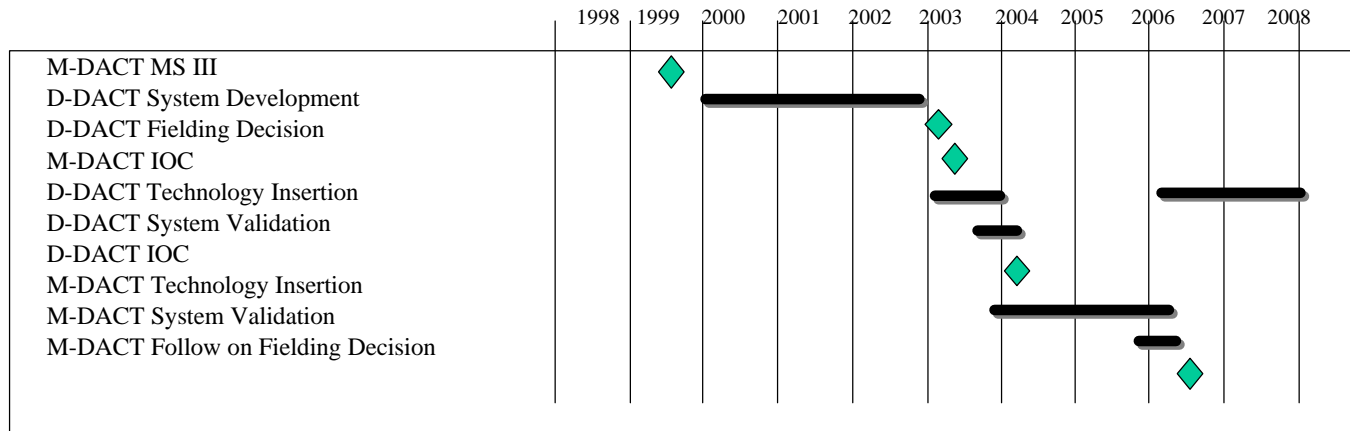
Exhibit R-3 Cost Analysis								DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N/BA-7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2270 Command Post Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DACT	CFFP	Program Support, (TBD)	0.300			0.100	11/02	0.100	11/03	0.100	11/04	Cont.	Cont.	
DACT INTEGRATION	TBD	TBD				2.522	12/02					Cont.	Cont.	
SIAP	RCP	CECOM, FT. MONMOUTH, NJ				1.200	02/03					0.000	1.200	
SIAP	RCP	MCSC, QUANTICO, VA				5.883	02/03					0.000	5.883	
SIAP	RCP	GSA, BREMERTON, WA				1.700	02/03					0.000	1.700	
SIAP	RCP	MCSC, QUANTICO, VA				2.335	02/03					0.000	2.335	
GCCS-I3	RCP	NSWC, CRANE		0.070	03/02							0.000	0.070	
GCCS-I3	RCP	AIS		0.072	03/02							0.000	0.072	
Subtotal Support			0.300	0.142		13.740		0.100		0.100		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TCO	RCP	MCTSSA, Camp Pndltm, CA	0.201	0.060	02/02	0.150	02/03	0.160	02/04	0.170	02/05	0.000	0.741	
IAS Mod	WR	NAVSEA, Crane	0.373	0.381	10/01	0.312	10/02					0.300	1.366	
IAS Mod	RCP	MCTSSA	0.147	0.089	02/02	0.000						0.100	0.336	
IAS Mod	RCP	SPAWAR, Charleston	0.136	0.899	02/02	0.676	11/02					0.449	2.160	
MSBL	RCP	MCOTEA, Quantico, VA	1.683									Cont.	Cont.	
DACT	MIPR	FMF, MCB Camp Pendleton (I MEF)	0.300			0.100	12/02	0.100	12/03	0.100	12/04	Cont.	Cont.	
UOC	RCP	MCOTEA, Quantico, VA		0.090	12/02									
Subtotal T&E			2.840	1.519		1.238		0.260		0.270		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
UOC	IDIQ	Logicon	3.396	1.640	01/02	0.525	01/03	0.000				0.000	5.561	
UOC	FFP	Mevatec,	0.064	0.435	01/02	0.100	01/03	0.000				0.000	0.599	
GCCS-I3	RCP	NSMA, ARLINGTON, VA		0.571	08/02									
Subtotal Management			3.460	2.646		0.625		0.000				0.000	6.731	
Remarks:														
Total Cost				24.853		27.943		9.090		7.980		Cont.	Cont.	

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EXHIBIT R-4/4a, Schedule Profile/Detail	DATE: February 2003
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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 Communications Sys	C2270 Command Post Systems

DACT Macro Program Schedule



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N C2270	1.853	3.623	1.561	1.160	0.756	0.664	0.583	0.599	Continuing	Continuing
(U) PMC BLI# 463100, DACT	13.862	6.366	4.183	0.300	0.300	0.200	0.300	0.300	Continuing	Continuing

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EXHIBIT R-4/4a, Schedule Profile/Detail DATE: **February 2003**

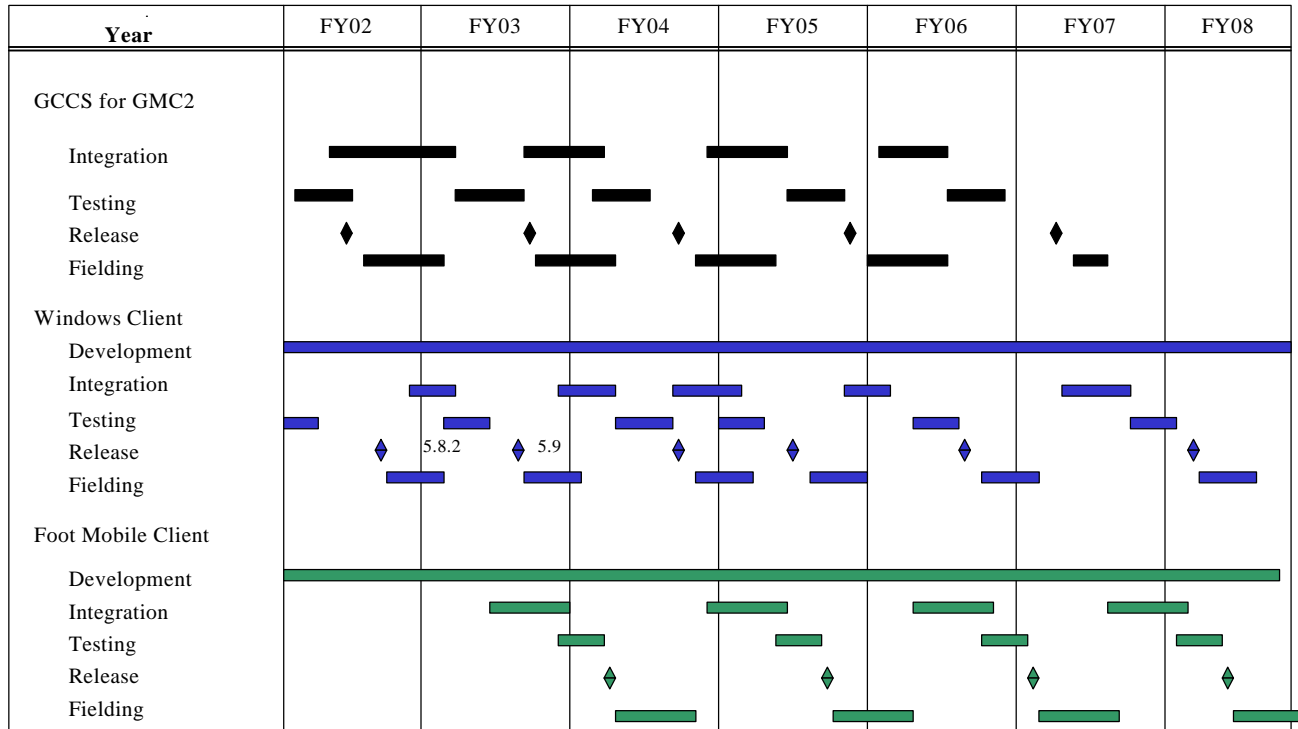
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2270 Command Post Systems

DACT SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
D-DACT SYSTEM DEVELOPMENT	1Q00--4Q02							
D-DACT FIELDING DECISION		1Q						
M-DACT IOC		2Q						
D-DACT TECHNOLOGY INSERTION		1Q -- 4Q			1Q06 ----- 4Q07			
D-DACT SYSTEM VALIDATION		3Q03 ----- 1Q04						
D-DACT IOC			1Q04					
M-DACT TECHNOLOGY INSERTION		4Q03 ----- 1Q06						
M-DACT SYSTEM VALIDATION					1Q -- 2Q			
M-DACT FOLLOW ON FIELDING DECISION					2Q			

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EXHIBIT R-4/4a, Schedule Profile/Detail		DATE: February 2003
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 Command Post Systems

MSBL PROGRAM SCHEDULE



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N	6.525	5.562	6.071	5.834	5.699	5.811	5.917	6.038	Continuing	Continuing

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems					C2272 Intelligence C2 Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	Cost To Complete	Total Program
Project Cost	16.862	18.352	17.616	32.424	27.747	21.017	17.465	15.565	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<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>1. Tactical Exploitation of National Capabilities (TENCAP) is a program designed to enhance the ability of tactical Marine Corps forces to exploit the capabilities of national intelligence-gathering systems. Congressionally directed, it requires close liaison with the intelligence community and involves complex and highly-sensitive activities.</p> <p>2. The Topographic Production Capability (TPC) is an advanced Geospatial Information System, which employs commercial hardware and software to provide the framework data for the common battlefield visualization by producing geospatial intelligence products in digital format and limited hardcopy map products.</p> <p>3. The Joint Surveillance Target Attack Radar (JSTARS) connectivity program will develop software 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. Once the Connectivity Software has been developed, a requirement for a JSTARS CGS software upgrade is anticipated under Joint Program Office Pre-Planned Product Improvement (P3I) initiative.</p> <p>4. The Coastal Battlefield Reconnaissance and Analysis (COBRA) 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 ground station. Ground station algorithm processing provides near real-time automatic minefield detection with Differential Global Positioning System (DGPS) location accuracy.</p> <p>5. The JSIPS-TEG is a highly mobile imagery ground station designed to receive and process tactical imagery in support of the MEF/MAGTF commander. This Common Imagery Ground Surface System (CIGSS) is an integral component of the USMC Distributed Common Ground Station (DCGS) architecture that enables the MEF/MAGTF commander to remain interoperable with other Joint and USMC C4I systems. The system provides the capability to receive, process, store, exploit (to include PGM targeting support), and disseminate national theater, and tactical imagery, as well as providing interoperability with the Army's Tactical Exploitation System (TES), the Navy's Joint Services Imagery Processing System - Navy (JSIPS-N), and the Air Force Intelligence Systems Reconnaissance Manager (ISRM) systems during joint engagements.</p> <p>6. The Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) is an intelligence collection, analysis and reporting suite of equipment, employing commercial-off-the-shelf (COTS) and non-developmental items (NDI) of equipment and software. It will produce digital soft copy as well as hard copy CI, Interrogator-Translator (IT) and HUMINT information reports and images for the Marine Air Ground Task Force (MAGTF) or Joint Force (JTF) Commander. CIHEP will allow the electronic storage and dissemination of HUMINT information throughout the command, as well as for low volume traditional hard copy dissemination.</p> <p>7. Team Portable Collection System - Multi-Platform Capable (TPCS-MPC) - 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>										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
<p>8. Tactical Remote Sensor System (TRSS-PIP) - The TRSS provides the Marine Air Ground Task Force (MAGTF) commander with an organic variety of sensors that will cover his Area of Responsibility for months at a time by allowing the commander to autonomously conduct unattended, semi-covert, ground surveillance of distant areas of the battlefield. Using a network of reliable passive sensors, these multiple systems enhance the commanders' ability to cover gaps in the overall intelligence collection effort, thus reducing the need to employ costly weapons systems. The sensor systems also reduces the requirement to employ Marines behind enemy lines for extended periods of time.</p> <p>9. Manpack Secondary Imagery Dissemination System (MP SIDS) is a Commercial-Off-The-Shelf (COTS) refresh of a fielded system. MP SIDS consists of one (1) Base Station and three (3) Portable Outstations. It is used by the Reconnaissance Marines to electronically receive, process, reproduce, and disseminate near-real-time imagery throughout the battlefield to support all echelons of the MAGTF.</p> <p>10. The Intelligence Analysis Systems (IAS) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence; it ensures that tactical intelligence is tailored to meet specific mission requirements. A Marine Expeditionary Force (MEF) IAS variant will also process signal intelligence.</p> <p>11. Global Command and Control System Integrated Imagery and Intelligence (GCCS I3) is a joint program that is designed to enhance the operational Commander's situation awareness and track management through the use of a standard set of integrated, linked tools and services that maximize commonality and interoperability across the tactical theater, and national communities. GCCS-I3 operates in joint and service specific battlespace and is interoperable, transportable, and compliant with the DoD mandated Common Operating Environment (COE).</p> <p>12. Technical Control Analysis Center (TCAC). The primary mission of the TCAC is to provide the Radio Battalions (RadBn) with an automated Signals Intelligence (SIGINT) processing, analysis, and reporting capability. The TCAC system is designed to receive collected intelligence from tactical, theater and National level producers and provide a multi-source fused intelligence production capability to support the Marine Air Ground Task Force (MAGTF) commander via the Intelligence Analysis System (IAS), as well as the National Security Agency (NSA) and other National consumers.</p> <p>13. Intelligence Broadcast Receiver (IBR) provides Marine tactical commanders access to National level Near Real-Time intelligence data provided over the Integrated Broadcast Service. IBR is employed across the MAGTF echelons through the following Host Systems; Intelligence Analysis System; Tactical Air Operations Center; Technical Control and Analysis Center; Tactical Air Command Center; Joint STARS Common Ground Station; Tactical Electronic Reconnaissance Processing and Evaluation System and the Mobile Electronic Warfare Support System.</p> <p>14. Intelligence System Readiness (ISR) Program will provide timely and targeted solutions to better enable the MAGTF Commander to accomplish his mission by (1) injecting technology rapidly, and (2) conducting up-front testing and integration. The current Marine Corps Intelligence architecture encompasses dozens of systems, acquired over a span of decades, often with little regard for interoperability. Additionally, some systems have gaps in functionality and interoperability which, when balanced against rapid advancements in technology, bring those systems to the brink of obsolescence. 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) technology. In this way, ISR provides proof-of-concept prototypes and focused Research and Development (R&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> <p>15. FY02 DERF TPCS - \$2.0M. Funds are for Software Development and Testing of the Digital Receiver Technology (DRT) and test and approval of Ultralife Lithium Battery. FY03 DERF Funds are listed under Project C9273.</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.031	0.030	0.031	0.035
RDT&E Articles Qty				
CIHEP: Engineering, Integration and Technical support for technical refresh and update of program hardware/software upgrades.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.085	0.079	0.081	0.081
RDT&E Articles Qty				
CIHEP: Program Management Support for the technical refresh and update of program hardware/software upgrades.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	2.100	0.000	0.000	0.000
RDT&E Articles Qty				
COBRA: SD&D Contract, Northrup Grumman, System Design.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.851	0.500	0.500	0.850
RDT&E Articles Qty				
COBRA: NAVSEA Technical and Contractual Support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.120	0.100	0.000	0.200
RDT&E Articles Qty				
COBRA: NAVAIR Technical Support, Platform Integration Services				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.215	0.822	0.435	1.038
RDT&E Articles Qty				
COBRA: MCSC Program Support				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	4.440	2.040	0.000
RDT&E Articles Qty				
COBRA: SD&D Contract, Northrup Grumman, System Development, Spiral 1.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	7.645
RDT&E Articles Qty				
COBRA: SD&D Contract, Northrup Grumman, System Development, Spiral 2.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.521	1.533
RDT&E Articles Qty				
GCCS-13: Operational system development. Funding for this effort in FY02 and FY03 is provided under Project C2270 of this Program Element (PE).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.400	0.574
RDT&E Articles Qty				
IAS MOD: Critical improvements to GCCS-13 Intelligence Support software for USMC requirements. Funding for this effort in FY02 and FY03 is provided under Project C2270 of this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Support of integration facility. Funding for this effort in FY02 is provided under Project C2270 of this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
IAS MOD: Joint interoperability assessment and documentation. Funding for this effort in FY02 is provided under Project C2270 of this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.307	0.436
RDT&E Articles Qty				
IAS MOD: Software modifications to support USMC joint interoperability. Funding for this effort in FY03 is provided under Project C2270 of this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.200	0.000
RDT&E Articles Qty				
IAS MOD Kit: Perform trade study for the IOS server, MEF IAS client and IOW laptop.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.070	0.000
RDT&E Articles Qty				
IAS MOD Kit: Joint Tactical Terminal Integration.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.277	0.288
RDT&E Articles Qty				
IBR: Engineering and technical management support.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.854	0.722
RDT&E Articles Qty				
IBR: Technical assessment of implementation of the Integrated Broadcast Service Common Message Format into Marine Corps Host Systems.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.340
RDT&E Articles Qty				
ISR: Program Management and Technical Support for the ISR Program.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.420
RDT&E Articles Qty				
ISR: Engineering Support for delivery of new technology initiatives to the Operating Forces.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.308
RDT&E Articles Qty				
ISR: System Engineering support for the ISR Testing and Training Center.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.404	0.180	0.316	0.261
RDT&E Articles Qty				
JSTARS: Engineering and technical support for development and integration of connectivity software that would reside on existing MAGTF systems and utilize JSTARS data.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.250	0.000	0.000	0.000
RDT&E Articles Qty				
JSTARS: Contractor advisory and assistance services.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDTE, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.142	0.000	0.000	0.000
RDT&E Articles Qty				
JSTARS: Common Ground Moving Target Indication client testing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.185	0.000	0.000	0.000
RDT&E Articles Qty				
JSTARS: Joint Services Work Stations (JSWS) Field User Evaluation (FUE).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.485	0.000	0.000
RDT&E Articles Qty				
JSTARS: Integration of Surveillance Common Data Link (SCDL) follow-on effort.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.340	0.000
RDT&E Articles Qty				
JSTARS: Integration of MTES software upgrade into Common Ground Station (CGS) architecture.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.488
RDT&E Articles Qty				
JSTARS: Integration of emerging Moving Target Indicator (MTI) sensors into JSTARS CGS software baseline.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.044	0.000	0.000	0.000
RDT&E Articles Qty				
JSIPS-TEG: Develop Full Operational Capability; implement factory system for integration of required software/hardware upgrades.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.560	0.485	0.400	0.355
RDT&E Articles Qty				
JSIPS-TEG: Engineer and technical management support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.300	0.000	0.000	0.000
RDT&E Articles Qty				
JSIPS-TEG: Technical assessment of SIEC capability in support of the TEG-PIP initiative.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	1.771	0.000	0.000
RDT&E Articles Qty				
JSIPS-TEG: Development of upgrades to existing software baseline to include the capability to receive and process emerging airborne imagery sensor collection platforms.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.815	0.000
RDT&E Articles Qty				
JSIPS-TEG: Development of Time Sensitive Targeting (TST) interfaces within the common software baseline.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.940
RDT&E Articles Qty				
JSIPS-TEG: Development of sensor cross-cueing interfaces withing the common software baseline.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.940
RDT&E Articles Qty				
JSIPS-TEG: Development of man-portable Common Data Link (CDL) capability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.146	0.147
RDT&E Articles Qty				
MP SIDS: Engineering and technical support for product development of program hardware and software refresh.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.064	0.055
RDT&E Articles Qty				
MP SIDS: Program Management and technical support for product development of program hardware and software refresh.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.021	0.038
RDT&E Articles Qty				
MP SIDS: Program Management and technical support for Technical and Evaluation of program refresh.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.890	0.904
RDT&E Articles Qty				
TCAC: Software development keeping TCAC with COE 5.X and future releases.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.790	2.199	2.253	2.317
RDT&E Articles Qty				
TENCAP: Program support and management; evaluate national intelligence data systems for MAGTF applicability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.455	0.400	0.428	0.437
RDT&E Articles Qty				
TENCAP: Technical assessments of emerging national data dissemination capabilities.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.458	0.000	0.000	0.000
RDT&E Articles Qty				
TENCAP: Training and education efforts by providing the Fleet Marine Force with TENCAP simulation, visualization, and data receipt and dissemination capabilities.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.100	0.145	0.148
RDT&E Articles Qty				
TENCAP: Support operational planning to enhance operating force capabilities to US national intelligence data within the MAGTF C4I architecture.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.267	0.100	0.103
RDT&E Articles Qty				
TENCAP: Evaluate the utility of emerging exploitation, automated and manual target recognition and detection tools.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.235	0.081	0.191	0.132
RDT&E Articles Qty				
TPC: Contractor support for Mods				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.075	0.199	0.207	0.215
RDT&E Articles Qty				
TPC: Perform Mods OT&E				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	2.211	0.689	0.000	0.750
RDT&E Articles Qty				
TPCS-MPC: EDM Design.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.880	0.425	0.000	0.525
RDT&E Articles Qty				
TPCS-MPC: System development.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.517	0.650	0.126	0.000
RDT&E Articles Qty				
TPCS-MPC: Training development and test support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.518	0.971	0.000	0.392
RDT&E Articles Qty				
TPCS-MPC: Program support and management.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.562	0.000	0.000	0.463
RDT&E Articles Qty				
TPCS-MPC: Contractor advisory assistance service.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	1.100
RDT&E Articles Qty				
TPCS-MPC: Operational Test and Evaluation (OT&E).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.532	2.366	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of HHPM and Low-Cost Imager.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Acoustic classification effort.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.027	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Developmental effort to improve robustness/efficiency of sensor formula module within the Remote Sensor Management System (RSMS)				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE:
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N/BA-7 Operational Sys Dev			0206313M Marine Corps Communication Systems		February 2003
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.000	0.000	0.000
RDT&E Articles Qty					
TRSS-PIP: Technical assessment/feasibility study for alternative life-cycle aintenance solution.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.120	0.577	1.048
RDT&E Articles Qty					
TRSS-PIP: Development of Advanced Air Delivered Sensor (AADS) store.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.565	0.000	0.000
RDT&E Articles Qty					
TRSS-PIP: Software development of HHPM and Low Cost Imager; Improved Air Delivered Sensor (IADS) II; Encodder Treansmitter Unit (ETU) II; Windows 2000 migration; and RSMS ver. 3.1 field verification.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.097	0.000	0.000
RDT&E Articles Qty					
TRSS-PIP: R&D contractual supports for HHPM and Low-Cost Imager.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.411	0.000	0.000
RDT&E Articles Qty					
TRSS-PIP: R&D support.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.052	0.216	0.000
RDT&E Articles Qty					
TRSS-PIP: R&D support for alternative life-cycle maintenance effort.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.026	0.000	0.000
RDT&E Articles Qty					
TRSS-PIP: Field-testing and evaluation of IADS II.					
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost			0.044	0.020	0.060
RDT&E Articles Qty					
TRSS-PIP: NAVAIR consulting for AADS Store.					

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems		C2272 Intelligence C2 Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Development of Unattended Ground Miniaturized Sensors (UGMS) and AADS electronic components.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Air Certification of Advanced Air Delivered Sensor (AADS) store.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.300	0.700	0.000
RDT&E Articles Qty				
TRSS-PIP: Software Development of AADS and UGMS Monitoring System.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
TRSS-PIP: Technical assessment of mobile sensors.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.500	1.450
RDT&E Articles Qty				
TRSS-PIP: Development of Visual Intelligence Surveillance Target Alert System (VISTAS).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.962
RDT&E Articles Qty				
TRSS-PIP: Development of mobile sensors.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.150	1.000
RDT&E Articles Qty				
TRSS-PIP: Software development of VISTAS.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.005
RDT&E Articles Qty				
TRSS-PIP: Development of air relay/recovery.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.647
RDT&E Articles Qty				
TRSS-PIP: Development of alternative power.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.180
RDT&E Articles Qty				
TRSS-PIP: Software development of air relay/recovery.				
(U) Total \$	0.000	18.862	17.616	32.424

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communication Systems	C2272 Intelligence C2 Systems		
(U) PROJECT CHANGE SUMMARY:				
	FY2002	FY2003	FY2004	FY2005
(U) FY 2003 President's Budget:	18.286	19.900	16.424	19.097
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Prog Reduction	-0.051	-1.548	0.039	-1.730
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings	-1.308		1.159	15.058
(U) SBIR/STTR Transfer				
(U) Minor Affordability Adjustment	-0.065		-0.006	-0.001
(U) FY 2004 President's Budget:	16.862	18.352	17.616	32.424
CHANGE SUMMARY EXPLANATION:				
(U) Funding: Increase in funding for FY04 and FY05 is due to the realignment of programs within the Marine Corps.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N/BA-7 Operational Sys Dev			0206313M Marine Corps Communication Systems			C2272 Intelligence C2 Systems						
(U) C. OTHER PROGRAM FUNDING SUMMARY:												
Line Item No. & Name			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
PMC BLI 471400	Intell Support	TRSS-PIP	0.000	0.000	9.476	13.054	20.102	18.775	16.411	13.786	Continuing	Continuing
PMC BLI 474700	Intell Support	TRSS-PIP	1.811	5.788	0.000	0.000	0.000	0.000	0.000	0.000	0	7.599
PMC BLI 474700	Intell Support	CIHEP	0.000	1.788	1.390	1.489	1.585	1.681	1.803	1.909	Continuing	Continuing
PMC BLI 474700	Intell Support	COBRA	0.000	0.000	0.000	0.000	1.210	1.817	3.227	0.250	Continuing	Continuing
PMC BLI 474700	Intell Support	JSIPS	5.699	11.427	2.905	0.618	0.000	0.000	0.000	0.000	0	20.649
PMC BLI 474700	Intell Support	TPCS-MULTI	0.000	0.000	0.000	7.086	8.086	7.771	5.929	0.275	Continuing	Continuing
PMC BLI 474700	Intell Support	MP SIDS	0.000	0.000	1.062	2.857	1.711	1.712	1.762	1.721	Continuing	Continuing
PMC BLI 474700	Intell Support	IBR	2.494	0.000	1.557	3.545	1.409	0.418	0.428	0.436	Continuing	Continuing
PMC BLI 474700	Intell Support	TPC	1.853	7.170	3.317	0.573	0.000	0.000	0.000	0.000	Continuing	Continuing
PMC BLI 474700	Intell Support	RREP	0.000	3.939	0.000	0.000	4.194	0.000	0.000	4.228	Continuing	Continuing
PMC BLI 474700	Intell Support	TSCM	0.000	0.000	2.245	0.000	1.233	0.000	1.330	0.000	Continuing	Continuing
PMC BLI 474900	Intell Support	IAS MOD Kit	1.570	1.315	1.347	1.354	1.375	1.398	1.445	1.474	Continuing	Continuing
PMC BLI 474900	Mod Kits Intell	TCAC	0.863	1.462	0.345	1.545	0.945	0.945	0.945	1.145	Continuing	Continuing
PMC BLI 474900	Mod Kits Intell	JSTARS	1.680	0.262	3.331	5.606	4.617	0.088	4.623	1.504	Continuing	Continuing
PMC BLI 474900	Mod Kits Intell	TERPES	1.656	0.000	2.828	0.000	3.022	0.000	3.182	0.000	Continuing	Continuing
PMC BLI 474900	Mod Kits Intell	ISR	0.000	0.000	0.000	2.076	4.616	4.634	4.754	4.776	Continuing	Continuing
(U) Related RDT&E:												
(U) PE 0301301L (Department of Defense Intelligence and Information Systems/Military Intelligence Integrated Data System/Integrated Data Base I and II)												
(U) PE 0604270A (Intelligence and Electronic Warfare Common Sensor (IEWCS), TACJAM-A)												
(U) PE 0305885G (Tactical Cryptologic Program)												
(U) PE 0603730A (Tactical Surveillance System - Advanced Development), Army TENCAP, Project D560												
(U) PE 0603766A (Tactical Electronic Surveillance System - Advanced Development), Army TENCAP, Project D907												
(U) PE 0604740A (Tactical Surveillance System - Engineering Development), OSD TENCAP, Project D662												
(U) PE 0902398M (United States Special Operations Command), Chariot Program												
(U) PE 0605867N (SEW Surveillance/Reconnaissance Support), Project Z1034												
(U) PE 0206313M (Marine Corps Communication Systems), Project C9273												

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
<p>(U) D. ACQUISITION STRATEGY:</p> <p>(U) ACQUISITION STRATEGY JSTARS: JSTARS will utilize ongoing Army and Navy JSTARS contracts for procurement of follow-on Common Data Link (CDL) upgrades and for Pre-Planned Product Improvements (P3I) to the JSTARS CGS software baseline. SPAWAR-Charleston, SC will oversee the integration and testing of these upgrades within the USMC C4I architecture. On-Site contractor logistical support will be provided through General Dynamic's I2P2 contract out of MCLB, Albany, GA.</p> <p>(U) ACQUISITION STRATEGY COBRA: COBRA System Development, Test and Demonstration based upon a competitive, multi-year, CPFF/CPIF contract awarded to Northrop Grumman 4Q 2001. Production will be FFP. Technology insertion will add objective capabilities as they are matured and integrated by other DOD organizations.</p> <p>(U) ACQUISITION STRATEGY JSIPS TEG: The three deployed TEG(s) were procured from an ESC USAF Raytheon contract. During FY02, the Marine Corps brought control of the TEG program into Marine Corps System Command. A contract is in place with SPAWAR Charleston, SC to upgrade the TEG(s), conduct training, provide logistical support, sustainment and program management. Once a system baseline is established and tested, a MS III decision will be scheduled.</p> <p>(U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities.</p> <p>(U) ACQUISITION STRATEGY TRSS: Development will be competitive down selection process to two vendors for a Cost Plus Development Contract followed up with an award to one vendor with a FFP Production Contract. Air certification will be conducted in house at NAVAIR Patuxent River NAS, MD.</p> <p>(U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.</p> <p>(U) ACQUISITION STRATEGY CIHEP: 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>(U) ACQUISITION STRATEGY MP SIDS: Seventy three (73) suites of the refreshed MP SIDS have been integrated and are in-process of being fielded. Fielding will be accomplished during the FY 02-03 timeframe. A contract is in place with SPAWAR Charleston, SC to provide configuration management, research and development and program management support. The MP SIDS has an established baseline and will receive a technological refresh of 33% of the system each year for FY 04 through 06.</p> <p>(U) ACQUISITION STRATEGY GCCS-I3: The contract vehicle to be used is an existing Cost Reimbursable contract. 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>(U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements.</p> <p>(U) ACQUISITION STRATEGY IBR: In house contracts will be used to conduct engineering studies and test and evaluation activities associated with the Marine Corps implementation of the Integrated Broadcast Service, Common Message Format.</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDTE, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
<p>(U) ACQUISITION STRATEGY TPC: TPC will continue Mods to system including the very large part of software/COTS upgrades. (Software will need security testing at each software upgrade).</p> <p>(U) ACQUISITION STRATEGY ISR: The ISR Program is embracing the capabilities-based, evolutionary approach of the new DoD 5000 series guidance to allow for a quick and efficient insertion of technology to the MAGTF. Currently, full-time contractor support is provided by BAE Applied Technologies, Bulldog Technical Services, and MTC Services Corporation. All Contractor support is resident within the ITS facility.</p> <p>(U) ACQUISITION STRATEGY IAS: The IAS program uses existing Government contracts for hardware and software development and integration. The system is comprised primarily of Commercial Off-the-Shelf (COTS) and Government Off-The-Shelf (GOTS) equipment.</p>		
<p>(U) E. MAJOR PERFORMERS:</p> <p>MANPACK SIDS (MP SIDS) FY 04 SPAWAR, CHARLESTON, S.C. Provide funds to EMA for training and integration. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Provide funds for program management and field testing technical support. FY 05 SPAWAR, CHARLESTON, S.C. Provide funds to EMA for training and integration. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Provide funds for program management and field testing technical support.</p> <p>INTELLIGENCE BROADCAST RECEIVER (IBR) FY 04 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA Provide funds for Engineering and Program management support. COMPUTER SCIENCE CORPORATION (CSC), Woodbridge, VA Provide funds to MDA Technologies for IBS Common Message format implementation assessment. FY 05 NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Stafford, VA Provide funds for Engineering and Program management support. COMPUTER SCIENCE CORPORATION (CSC), Woodbridge, VA Provide funds to MDA Technologies for IBS Common Message format implementation assessment.</p> <p>INTELLIGENCE ANALYSIS SYSTEM (IAS) FY 04 SPAWAR, CHARLESTON, S.C. Provide funds for improvement to GCCS-I3 software, joint interoperability testing, trade study for IOS server and clients and integration of JTT. FY 05 SPAWAR, CHARLESTON, S.C. Provide funds for operational system development, joint interoperability, assessment and documentation and joint tactical terminal integration.</p>		

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems	
(U) E. MAJOR PERFORMERS:			
TEAM PORTABLE COLLECTION SYSTEM - MULTI-PLATFORM CAPABLE (TPCS-MPC)			
FY 02 SPAWAR, CHARLESTON, S.C. Provide funds for prime systems integrator for TPCS-MPC EDM. NAVAL SURFACE WARFARE COMMAND (NSWC), Crane, IN Provide funds to Digital Access Corp, Woodbridge, VA for SCSM development and Program Development Support Services (PDSS).			
FY 03 SPAWAR, CHARLESTON, S.C. Provide funds for prime systems integrator for TPCS-MPC EDM. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), System Engineering Technical Assistance, Stafford VA Provide funds SETA support contract for system engineering and program management. COMPUTER SCIENCE CORP, Dumfries, VA Funds provided for SETA support for Configuration Management (CM). BTG, Dumfries VA Funds provide Contractor Engineering Technical Support (CETS) at RadBn for training support and Independent Validation and Verification (IV&V) at 1st and 2nd RadBn.			
FY 05 SPAWAR, CHARLESTON, S.C. Provide funds for prime systems integrator for TPCS-MPC EDM. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), System Engineering Technical Assistance, Stafford VA Provide funds SETA support contract for system engineering COMPUTER SCIENCE CORP, Dumfries, VA Funds provided for SETA support for Configuration Management (CM). MARINE CORP OPERATIONAL TEST & EVALUATION ACTIVITY (MCOTEA), Quantico, VA Funds provides IOT&E.			
GLOBAL COMMAND AND CONTROL SYSTEM INTEGRATED IMAGERY AND INTELLIGENCE (GCCS I3)			
FY 04 MTC Services Corporation (MTC) Stafford, VA. Provide funds for Engineering and Program support services.			
FY 05 MTC Services Corporation (MTC) Stafford, VA. Provide funds for Engineering and Program support services.			
COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)			
FY 02 NAVAL SEA WARFARE COMMAND (NSWC), Panama City, FL Provide funds for program and technical support. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Melbourne, FL Provide funds system engineering and development of Spiral 1 and Spiral 2. MARCORSYSCOM, (MCSC), Quantico,VA Provide funds for Program and technical support.			
FY 03 NAVAL SEA WARFARE COMMAND (NSWC), Panama City, FL Provide funds for program and technical support. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Melbourne, FL Provide funds system engineering and development of Spiral 1 and Spiral 2. MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for Program and technical support.			
FY 04 NAVAL SEA WARFARE COMMAND (NSWC), Panama City, FL Provide funds for program and technical support. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Melbourne, FL Provide funds system engineering and development of Spiral 1 and Spiral 2. MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for Program and technical support.			
FY 05 NAVAL SEA WARFARE COMMAND (NSWC), Panama City, FL Provide funds for program and technical support. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Melbourne, FL Provide funds system engineering and development of Spiral 1 and Spiral 2. MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for Program and technical support.			

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
<p>(U) E. MAJOR PERFORMERS:</p> <p>TOPOGRAPHIC PRODUCTION CAPABILITY (TPC)</p> <p>FY 02 MARINE CORPS INTELLIGENCE ACTIVITY (MCIA) Quantico, VA. Modification to Geographically Linked Information Dissemination Environment (GLIDE) application. Dec 01 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds to Northrop Grumman Information Technology, TASC, Chantilly VA for software modification. Oct 01</p> <p>FY 03 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds to Northrop Grumman Information Technology, TASC,for DII COE software segmentation Dec 02 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for program office support under CEOSS contract Oct 02</p> <p>FY 04 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds to Northrop Grumman Information Technology, TASC,for DII COE software segmentation Dec 03 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for program office support under CEOSS contract Oct 03</p> <p>FY 05 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds to Northrop Grumman Information Technology, TASC,for DII COE software segmentation Dec 03 MARCORSYSCOM, (MCSC), Quantico, VA Provide funds for program office support under CEOSS contract Oct 03</p> <p>JOINT SURVEILLANCE TARGET ATTACK RADAR (JSTARS)</p> <p>FY 02 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Provide funds for Acquisition and Technical support. JOINT INTEROPERABILITY TEST CENTER (JITC), Ft. Huachuca, AZ. Provide funds for Interoperability testing.</p> <p>FY 03 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development. TBD, Provide funds for Acquisition and Technical support.</p> <p>FY 04 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development. TBD, Provide funds for Acquisition and Technical support.</p> <p>FY 05 SPAWAR, CHARLESTON, S.C. Provide funds for depot support, CGC integration and interoperability development. TBD, Provide funds for Acquisition and Technical support.</p> <p>JOINT SERVICE IMAGERY PROCESSING SYSTEM-TACTICAL EXPLOITATION GROUP (JSIPS-TEG)</p> <p>FY 02 SPAWAR, CHARLESTON, S.C. Provide funds for prime integration. NAVAL SURFACE WARFARE CENTER (NSWC), Crane, IN, Provide funds for Operational Testing support. MARCORSYSCOM, Quantico, VA. Provide funds for software development of software baseline. AFB, Wash, DC Classified Contract .</p> <p>FY 03 MARCORSYSCOM, Quantico, VA. Provide funds for software development. TBD, Provide funds for Acquisition and Technical support.</p> <p>FY 04 MARCORSYSCOM, Quantico, VA. Provide funds for software development of software baseline. TBD, Provide funds for Acquisition and Technical support.</p> <p>FY 05 MARCORSYSCOM, Quantico, VA. Provide funds for software development of software baseline TBD, Provide funds for Acquisition and Technical support. L3 COMM, Salt Lake City, UT. Provide funds for TIGDL development.</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
<p>(U) E. MAJOR PERFORMERS:</p> <p>TACTICAL CONTROL AND ANALYSIS CENTER (TCAC) FY 04 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. Oct 03 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. Oct 04</p> <p>TACTICAL REMOTE SENSOR SYSTEM (TRSS) FY 02 NAWC, Crane IN. Provide funds towards development of HHPM and Low-Cost Imager (UGMS-1). Jun 02 FY 02 OCEAN SYSTEMS ENGINEERING CORPORATION (OSEC), Carlsbad, CA. Provide funds towards software development of HHPM, Low-Cost Imager (UGMS-1); and Improved Air-Delivered Sensor II (IADS-II) and continuation of R&D support. Mar 02 FY03 NAWC, Crane IN. Funds to be provided towards the development of Low-Cost Imager (UGMS-I). Feb 03 FY03 MODERN TECHNOLOGIES CORP., Springfield, VA. Funds to be provided for Alternative Life-Cycle Maintenance. Feb 03 FY03 MARCORSYSCOM (MCSC), Quantico, VA. Funds to be provided for the development of the Advanced Air-Delivered Sensor (AADS). Mar 03 FY03 NAVAIR, Patuxent River, MD. Funds to be provided to PM-265 to begin air certification process of the AADS store. Apr 03. FY03 OCEAN SYSTEMS ENGINEERING CORP. (OSEC), Carlsbad, CA. Funds to be provided for Software Development of UGMS Monitoring System. Apr 03. FY 04 OCEAN SYSTEMS ENGINEERING CORPORATION (OSEC), Carlsbad, CA. Funds to be provided for software development of the AADS, UGMS and VISTAS. Oct 04. FY04 MARCORSYSCOM (MCSC), Quantico, VA. Funds to be provided for the development of the AADS Store. Oct 04. FY04 MARCORSYSCOM (MCSC), Quantico, VA. Funds to be provided for the development of the VISTAS. Oct 04. FY04 NAVAIR, Patuxent River, MD. Funds to be provided for Consulting of AADS Store. Oct 04. FY05 MTC SERVICES CORPORATION, Chula Vista, CA. Funds to be provided for the continuation of development of mobile sensors. Dec 04. FY 05 OCEAN SYSTEMS ENGINEERING CORP (OSEC), Carlsbad, CA. Funds to be provided for software development of mobile sensors, VISTAS, and Air Relay/Recovery. Dec 04. FY05 MARCORSYSCOM (MCSC), Quantico, VA. Funds to be provided to continue the development of the VISTAS and Alternative power. Dec 04. FY05 NAVAIR, Patuxent River, MD. Funds to be provided for the development of the air relay/air recovery. Dec 04.</p> <p>COUNTERINTELLIGENCE AND HUMAN INTELLIGENCE (HUMINT) EQUIPMENT PROGRAM (CIHEP) FY02 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to Northrop Grumman IT, Stafford, VA for Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY02 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to MTC Service Corp Dumfries, VA for Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY02 MARCORSYSCOM (MCSC), Quantico, VA. Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY02 ACTION SYSTEMS, Las Cruces, NM. Engineering, Integration and technical support for tech refresh and upgrade of program hardware and software Oct 02. FY03 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to Northrop Grumman IT, Stafford, VA for Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY03 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to MTC Service Corp Dumfries, VA for Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY03 MARCORSYSCOM (MCSC), Quantico, VA. Program Management support for tech refresh and upgrade of program hardware and software Oct 02. FY03 ACTION SYSTEMS, Las Cruces, NM. Engineering, Integration and technical support for tech refresh and upgrade of program hardware and software Oct 02. FY04 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to Northrop Grumman IT, Stafford, VA for Pgm Mgmt support for tech refresh and upgrade of program hardware and software Oct 03. FY04 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to MTC Service Corp Dumfries, VA for Pgm Mgmt support for tech refresh and upgrade of program hardware and software Oct 03. FY04 MARCORSYSCOM (MCSC), Quantico, VA. Program Management support for tech refresh and upgrade of program hardware and software Oct 03. FY04 USAIMA, Fort Meade, MD. Engineering, Integration and technical support for tech refresh and upgrade of program hardware and software Oct 03. FY05 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to Northrop Grumman IT, Stafford VA for Pgm Mgmt support for tech refresh and upgrade of program hardware and software Oct 04. FY05 MARCORSYSCOM (MCSC), Quantico, VA. Funds provided to MTC Service Corp Dumfries, VA for Pgm Mgmt support for tech refresh and upgrade of program hardware and software Oct 04. FY05 MARCORSYSCOM (MCSC), Quantico, VA. Program Management support for tech refresh and upgrade of program hardware and software Oct 04. FY 05 ACTION SYSTEMS, Las Cruces, NM. Engineering, Integration and technical support for tech refresh and upgrade of program hardware and software Oct 04.</p>		

UNCLASSIFIED

CLASSIFICATION:														
Exhibit R-3 Cost Analysis										DATE: February 2003				
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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TENCAP	Various	Delfin	2.785	0.800	10/01	2.199	10/02	2.253	12/03	2.317	12/04	Cont.	Cont.	
TENCAP	TBD	TBD	0.200	0.000		0.267	03/03	0.100	12/03	0.103	12/04	Cont.	Cont.	
TENCAP	MIPR	SMC/XRBP		0.320	04/02							0.000	0.320	0.320
COBRA	RCP	CSS	0.800	2.100	10/01	0.658	10/02					Cont.	Cont.	
COBRA	WR	BRTRC	0.260	0.100	12/01	0.006	12/02					Cont.	Cont.	
COBRA	WR	NAWC-AD	0.200	0.020	12/01	0.200	12/02					Cont.	Cont.	
COBRA	WR	NSWC	0.281	0.851	04/02	0.025	04/03					Cont.	Cont.	
COBRA	RCP	various						0.435	12/03	1.038	12/04	Cont.	Cont.	
COBRA	WR	NAVSEA						0.500	10/03	0.850	10/04	Cont.	Cont.	
COBRA	WR	NAVAIR								0.200	11/04	Cont.	Cont.	
JSIPS - TEG	WR	MCSC		0.183	01/02							Cont.	Cont.	
JSIPS - TEG	WR	NSWC, Crane		0.377	01/02							Cont.	Cont.	
JSIPS - TEG	RCP	TBD				0.485	10/02	0.400	10/03	0.355	10/04	Cont.	Cont.	
JSIPS - TEG	RCP	MCSC				1.771	01/03	1.815	01/04	0.940	01/05	Cont.	Cont.	
JSIPS - TEG	RCP	L3 COMM								0.940	11/05	Cont.	Cont.	
TPC	RCP	MCSC	0.371	0.235	12/01	0.081	12/02	0.191	12/03	0.132	12/04	Cont.	Cont.	
TPCS-MPC	RCP	NGIT		0.562	11/01							Cont.	Cont.	
TPCS-MPC	RCP	CSC		0.464	03/02	0.971	04/03			0.855	TBD	Cont.	Cont.	
TPCS-MPC	RCP	DAC		0.054	03/02							Cont.	Cont.	
TPCS-MPC	MIPR	MCOTEA						0.126	12/03	1.100	TBD	Cont.	Cont.	
TPCS-MPC	RCP	NSWC, Crane		0.880	08/02							Cont.	Cont.	
MP SIDS	RCP	NGIT						0.050	02/04	0.050	01/05	Cont.	Cont.	
IAS MOD KIT	RCP	SPAWAR						0.470	10/03	0.574	10/04	Cont.	Cont.	
IAS MOD KIT	WR	SPAWAR						0.507	11/03	0.436	11/04	Cont.	Cont.	
GCCS I3	RCP	MTC						0.893	10/03	0.937	10/04	Cont.	Cont.	
GCCS I3	RCP	G2 Technology						0.628	10/03	0.596	10/04	Cont.	Cont.	
TCAC	RCP	BTG						0.890	10/03	0.904	10/04	Cont.	Cont.	

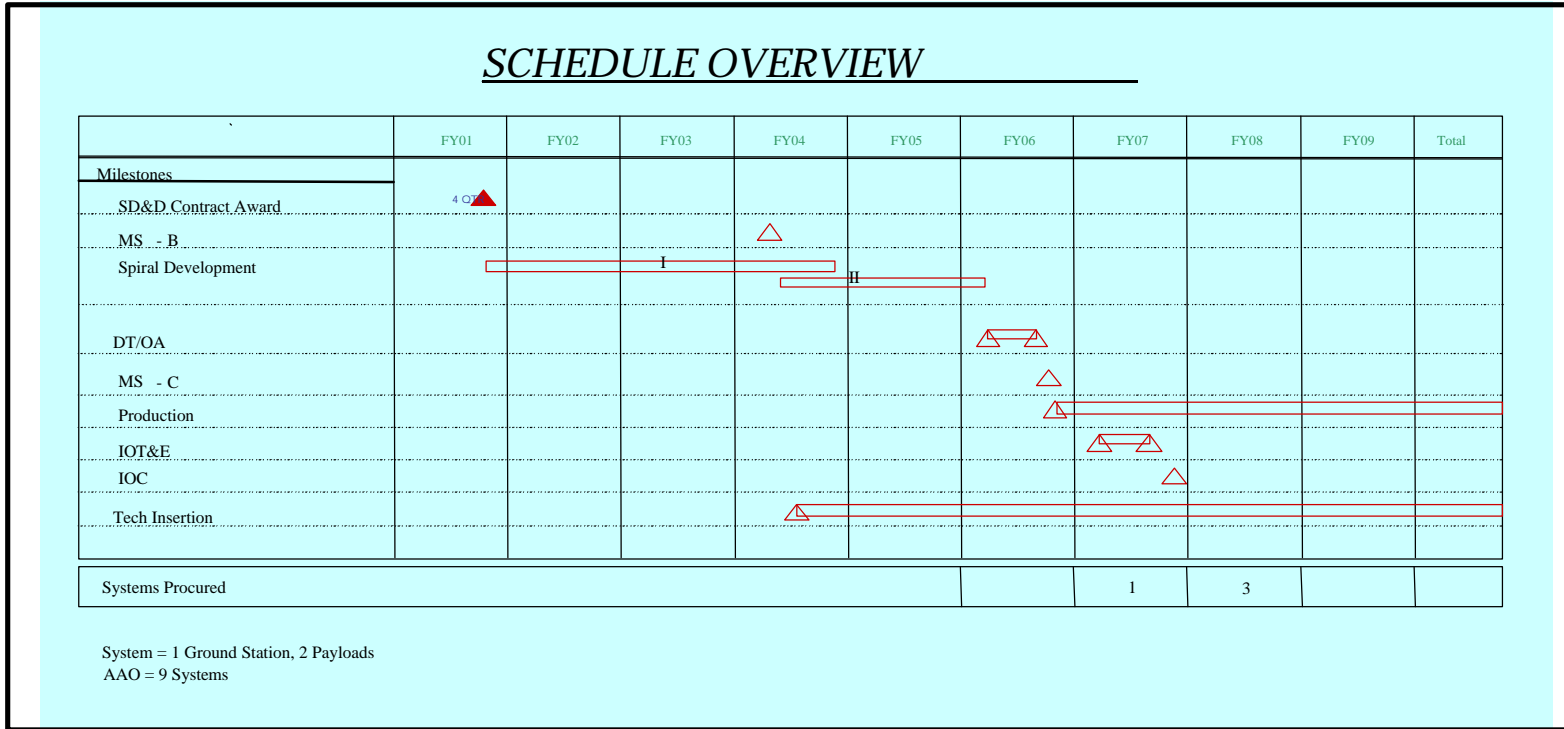
UNCLASSIFIED

CLASSIFICATION:														
Exhibit R-3 Cost Analysis								DATE: February 2003						
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						
JSTARS	RCP	NGIT		0.242	0.182	03/02							Cont.	Cont.
JSTARS	RCP	TBD					0.180	10/02	0.316	10/03	0.261	10/04	Cont.	Cont.
JSTARS	WR	SPAWAR					0.485	11/02	0.340	01/04	0.488	01/05	Cont.	Cont.
JSTARS	MIPR	JITC			0.145	03/02							Cont.	Cont.
JSTARS	MIPR	WR-ALC			0.060	03/02							Cont.	Cont.
IBR	RCP	CSC/MDA							0.100	10/03			Cont.	Cont.
TRSS-PIP	WR	NSWC, Crane			0.097	02/02							Cont.	Cont.
TRSS-PIP	RCP	OSEC			0.235	11/01							Cont.	Cont.
TRSS-PIP	RCP	MilleniumTC			0.211	04/02							Cont.	Cont.
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TRSS-PIP	RCP	NGIT		0.087	11/01								Cont.	Cont.
ISR	WR	MTC								0.340	01/05		Cont.	Cont.
ISR	WR	G2 Technology								0.308	01/05		Cont.	Cont.
ISR	WR	MTC								0.420	02/05		Cont.	Cont.
Subtotal Support			5.139	7.963		7.328		10.014		14.144			Cont.	Cont.
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
COBRA	WR	MCOTEA		0.050	11/02									
TPC	RCP	MCIA		0.075	12/01								Cont.	Cont.
TPC	RCP	MCSC				0.199	10/02	0.207	10/03	0.215	10/04		Cont.	Cont.
TPCS-MPC	RCP	SPAWAR		0.280	06/02	0.425	03/03			0.525	TBD		Cont.	Cont.
TPCS-MPC	RCP	BTG		0.517	03/02	0.650	03/03						0.000	1.167 1.283
MP SIDS	RCP	NGIT						0.010	01/04	0.010	01/05		Cont.	Cont.
MP SIDS	WR	SPAWAR						0.014	01/04	0.015	01/05		Cont.	Cont.
Subtotal T&E			0.000	0.922		1.274		0.231		0.765			Cont.	Cont.
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MP SIDS	WR	SPAWAR						0.011	01/03	0.018	01/05		Cont.	Cont.
Subtotal Management			0.000	0.000		0.000		0.011		0.018			Cont.	Cont.
Remarks:														
Total Cost				16.862		18.352		17.616		32.424			Cont.	Cont.

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
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

**COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)
MILESTONE SCHEDULE**



Program Funding Summary	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(APPN, BLI #, NOMEN)										
(U) RDT&E,N	3.286	5.862	2.975	9.733	6.424	3.433	1.652	1.106	Continuing	Continuing
(U) PMC BLI# 474700 Intell Supp Eq COBRA	0	0	0	0	1.210	1.817	3.227	0.250	Continuing	Continuing

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Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2003
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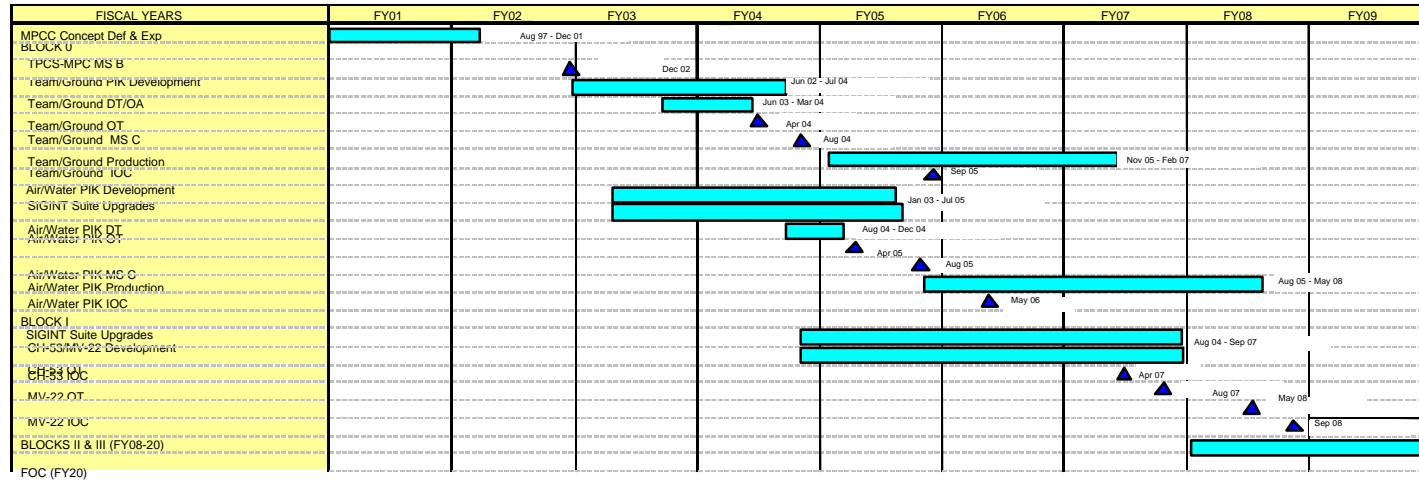
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2272 Intelligence C2 Systems
----------------------------------------------------------------------------	--------------------------------------------------------------------	-----------------------------------------------------------------

COBRA SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MS B			2Q					
Spiral Development II			2Q-----1Q					
DT/OA					2Q			
MS C					3Q			
Production					4Q			
IOT&E						1Q-----3Q		
IOC						4Q		
Tech Insertion			3Q-----					

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
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 MPC Milestone Schedule



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N	4.688	2.735	0.126	3.230	2.610	3.514	2.815	1.498	Continuing	Continuing
(U) PMC BLI# 474700 Intell Sup (TPCS)	0	0	0	7.086	8.086	7.771	5.929	0.275	Continuing	Continuing

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EXHIBIT R-2a, RDT&E Project Justification											DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2273 Air Operations C2 Systems				
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost			21.930	65.142	95.971	106.936	79.117	106.415	31.574	20.324	Cont	Cont
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(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.</p> <ol style="list-style-type: none"> The Air Defense Communications Platform (ADCP) PIP provides an interface for the AN/TPS-59(V)3 radar and for tactical ballistic missile defense as a JTIDS network user. The ADCP provides a direct interface between the AN/TPS(V)3 and the joint services. The Aviation Radar (AN/TPS-59) is a "congressionally mandated" national asset. It is the only fielded ground based sensor which can detect and track Theater Ballistic Missiles at ranges of 400 nautical miles, for 360 degrees up to one million feet in elevation. Funding for this program has moved to Project C3099 within this Program Element (PE) FY04. 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 complete and coordinated modernization effort for the equipment of the MACCS to support its employment in an Operational Maneuver from the Sea (OMFTS) environment. The CAC2S will eliminate the current dissimilar aviation Command & Control systems, and will add the capability for aviation combat direction and air defense functions. CAC2S will be comprised of standardized tactical facilities, hardware, software and will significantly reduce the physical size and logistical footprint of existing MACCS equipment suite. Utilizing common hardware, the CAC2S will be an open architecture system that will migrate to the Defense Information Infrastructure Common Operating Environment (DII COE). Furthermore, CAC2S will execute real time functions of controlling aircraft and missiles, and employing weapon systems against time critical targets. <p>CAC2S will provide a capability that allows operators to integrate Marine aviation into joint and combined air/ground operations. CAC2S will provide the tools that perform aviation C2 planning and execution functions in a positive control environment. CAC2S will assimilate the missions and fiscal resources of the Tactical Air Operations Center (TAOM), Tactical Air Command Center and the Direct Air Support Center (DASC) and the Air Defense Communications Platform (ADCP).</p> <ol style="list-style-type: none"> The Composite Tracking Network, formerly known as Cooperative Engagement Capability (CEC), enables all CTN and CEC equipped, Anti-Air Warfare (AAW) weapons systems in a battle force to operate as a single, distributed AAW weapon system. This is accomplished providing timely sharing of fire control quality sensor data, correlated identification data, and AAW weapons management status. The sensor networking capability of CTN essentially allows forces to have a direct connection to the various sensors supported by forces throughout a battlefield enabling the development of a common understanding of the air situation. CTN consists of common processing units that interface with local and remote sensor data in order to develop a common track database and data communications pieces that enable the connectivity and networking of the sensors and processors. Funding for this program in FY02 and FY03 is found in Project C2278 with this PE. The Critical Infrastructure will develop a new capability for video teleconferencing capability via service intranet capabilities. The 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 legacy agencies ready, relevant and capable until their functions are replaced by the Common Aviation Command and Control System (CAC2S). "SIAP is the product of fused, common, continual, unambiguous tracks of airborne objects within the surveillance area." The Single Integrated Air Picture (SIAP) Systems Engineer Task Force is an ad hoc Joint effort to investigate, research and produce the most cost effective means for producing a SIAP. The SIAP System Engineer Task Force (SE TF) is not limited to just material solutions in this effort; all aspects will be considered for recommendation to produce the SIAP including tactics, techniques and procedure changes to Service operations. Funding for this program in FY03 is found in C2270 within this PE. 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: February 2003																																																																																																																																																							
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RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems																																																																																																																																																								
<p>9. The Unit Operations Center (UOC) project develops and transitions two Command and Control Imperative 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&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 automation systems.</p> <p>It will be, in essence, a "system of systems" designed to optimize the positioning, interaction, and flow of information among the various staff agencies (G-2, G-3, Operations Directorate, etc.) and their automated information systems and between the unit and higher, adjacent or subordinate units or headquarters. The Marine Corps deploys Component/Joint Task Force (JTF/Marine Air Ground Task Force (MAGTF)) command elements throughout the world to fulfill operational requirements, often in joint/combined forces arenas. The UOC is designed in garrison and tactical versions. The tactical version is called the Combat Operations Center (COC) which is an outgrowth of the integrated COC (ICOC), COC-Interim (COC(I)), and the Enhanced COC (ECOC) developments over the last two years. The garrison version is called the Command Center (CC). Funding for this program in FY02 and FY03 is found in C2270 within this PE.</p>																																																																																																																																																										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:																																																																																																																																																										
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AN/TPS-59: Developed ECP to incorporate new transmitters for the antenna.																																																																																																																																																										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005																																																																																																																																																						
Accomplishment/Effort Subtotal Cost	1.098	0.000	0.000	0.000																																																																																																																																																						
RDT&E Articles Qty																																																																																																																																																										
AN/TPS-59: Initiated ECP false alarm adaption software.																																																																																																																																																										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005																																																																																																																																																						
Accomplishment/Effort Subtotal Cost	0.000	1.939	0.000	0.000																																																																																																																																																						
RDT&E Articles Qty																																																																																																																																																										
AN/TPS-59: Develop ECPs for software improvements. Funding for this program has moved to Project C3099 within this PE.																																																																																																																																																										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005																																																																																																																																																						
Accomplishment/Effort Subtotal Cost	0.000	1.500	0.000	0.000																																																																																																																																																						

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems		
RDT&E Articles Qty				
AN/TPS-59: Develop Automatic False Alarm Reduction (FAR) software. Funding for this program has moved to Project C3099 within this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	2.100	0.000	0.000
RDT&E Articles Qty				
AN/TPS-59: Investigate Advanced Technologies to incorporate into the antenna. Funding for this program has moved to Project C3099 within this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.562	0.000
RDT&E Articles Qty				
AN/TPS-59: Adjustment for PBD 290. Funding for this program has moved to Project C3099 within this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	2.591	3.170	5.170	5.276
RDT&E Articles Qty				
CAC2S: Program management support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	5.675	8.014	11.966	18.948
RDT&E Articles Qty				
CAC2S: PDRR demonstration. 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 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	42.110	44.465	43.440
RDT&E Articles Qty				
CAC2S: System development in accordance with rephasing plan and continued sensor interface/integration, communications interface/interoperability development.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.600	0.600	2.664
RDT&E Articles Qty				
CAC2S: Independent Validation and Verification on (SPAWAR Systems Center Charleston) of Phase I Contractor's Systems Design.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.834	1.215
RDT&E Articles Qty				
CTN: Software development: Interface Design Document (IDD) development for CAC2S and CLAWS interface to CTN.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	6.307	0.000
RDT&E Articles Qty				
CTN: Development of Engineer Design Model.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.919	0.000
RDT&E Articles Qty				
CTN: Testing and Evaluation: Developmental testing support. Certification of CAC2S and CLAWS interfaces to CTN.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.530	0.610
RDT&E Articles Qty				
CTN: Program management support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	1.920
RDT&E Articles Qty				
CTN: IV&V of the certified system with interfaces to CAC2S and CLAWS.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	2.735
RDT&E Articles Qty				
CTN: Finalize Engineer Development Model for production design. Funding for this effort in FY02 and FY03 is provided under Project C2278 within this PE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	2.000	0.000	0.000
RDT&E Articles Qty				
CRITICAL INFRASTRUCTURE: VTC Coop Engineering.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.295	0.022	0.022	0.500
RDT&E Articles Qty				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems		
MACCS SUSTAINMENT: Test and evaluation on the DASC Airborne SLEP.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	2.223	0.899	0.899	0.000
RDT&E Articles Qty				
MACCS SUSTAINMENT: Planned software upgrades for the TAOM, JTIDS and TACC, DASC.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.101	0.290	0.290	0.000
RDT&E Articles Qty				
MACCS SUSTAINMENT: Program management support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	1.537	1.183	0.000
RDT&E Articles Qty				
MACCS SUSTAINMENT: Multi-Source Correlation System software development.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.000
RDT&E Articles Qty				
MACCS SUSTAINMENT: Test and Evaluation for TAOM tech insert and interoperability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	2.343
RDT&E Articles Qty				
MACCS SUSTAINMENT: Technology integration efforts for MSCS (TACC).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				
SIAP: Implement JROC approved Block 0 changes in the TAOM.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	5.960	7.833
RDT&E Articles Qty				
SIAP: Service System Engineering support to SIAP System Engineer Task Force.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.880	0.000
RDT&E Articles Qty				
SIAP: Update MCTSSA SIE HWILT (AVN C2) hardware and software to reflect SIAP changes.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.200	1.200
RDT&E Articles Qty				
SIAP: Engineering and analysis for SIAP system engineer Support.Funding for this program in FY03 is provided under Project C2270 within this PE.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.407	0.465	0.474	0.446	
RDT&E Articles Qty					
TBMCS: USMC TBMCS development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.033	0.033	0.033	0.035	
RDT&E Articles Qty					
TBMCS: MCTSSA TBMCS software support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.263	0.258	0.255	0.279	
RDT&E Articles Qty					
TBMCS: Program management support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	9.582	0.000	
RDT&E Articles Qty					
UOC: Continue engineering and manufacturing development effort of production representative modules to include UOC Universal Communications Interface Module (UCIM).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	8.798	
RDT&E Articles Qty					
UOC: Engineering and manufacturing development effort including design of production representative modules to include UOC Universal Communications Interface Module (UCIM).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000	
RDT&E Articles Qty					
UOC: Operational Testing.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.647	1.758	
RDT&E Articles Qty					
UOC: Program Management Support					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.813	
RDT&E Articles Qty					
UOC: Configuration analysis for CSSE, CE, and FICCS Unit Operations Centers. Support wireless technology upgrade, web-based training tool, and rotary generator. Funding for this effort in FY03 is provided under Project C2270 within this Program Element (PE).					
(U) Total \$	0.000	21.930	65.142	95.971	106.936

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys	C2273 Air Operations C2 Systems								
(U) FY 2003 President's Budget:	24.074 63.320 65.786 18.464									
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.065 -3.778 -0.420 -2.792									
(U) Congressional Rescissions										
(U) Congressional Increases	5.600									
(U) Reprogrammings	-1.292 30.616 91.262									
(U) SBIR/STTR Transfer	-0.431									
(U) Minor Affordability Adjustment	-0.356 -0.011 0.002									
(U) FY 2004 President's Budget:	21.930 65.142 95.971 106.936									
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in FY 04 and FY05 is due to realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI#462000, ADCP PIP	0.364	0.322	0	0	0	0	0	0	0	0.686
(U) PMC, BLI#464000, ADCP PIP	0	0	0.275	0.175	0.055	0	0	0	0	0.505
(U) PMC, BLI #463600, AN/TPS-59	5.179	7.464	0	0	0	0	0	0	0	12.643
(U) PMC, BLI #465100, AN/TPS-59	0	0	18.211	24.536	7.480	11.951	38.914	50.443	Continuing	Continuing
(U) PMC, BLI #468900, CAC2S	0	0	0	0	3.909	39.198	41.735	41.805	Continuing	Continuing
(U) PMC, BLI #464000, CTN	0	0	0	8.270	22.537	34.901	43.970	68.590	Continuing	Continuing
(U) PMC, BLI #464000, MACCS SUSTAINMENT	0.035	3.034	4.023	6.729	11.990	1.870	1.416	1.345	0	30.442
(U) PMC, BLI #464000, TBMCS (CTAPS)	2.804	2.381	6.492	3.484	3.609	3.702	3.827	3.903	Continuing	Continuing
(U) PMC, BLI #463100, UOC	0	22.518	0.015	0	0	0	0	0	0	22.533
(U) PMC, BLI #419000, UOC	0	0	29.225	36.045	41.292	124.663	151.987	147.525	Continuing	Continuing
(U) Related RDT&E: Not Applicable.										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
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
<p>(U) D. ACQUISITION STRATEGY:</p> <p>(U) ADCP: PM AD has an In Service Engineering Assessment (ISEA) with Crane. As part of the ISEA, Crane is tasked to develop, produce, and implement Engineering Change Proposals, or mods as identified in the new DOD 5000. In this case the Multi-Channel Interface (MCIU) interface to the TAOM (V)4 providing a Joint Tactical Data Link (TADIL J) capability to the TAOM (V)4 is being produced.</p> <p>(U) AN/TPS 59: Perform research and development for electronic protection and continuing resolution of Diminishing Manufacturing Sources (DMS) as well as replacement of transmitters on the 12 arrays over the FYDP.</p> <p>(U) CAC2S: The contracting strategy is centered on a family of options that will be exercised from PDRR through production based on contractor performance. The base contract is for PDRR and there will be options for SDD and Production. The PDRR contract is a Cost Plus Fixed Fee for 12 month period. Following the PDRR phase, an option for the SDD phase will be exercised. The ESDD will be Cost Plus Award Fee. After successful completion of SDD, a production option will be exercised. The production contracts will be Firm Fixed Price Successive Targets (Modified).</p> <p>(U) CRITICAL INFRASTRUCTURE: The program will be executed under Government Works contract by evaluating proposals that will be compatible with DVS-G and service programs.</p> <p>(U) MACCS SUSTAINMENT: The Direct Air Support Central (Airborne) Abbreviated Acquisition Program is utilizing a sole-source strategy with Computing Devices Canada, an owned subsidiary of General Dynamics, for procurement of Communications Distribution System equipment. Prototype development and system integration will be conducted by Naval Surface Weapons Center, Crane, IN.</p> <p>(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.</p> <p>(U) SIAP is a systems engineering effort that will be utilized to reduce risk and increase interoperability for legacy and future C4ISR systems.</p> <p>(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.</p> <p>(U) UOC: The UOC COC is a Competitively Awarded Contract for design (cost type) and FFP production options.</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003
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) E. Major Performers:			
<p>(U) AN/TPS-59 Lockheed Martin Corp., Syracuse, NY. FY02 awarded Jan 02 for the AN/TPS-59 program to develop ECPs to incorporate electronic protection and new transmitters for the antenna and to initiate ECP false alarm adaption software. FY03 project contract with LMC in Mar 03 to develop ECPs for software improvements.</p>			
UNIT OPERATIONS CENTER (UOC)			
FY02 General Dynamics Decision Systems, Scottsdale AZ. System development, demonstration, integration, test and evaluation. Apr 02.			
FY02 Northrop Grumman, Stafford VA. Support services. Oct 02.			
FY03 General Dynamics Decision Systems, Scottsdale AZ. System development, demonstration, integration, test and evaluation. Apr 03.			
FY04 General Dynamics Decision Systems, Scottsdale AZ. System development, demonstration, integration, test and evaluation. Apr 04.			
FY05 General Dynamics Decision Systems, Scottsdale AZ. System development, demonstration, integration, test and evaluation. Apr 05.			
FY05 SPAWAR, Charleston SC. Support Services. Jan 05			
COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S)			
FY02 Northrop Grumman, Stafford VA. Support services. Oct 02			
FY02 Raytheon E-Systems, San Diego, CA. System development, demonstration, integration, test and evaluation. May 02.			
FY03 Raytheon E-Systems, San Diego, CA. System development, demonstration, integration, test and evaluation. May 03.			
FY04 Raytheon E-Systems, San Diego, CA. System development, demonstration, integration, test and evaluation. May 04.			
FY05 Raytheon E-Systems, San Diego, CA. System development, demonstration, integration, test and evaluation. May 05.			
COMPOSITE TRACKING NETWORK (CTN)			
FY04 NSWC Crane, IN. Mobility platform integrator. Jan 04			
FY04 Lockheed Martin, Syracuse NY. Radar integration. Jan 04			
FY05 NSWC Crane In. Mobility platform integrator. Jan 05			
CRITICAL INFRASTRUCTURE			
FY03 Government Works, Headquarters, Herndon, VA. Mar 03			
MACCS SUSTAINMENT			
FY02 Litton Systems, Woodland Hills Ca. Contractor Logistics Support Services. Oct 02			
FY03 Lockheed Martin, Syracuse NY. Engineering services. Jan 03			
FY04 Lockheed Martin, Syracuse NY. Engineering services. Jan 04			
FY05 Mission research. Engineering and software services. Jan 05			

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis								DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2273 Air Operations C2 Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CAC2S	WR	Center Charleston, SC	6.297	0.530	01/02	0.600	01/03	0.600	01/04	1.000	01/05	Continuing	Continuing	
CAC2S	RCP	Raytheon, San Diego CA	0.000	4.645	08/02	50.124	03/03	58.431	01/04	55.479	01/05	Continuing	Continuing	
CAC2S	RCP	SPAWAR	0.100	0.782	11/01	0.000		0.000		6.948	01/05	Continuing	Continuing	
CAC2S	RCP	EMA, Inc.	0.000	0.126	04/02	0.000		0.000		0.000		0.000	0.126	0.126
ADCP	WR	NSWC Crane, IN	1.746	0.107	03/02	0.125	03/03	0.125	03/04	0.088	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	WR	NSWC Crane, IN	0.000	0.695	03/02	1.000	03/03	0.866	03/04	0.500	10/04	Continuing	Continuing	
MACCS SUSTAINMENT	CPFF	Lockheed, Ft	0.000	0.000		1.537	01/03	1.317	01/04	0.000		Continuing	Continuing	
MACCS SUSTAINMENT	T&M	Northrop Grumman	0.000	0.000		0.000		0.000		2.819	01/05	Continuing	Continuing	
MACCS SUSTAINMENT	RCP	Litton	0.000	1.531	04/02	0.000		0.000		0.000		Continuing	Continuing	
MACCS SUSTAINMENT	RCP	CRI	0.000	0.174	01/02	0.000		0.000		0.000		Continuing	Continuing	
MACCS SUSTAINMENT	CPFF	Mission Research	0.000	0.000		0.000		0.000		2.524	1/5	Continuing	Continuing	
SIAP	RCP	MCSC, Quantico, VA	11.400	0.000		0.000		9.040	01/04	9.033	01/05	Continuing	Continuing	
AN/TPS-59	C/CPFF	Lockheed,Syracuse NY	18.736	4.210	01/02	3.439	03/03	0.562	01/04	0.000		Continuing	Continuing	
AN/TPS-59	RCP	MCSC, Quantico, VA	0.000	5.907	07/02	2.100	04/03	0.000		0.000		0.000	8.007	8.007
TBMCS	MIPR	ESC, Hanscom AFB	0.280	0.393	03/02	0.000		0.000		0.246	01/05	Continuing	Continuing	
TBMCS	WR	NSWC, Crane, IN	0.000	0.000		0.150	03/03	0.159	03/04	0.200	01/05	Continuing	Continuing	
TAOM	RCP	MCSC, Quantico, VA	2.879	0.000		0.000		0.000		0.000	0.000	0.000	2.879	2.879
CTN	WR	NSWC, Crane, IN	1.955	0.000		0.000		7.549	01/04	2.735	01/05	Continuing	Continuing	
CTN	RCP	Raytheon	0.365	0.000		0.000		0.700	01/04	1.000	01/05	Continuing	Continuing	
CTN	RCP	Solipsys	1.031	0.000		0.000		0.050	01/04	0.215	01/05	Continuing	Continuing	
CTN	RCP	Lockheed	0.482	0.000		0.000		0.500	01/04	0.000		Continuing	Continuing	
CTN	WR	NSWC Dahlgren	0.590	0.000		0.000		0.025	01/04	1.920	01/05	Continuing	Continuing	
UOC	WR	SPAWAR	4.891	0.000		0.000		0.702	01/04	3.813	01/05	Continuing	Continuing	
UOC	WR	MCSC, Quantico, VA	1.412	0.000		0.000		0.320	01/04			Continuing	Continuing	
UOC	RCP	General Dynamics		0.000		0.000		9.582	01/04	8.798	01/05	Continuing	Continuing	
CRITICAL INFRASTRUCTURE	RCP	GovWorks HQ Herndon VA				2.000	03/03					Continuing	Continuing	
Subtotal Product Development			52.164	19.100		61.075		90.528		97.318		Continuing	Continuing	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CAC2S	WR	MCSC, Quantico, VA	0.171	0.128	11/01	0.150	01/03	0.150	01/04			0.000	0.599	0.321
CAC2S	WR	MCTSSA, CPndttn,CA	0.080	0.010	12/01	0.050	01/03	0.050	01/04	1.983	01/05	Continuing	Continuing	
CAC2S	WR	MCLB Albany GA	0.016	0.005	01/02	0.005	01/03	0.005	01/04			Continuing	Continuing	
CAC2S	WR	3 rd MAW San Diego, CA	0.016	0.000	01/02	0.005	01/03	0.005	01/04			Continuing	Continuing	
CAC2S	WR	NWSC Crane, IN	0.577	0.556	06/02	1.000	01/03	1.000	01/04	0.321	01/05	Continuing	Continuing	
CAC2S	WR	MAGCC, 29 Palms, CA	0.017	0.005	06/02	0.005	01/03	0.005	01/04			Continuing	Continuing	

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2273 Air Operations C2 Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CAC2S	WR	2nd MAWCh Pt, NC	0.075	0.000		0.020	01/03	0.020	01/04			Continuing	Continuing	
CAC2S	WR	MarForRes NO, LA	0.009	0.000		0.005	01/03	0.005	01/04	0.000		Continuing	Continuing	
CAC2S	WR	MCAS Yuma, AZ	0.012	0.000		0.005	01/03	0.005	01/04	0.000		0.005	0.027	0.027
CAC2S	RCP	MCOTEA	0.000	0.250	01/02	0.125	01/03	0.125	01/04	0.321	01/05	Continuing	Continuing	
CAC2S	RCP	MCSC SE&I	0.000	0.000		0.000		0.000		0.000				
MACCS Sustainment	WR	MCTSSA, CPndltN,CA	0.000	0.000		0.150	01/03	0.150	01/04	0.000		Continuing	Continuing	
MACCS Sustainment	WR	MCAS Yuma, AZ	0.000	0.005	01/02	0.000		0.000		0.000		0.000	0.005	0.005
MACCS Sustainment	WR	MCCES, 29 Palms	0.000	0.007	01/02	0.000		0.000		0.000		0.000	0.007	0.007
MACCS Sustainment	WR	NAVAIR, Pax River	0.000	0.036	01/02	0.000		0.000		0.000		0.000	0.036	0.036
MACCS Sustainment	WR	3rd MAW	0.000	0.020	01/02	0.000		0.000		0.000		0.000	0.020	0.020
MACCS Sustainment	MIPR	Warner Robins AFB	0.000	0.118	01/02	0.000		0.000		0.000		0.000	0.118	0.118
MACCS Sustainment	WR	MCSC	0.000	0.033	01/02	0.000		0.000		0.000		0.000	0.033	0.033
ADCP	WR	MCTSSA, CPndltN,CA	0.123	0.088	01/02	0.050	01/03	0.038	01/04	0.035	01/05	Continuing	Continuing	
ADCP	WR	MCSC, Quantico, VA	0.040	0.030	01/02	0.030	01/03	0.030	01/04			Continuing	Continuing	
TBMCS	WR	MCTSSA, CPndltN,CA	0.050	0.033	01/02	0.000		0.000		0.035	01/05	0.000	0.118	0.118
TBMCS	WR	3rd MAW El Toro, CA	0.075	0.000		0.015	01/03	0.015	01/04			Continuing	Continuing	
TBMCS	WR	MCSC, Quantico, VA	0.103	0.102	01/02	0.040	01/03	0.040	01/04			Continuing	Continuing	
TBMCS	WR	MarForRes NO, LA	0.009	0.000		0.015	01/03	0.015	01/04			Continuing	Continuing	
TBMCS	WR	CG 1st MAW	0.001	0.000		0.015	01/03	0.015	01/04			Continuing	Continuing	
TBMCS	MIPR	ESC, Hanscom AFB,	0.000	0.000		0.276	01/03	0.273	01/04			Continuing	Continuing	
TBMCS	WR	2nd MAWCh Pt, NC	0.000	0.000		0.015	01/03	0.015	01/04			Continuing	Continuing	
CTN	WR	MCLB Albany GA	0.020	0.000		0.000		0.010	01/04			Continuing	Continuing	
CTN	MIPR	STA	0.432	0.000		0.000		0.160	01/04			Continuing	Continuing	
CTN	WR	CG 1 st MAW	0.014	0.000		0.000		0.005	01/04			Continuing	Continuing	
CTN	WR	MCSC, Quantico, VA	0.085	0.000		0.000		0.040	01/04			Continuing	Continuing	
Subtotal Support			1.925	1.426		1.976		2.176		2.695		Continuing	Continuing	
Remarks:														

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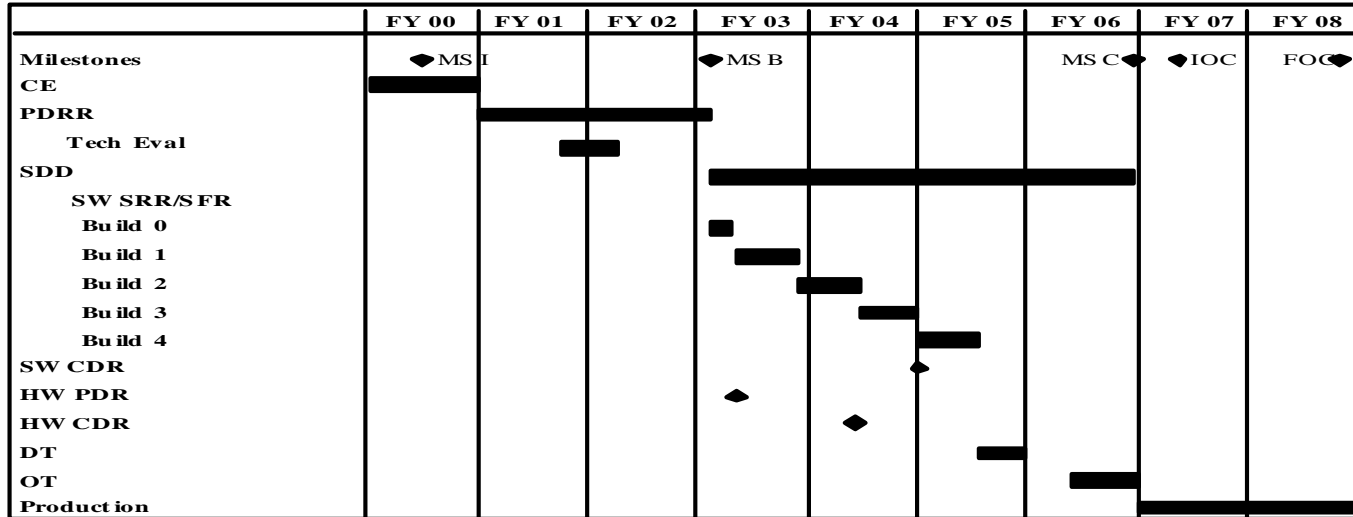
Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communications Sys					C2273 Air Operations C2 Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 03 Cost to Complete	FY 03 Total Cost	Target Value of Contract
MACCS Sustainment	RCP	MCTSSA, CPndltN,CA	0.000	0.000		0.061	01/03	0.061	01/04			Continuing	Continuing	
CTN	WR	MCTSSA, CPndltN,CA	0.003	0.000		0.000		0.032	01/04			Continuing	Continuing	
CTN	WR	MACS-24	0.087	0.000		0.000		0.012	01/04			Continuing	Continuing	
CTN	WR	DCMC	0.022	0.000		0.000		0.002	01/04			Continuing	Continuing	
CTN	WR	Port Hueneme	0.018	0.000		0.000		0.018	01/04			Continuing	Continuing	
Subtotal T&E			0.130	0.000		0.061		0.125		0.000		Continuing	Continuing	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 03 Cost to Complete	FY 03 Total Cost	Target Value of Contract
TBMCS	CPFF	Logicon	0.309	0.175	01/02	0.230	01/03	0.230	01/04	0.279	01/05	Continuing	Continuing	
CAC2S	IDIQ	Logicon	2.734	0.801	10/01	1.000	01/03	1.000	01/04	2.276	01/05	Continuing	Continuing	
CAC2S	FFP	Mevatec, Crstl City VA	0.250	0.229	07/02	0.800	01/03	0.800	01/04	2.000	01/05	Continuing	Continuing	
CAC2S	RCP	KCI	0.000	0.199	02/02	0.000				0.000		0.000	0.199	
CTN	IDIQ	Logicon	0.591	0.000		0.000		0.487	01/04	0.610	01/05	Continuing	Continuing	
UOC	IDIQ	Logicon	3.396	0.000		0.000		0.525	01/04	1.758	01/05	Continuing	Continuing	
UOC	FFP	Mevatec, Crstl City VA	0.064	0.000		0.000		0.100	01/04	0.000		Continuing	Continuing	
Subtotal Management			7.344	1.404		2.030		3.142		6.923		Continuing	Continuing	
Remarks:														
Total Cost				21.930		65.142		95.971		106.936		Continuing	Continuing	

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
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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
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CAC2S Macro Program Schedule

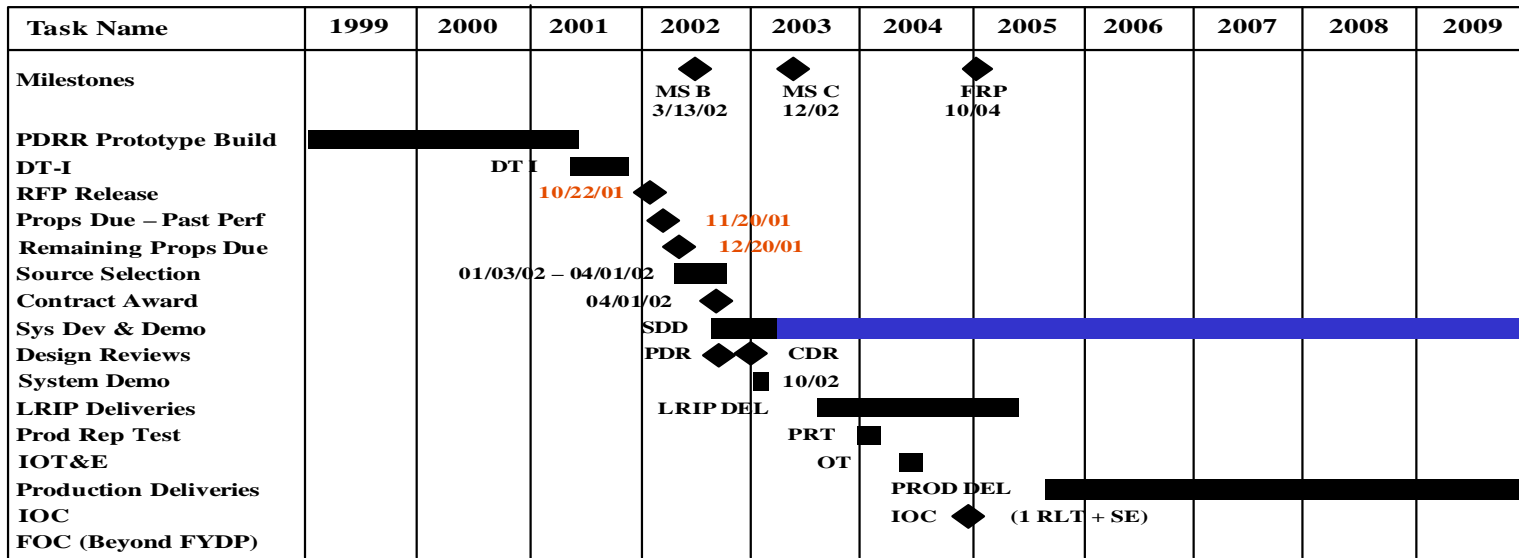


<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Comp</u>	<u>Total Cost</u>
(APPN, BLI#, NOMEN)										
(U) RDT&E,N, C2273	8.266	53.894	62.201	70.328	28.294	64.189	12.041	8.730	Continuing	Continuing
(U) PMC, BLI# 468900, CAC2S	0.000	0.000	0.000	0.000	3.909	39.198	41.735	41.805	Continuing	Continuing

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Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2003
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 Macro Program Schedule



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Comp</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N, C2270	11.112	2.353	0	0	0	0	0	0	0	13.465
(U) RDT&E,N, C2273	0	0	11.229	14.369	15.823	23.063	10.866	6.335	Continuing	Continuing
(U) PMC, BLI# 463100, UOC	0	22.518	0.015	0	0	0	0	0	0	22.533
(U) PMC, BLI# 419000, UOC	0	0	29.225	36.045	41.292	124.663	151.987	147.525	Continuing	Continuing

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

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 C2274 Intelligence C2 Warfare Systems					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost To Complete	Total Program
Project Cost	8.575	7.987	9.727	5.655	5.468	4.562	4.253	4.633	Cont	Cont
RDT&E Articles Qty										

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

(U) Command and Control (C2) Warfare Project includes the following tactical electronic intercept, direction finding, and electronic attack systems:

1. The Tactical Electronic Reconnaissance Processing and Evaluation System (TERPES) 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.
2. The Mobile Electronic Warfare Support System, Product Improvement Program (MEWSS-PIP) will be used to collect and process communication and non-communication signals and provide electronic attack capability from a mobile ground platform.
3. Team Portable Collection System (TPCS) upgrade is a semi-automated, team transportable signals intelligence system that provides communications intercept, radio direction finding analysis and reporting to the Marine Air Ground Task Force (MAGTF) Commander.
4. The Radio Reconnaissance Equipment Program (RREP) 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's 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 1st 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.
5. CESAS (FLAMES) - The Communication Emitter Sensing and Attacking System (CESAS) will be a system of COTS/GOTS designed to support the MAGTF Commander in conducting operations. It will provide the capability to effectively sense/detect and attack, through the use of electromagnetic or directed 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 Operational Maneuver from the Sea. The CESAS shall provide the capability to operate within the bandwidth of 20 to 1500 MHz (Threshold)k 2MHz to 2500 MHz (Objective) against enemy emitters that use modern modulation schemes.
6. FY02 DERF Funding RREP \$800K. Funds for Test and Evaluation of Digital Receiver Technology (DRT) and Test and approval of Lithium Battery.
7. FY02 DERF Funding FLAMES (CESAS) \$1.5M. Funds are for Research Development, Engineering, Design, Intergrate, build and test 3 Communication Emitter Sensing and Attacking System (CESAS).

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

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
C2274 Intelligence C2 Warfare Systems

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.250
RDT&E Articles Qty				

CESAS - Perform integration efforts of Development items to include Antenna and MCREWS Training equipment.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.121
RDT&E Articles Qty				

CESAS - Research and Development and Integration of software applications unique to System Control.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.200
RDT&E Articles Qty				

CESAS - Research and Development Directed Energy and Directional Attack Antennas.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.100
RDT&E Articles Qty				

CESAS - Begin Research and Development of training materials and training documentation.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.050
RDT&E Articles Qty				

CESAS - Integration of Mission Management Software with existing ESAS software to provide dynamic base capability for system software (ESAS)

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.100
RDT&E Articles Qty				

CESAS - Research and Development of Training Equipment; MCREWS modification for USQ-146 real time simulation equipment to provide a "Miles Gear" type application for Electronic Attack equipment and Victim Receiver interface.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.300
RDT&E Articles Qty				

CESAS - Program support and documentation Development and Maintainance.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.050
RDT&E Articles Qty				

CESAS - Program Management Support.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2274 Intelligence C2 Warfare Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.245	0.000	0.000	0.000
RDT&E Articles Qty				
MEWSS PIP: LAV Mobility and Endurance testing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.913	0.809	1.000	0.403
RDT&E Articles Qty				
MEWSS PIP: System software enhancements and Pre-Planned Product Improvement (P3I).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	3.443	3.144	1.000	0.000
RDT&E Articles Qty				
MEWSS PIP: ELINT System enhancements.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.900	3.502	0.300
RDT&E Articles Qty				
MEWSS PIP: Operational Readiness enhancements.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.150	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: Mod Kit 7 & 5 Test and Evaluation (MCOTEA).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.150	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: MASS Phase III SBIR (Sonetech).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.030	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: Mod Kit 7 Road Test (ATC).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.144	0.000	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: Program Management support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.242	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: System Engineering and Technical Assistance (SETA) (CSC).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.342	0.000	0.000
RDT&E Articles Qty				
TPCS Upgrade: Software upgrades/system enhancements.				

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2274 Intelligence C2 Warfare Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.690	0.510	1.044	0.923
RDT&E Articles Qty				

TERPES: Continue research on COE compliance, research for Tactical Network Protocol (TNP), research of interface software for Integrated Broadcast Receivers (IBRs), and Integrated Broadcast Service (IBS) to allow TERPES to receive joint common message formats, configuration management support; hardware engineering support services concentrating on reductions of size, weight, and power requirements.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.537	0.859	1.327	1.021
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 (Joint Tactical Terminal (JTT) or research on TADIL J). Advanced Communications Suite, Sensitive Compaartmented Information (SCI) workstation, and system accreditation.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.800	0.610	1.127	0.950
RDT&E Articles Qty				

TERPES: 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 performamance (Tactical Data Correlation, etc); continue to research COE 4.X baseline; research interfaces and interoperability requiremnts and solutions for the EA-6B mission plannng and joint mission planning environments and systems.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.116	0.415	0.412	0.463
RDT&E Articles Qty				

TERPES: Program Management Support.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.100	0.000	0.000	0.000
RDT&E Articles Qty				

RREP: Integration GOT/COTS electronic attack (EA) capability (SS-2).

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.257	0.156	0.000	0.000
RDT&E Articles Qty				

RREP: Integration GOTS/COTS electronic attack (EA) capability (SS-3).

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.315	0.424
RDT&E Articles Qty				

RREP: Research and development of the RREP SS-3 PIP

(U) Total \$	0.000	8.575	7.987	9.727	5.655
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2274 Intelligence C2 Warfare Systems

(U) PROJECT CHANGE SUMMARY:

	FY2002	FY2003	FY2004	FY2005
(U) FY 2003 President's Budget:	9.147	5.732	4.209	5.076
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions	-0.025	-1.145	0.036	-0.382
(U) Congressional Rescissions				
(U) Congressional Increases		3.400		
(U) Reprogrammings	-0.237		5.490	0.968
(U) SBIR/STTR Transfer	-0.185			
(U) Minor Affordability Adjustments	-0.125		-0.008	-0.007
(U) FY 2004 President's Budget:	8.575	7.987	9.727	5.655

CHANGE SUMMARY EXPLANATION:

- (U) Funding: See Above.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:A167

<u>Line Item No. & Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC BLI 463600 Modification Kits MEWSS	2.617	25.590	20.786	2.528	1.352	0.511	0.000	0.000	Continuing	Continuing
(U) PMC BLI 474700 Intell Suppt Eq RREP	0.000	3.939	0.000	0.000	4.194	0.000	0.000	4.228	0.000	12.361
(U) PMC BLI 474700 Intell Suppt Eq TPCS-MPC	0.000	0.000	0.000	7.086	8.086	7.771	5.929	0.275	0.000	29.147
(U) PMC BLI 474900 Mod Kits INTEL TERPES	1.656	0.000	2.828	0.000	3.022	0.000	3.182	0.000	0.000	10.688
(U) PMC BLI 463600 FLAMES (CESAS)	0.000	2.936	0.000	1.000	4.194	4.099	0.488	1.385	0.000	14.102

(U) Related RDT&E:

- (U) (U) PE 0305885G (Tactical Cryptologic Program)

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N/BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2274 Intelligence C2 Warfare Systems

(U) D. ACQUISITION STRATEGY TERPES: 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.

(U) D. ACQUISITION STRATEGY MEWSS PIP: The MEWSS PIP initiates Marine Corps Systems Command-administered contracts as follow-on to the Army CECOM Intelligence and Electronic Warfare Common Sensor (IEWCS) contract used for development/fielding of the three MEWSS PIP LRIP vehicles. These contracts are sole source to Lockheed Martin Systems Integration in Owego, New York.

(U) D. ACQUISITION STRATEGY 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. The contract is a Contract Cost Plus Fixed Fee.

(U) D. ACQUISITION STRATEGY RREP: 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).

(U) D. ACQUISITION STRATEGY CESAS: Due to the technical maturity of the equipment available, coupled with the relative low risk of the program, an AAP will be pursued. System engineering will be performed by SPAWAR, Charleston, SC. AN/USQ-146 systems will be acquired via a sole source contract between Rockwell Collins and MCSC. Configuration of equipment to meet required operation capabilities will be performed by Rockwell-Collins prior to delivery. Required modification kits will be developed by Rockwell-Collins as part of the AN/USQ-146 purchase, using designs developed by SSCC. Fielding will be conducted using support from Rockwell-Collins, a support contractor and SSCC. ILS planning and life cycle supportability will be implemented by MCSC and MARCORLOGBASES, Albany GA. Contractor Logistics Support will be used for depot support of the system.

(U) E. MAJOR PERFORMERS:

MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM, PRODUCT IMPROVEMENT PROGRAM (MEWSS-PIP)

- FY02 LOCKHEED MARTIN, Owego NY Provide funds for software enhancements and P3I support. Aug 02
EDO Reconnaissance and Surveillance Systems, Morgan Hill CA, Funds for ELINT enhancements Sep 02
Penn State Univ, State College, PA Funds for ELINT enhancements Sep 02
- FY03 LOCKHEED MARTIN, Owego NY Provide funds for software enhancements and P3I support. Nov 02
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Software enhancements and P3I. Nov 02
MCOTEA, Quantico, VA - Provide funds for operational Assessment, Mar 03.
IEWTD, Ft Huachuca, AZ - Provide funds for Developmental Testing Support, Jan03
EDO Reconnaissance Systems and Surveillance System, Morgan Hill CA, Provide funds for Elint Enhancements, Mar 03
Penn State Univ, State College, PA - Provide funds for ELINT Enhancements Mar 03
- FY04 LOCKHEED MARTIN, Owego NY Provide funds for software enhancements and P3I support. Nov 03
EDO Reconnaissance and Surveillance Systems, Morgan Hill CA, Funds for ELINT enhancements Nov 03
Penn State Univ, State College, PA Funds for ELINT enhancements Nov 03
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Legacy MEWSS readiness enhancements. Nov 03
- FY05 LOCKHEED MARTIN, Owego NY Provide funds for software enhancements and P3I support. Nov 04
SPACE AND NAVAL WARFARE SYSTEMS CENTER (SPAWAR), Charleston, SC. Legacy MEWSS readiness enhancements. Nov 04

TEAM PORTABLE COLLECTION SYSTEM (TPCS) Upgrade

- FY02 HTL, Bedford NH Funds for Joint effort with PM-CS for SS-B development
MARCORSYSCOM, Quantico VA Funds for program management and operational test support.
- FY03 NORTHROP GRUMMAN INFORMATION TECH (NGIT), Stafford VA, SETA support for systems engineering and program management.
COMPUTER SCIENCE CORP, Dumfries, VA SETA support for Configuration Management (CM)

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

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

C2274 Intelligence C2 Warfare Systems

(U) E. MAJOR PERFORMERS (Continued):

TACTICAL ELECTRONIC RECONNAISSANCE PROCESSING AND EVALUATION (TERPES)

FY02 NAVAL AIR WARFARE CENTER (NAWC), Pt Mugu CA. Provide funds for hardware, software and integration research, software security certification and accreditation.

LOCKHEED MARTIN, Denver CO. Provide funds for research on TERPES software to maintain compatibility with EA-6B Improved Capabilities (ICAP) II and III aircraft.

CALIFORNIA MICROWAVE, Woodland Hills CA. Provide funds for Common Operating Environment (COE) compliance and Tactical Network Protocol (TNP).

FY03 NAVAL AIR WARFARE CENTER (NAWC), Pt Mugu CA. Provide funds for hardware and software integration research.

LOCKHEED MARTIN, Denver CO. Provide funds for research on TERPES software to provide improvement in the interfaces and interoperability with the EA-6B and mission planning systems.

CALIFORNIA MICROWAVE, Woodland Hills CA. Provide funds for Common Operating Environment (COE) compliance, hardware; software configuration management, and software testing.

FY04 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.

CALIFORNIA MICROWAVE, Woodland Hills CA. Provide funds for Common Operating Environment (COE) compliance; research of interface software for Integrated Broadcast Receivers (IBRs).

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.

CALIFORNIA MICROWAVE, Woodland Hills CA. Provide funds for Common Operating Environment (COE) compliance; research of interface software for Integrated Broadcast Receivers (IBRs).

RADIO RECONNAISSANCE EQUIPMENT PROGRAM (RREP)

FY02 MARCORSYSCOM, Quantico VA Funds for program management and operational test support. Oct 02

FY02 NAVAL SURFACE WARFARE CENTER, Crane IN. Funds for engineering and program management support for Suite-3. Nov 02

FY03 NAVAL SURFACE WARFARE CENTER, Crane IN. Funds for engineering and program management support for Suite-3. Nov 03

FY04 NAVAL SURFACE WARFARE CENTER, Crane IN. Funds engineering and program management support for Suite-3. Nov 04

FY05 NAVAL SURFACE WARFARE CENTER, Crane IN. Funds engineering and program management support for Suite-3. Nov 05

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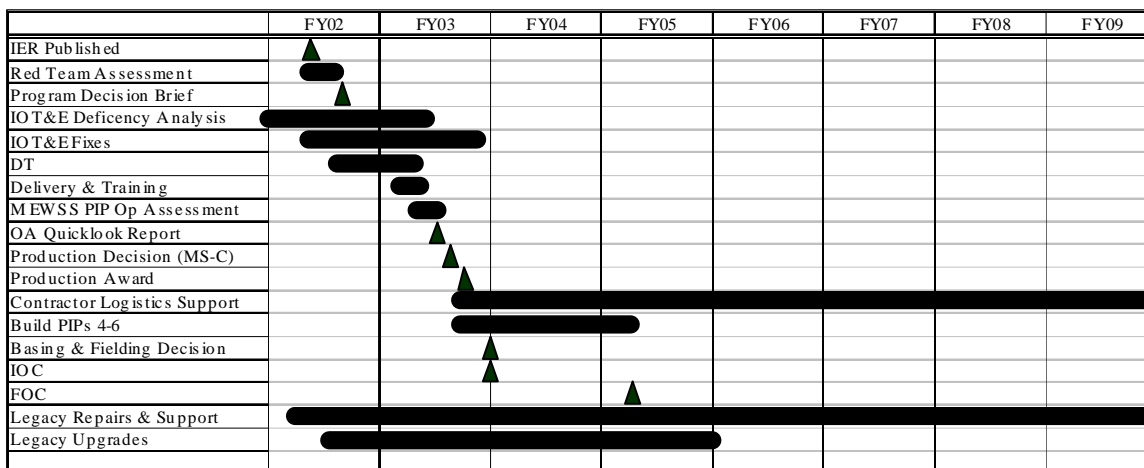
Exhibit R-3 Cost Analysis											DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication Systems					C2274 Intelligence C2 Warfare Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
MEWSS	CPFF	Lockheed Martin	11.216	4.401	11/01	4.853	11/02	5.502	11/03	0.703	11/04	Continuing	Continuing		
TPCS Upgrade	RCP	HTL	0.660	0.150	01/02	0.342	01/03					Continuing	Continuing		
TERPES	RCP	NG0-CAL Mic	0.262	0.699	02/02	0.610	10/02	1.044	10/03	0.923	10/04	Continuing	Continuing		
TERPES	RCP	Lockheed Martin	0.275	0.800	06/02	0.859	10/02	1.127	10/03	1.021	10/04	Continuing	Continuing		
TERPES	WR	NAWC, Pt. Mugu CA	2.089	1.166	01/02	0.389	10/02	1.327	10/03	0.950	10/04	Continuing	Continuing		
TERPES	RCP	PRB/COMPTEK		0.090	06/02	0.121	10/02					Continuing	Continuing		
RREP	WR	MCSC, VA		0.025	10/02							Continuing	Continuing		
RREP	RCP	NSWC, Crane		0.332	01/02	0.156	02/03	0.315	02/04	0.424	02/05	Continuing	Continuing		
CESAS	WR	SPAWARSYSCEN								0.250	10/04	Continuing	Continuing		
CESAS	FFP	DAC, Wdbg								0.121	10/04	Continuing	Continuing		
CESAS	CPFF	Antenna Res, MD								0.200	10/04	Continuing	Continuing		
CESAS	CPFF	Radio Recon Tech								0.100	10/04	Continuing	Continuing		
CESAS	FFP	BTG/Titan, Fairfax Va								0.050	10/04	Continuing	Continuing		
CESAS	T&M	RAS Eng Campbell,CA								0.100	10/04	Continuing	Continuing		
Subtotal Product Development			14.502	7.663		7.330		9.315		4.842		Continuing	Continuing		
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
TPCS Upgrade	WR	MCSC	0.436	0.239	10/01	0.242	10/02					Continuing	Continuing		
TPCS Upgrade	RCP	ARMY		0.040	12/01							Continuing	Continuing		
TPCS Upgrade	WR	SPAWARSYSCEN		0.045	12/01							Continuing	Continuing		
TERPES	WR	NAWCWPNS, Pt Mugu	0.199	0.200	01/02							Continuing	Continuing		
TERPES	WR	NG-IT	0.150	0.113	10/01	0.355	10/02	0.312	10/03	0.363	10/04	Continuing	Continuing		
TERPES	RCP	DAC, Wdbg	0.677	0.075	06/02	0.060	10/02	0.100	10/03	0.100	10/04	Continuing	Continuing		
CESAS	WR	NG-IT Stafford, VA								0.300	10/04	Continuing	Continuing		
Subtotal Support			1.462	0.712		0.657		0.412		0.763		Continuing	Continuing		
Remarks:															
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
MEWSS	RCP	Army		0.200	12/02										
Subtotal T&E			0.000	0.200		0.000		0.000		0.000		Continuing	Continuing		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
CESAS	WR	MCSC								0.050	10/04	Continuing	Continuing		
Subtotal Management			0.000	0.000		0.000		0.000		0.050		0.000	0.050		
Remarks:															
Total Cost				8.575		7.987		9.727		5.655		Continuing	Continuing		

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Exhibit 4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2274 Intelligence C2 Warfare Systems

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MEWSS PIP Schedule



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Program Funding Summary

(APPN, BLI #, NOMEN)

(U) RDT&E,N

(U) PMC, BLI# 463600 Mod Kits MEWSS

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N	4.601	4.853	5.502	0.703	0.470	0.000	0.000	0.000	0.000	16.129
(U) PMC, BLI# 463600 Mod Kits MEWSS	2.617	25.590	20.786	2.528	1.352	0.511	0.000	0.000	Continuing	Continuing

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Exhibit 4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2274 Intelligence C2 Warfare Systems

RREP MILESTONE SCHEDULE

EVENT	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10
SS-3 MS-B	3Q								
SS-3 MS-C		3Q							
SS-3 IOC/FOC			1Q						
SS-3 PIP MS B			1Q						
SS-3 PIP MS C					2Q				
SS-3 PIP IOC/FOC						1Q			
SS-4 MS B						2Q			
SS-4 MS C								2Q	
SS-4 IOC/FOC									1Q

<u>Program</u> <u>(APPN, BLI #, NOMEN)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N	0.357	0.156	0.315	0.424	0.432	0.435	0.441	0.452	Continuing	Continuing
(U) PMC BLI 474700 Intell Suppt EQ RREP	0.000	3.939	0.000	0.000	4.194	0.000	0.000	4.228	0.000	12.361

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems					C2275 Radio Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.584	8.881	8.698	4.878	4.337	4.226	3.548	Cont	Cont
RDT&E Articles Qty										

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

(U) Joint Tactical Radio System - JTRS is a OSD-mandated program a Family of Joint Multi-Channel/Multi-Mode, Software-Defined, Reprogrammable Tactical Radio Systems. Providing 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. Providing network connectivity across the radio frequency (RF) spectrum and providing the means for required tactical digital information exchanges.

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.

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, UOC, and AAAV).

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.

Tactical Elevated Antenna Mast System (TEAMS) is a single HMWWV 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.

(U) Tactical Satellite Comm Terminal - LMST- An Air Force program with PM Milsatcom (Army) managing contract with Harris Corp. The Lightweight Multiband Satellite Terminal (LMST) is a tri-band SATCOM terminal mounted in transit cases that will augment the current GMF SATCOM and at the same time, provide a commercial satellite capability. SHF Replacement (Wideband SHF) - This is a DoD (Army lead) Quad-band SHF satellite communications terminal that is intended to replace the current GMF satellite communications terminals. It will be a quad-band, HMMWV mounted terminal capable of taking full advantage of the Wideband Gapfiller satellite constellation. Its mission is to support all USMC satellite communications requirements including MAGTF commanders, FICCS, and MEU deployments. It will provide the USMC with DoD and Allied interoperability.

(U) MILSTAR Advanced Satellite Terminal (SECURE MOBILE ANTI-JAM RELIABLE TACTICAL TERMINAL (SMART-T)) - This terminal operates with MILSTAR compatible communications payloads and transmits an 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.

(U) Legacy Communications/Electronics Modifications and Sustainment 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 there lifecycle. 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 maintainance control and warranty administration. There are three SLEP/supportability upgrades required for this POM cycle. These are the AN/TRC-170 Tropospheric Scatter Microwave Radio Terminal, the Unit Level Circuit Switch (ULCS) and the AN/PSC-5 "Shadowfire" modification. 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 it's end of service life in FY05. The ULCS (TTC-42, SB-3865 and SB-3614) require sustainment and modifications to continue the operating forces capability until TSM is fielded. The AN/PSC-5 Mod allows for the fielded AN/PSC-5 to supported past FY04.

(U) Radio Battalion Mods - DERF funding \$2M. Funds are for Test and Evaluation of the Testbed-Sigint Adaptable Mobile Shelter to include Signal Simulators and Fuel Cells.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems	C2275 Radio Systems		
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.237	1.100	1.100
RDT&E Articles Qty				
JTRS: Migration/Integration Studies and Analysis. Manpack/Handheld JTRS.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.347	0.619	0.619
RDT&E Articles Qty				
JTRS: Program Support and Management.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	3.472	4.578
RDT&E Articles Qty				
JTRS: Gnd Vehicular Cluster 1 EMD Radio Manufacturing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.725	1.313
RDT&E Articles Qty				
JTRS: Gnd Vehicular (Cluster 1) Early Operational Assessment (EOA), Developmental and Operational Testing (DT/OT).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.830	0.844
RDT&E Articles Qty				
JTRS: Technical and Engineering Support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.325	0.244
RDT&E Articles Qty				
JTRS: Contract Advisory and Assistance Services.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.560	
RDT&E Articles Qty				
TSCT (LMST): Integration and update support documentation.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.100	
RDT&E Articles Qty				
TSCT (LMST): Contract support costs.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.150	
RDT&E Articles Qty				
TSCT (LMST): MCTSSA interoperability/DISA on-orbit tests.				
(U) Total \$	0.000	0.584	8.881	8.698

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems				C2275 Radio Systems					
(U) PROJECT CHANGE SUMMARY:										
	FY2002	FY2003	FY 2004	FY 2005						
(U) FY 2003 President's Budget:	0.000	0.597	1.393	1.787						
(U) Adjustments from the NAVCOMPT Budget:										
(U) Congressional/OSD Program Reductions			-0.396	-0.356						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings			7.884	7.267						
(U) SBIR/STTR Transfer										
(U) Minor Affordability Adjustment		-0.013								
(U) FY 2004 President's Budget:	0.000	0.584	8.881	8.698						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in FY 04 and FY05 is due to realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI# 464300 Jt Tactical Radio Sys	0.000	0.000	13.919	33.084	32.499	90.903	80.657	73.196	Continuing	Continuing
(U) PMC BLI# 463300 Radio Systems (LMST)	0.000	4.944	0.000	5.250	0.290	0.090	0.000	0.000	0.000	10.574
(U) PMC BLI# 463300 LEGACY COMM/ELECT	0.000	0.000	0.000	3.772	7.203	10.221	9.246	6.240	Continuing	Continuing
(U) Related RDT&E: Not Applicable										
(U) D. ACQUISITION STRATEGY:										
(U) Tactical Satellite Comm Terminal - LMST- The acquisition strategy for the LMST is based on current developmental efforts of both the Army and Air Force to develop full duplex Ka-band satellite capabilities in support of the Wideband Gapfiller satellites. The LMST integration program leverages off the current efforts and integrates the full duplex Ka-band capabilities into existing terminals.										
(U) Milstar (SMART-T) - The acquisition strategy for the SMART-T is aligned with the lead service's strategy. The Advanced Extremely High Frequency (AEHF) upgrade will increase throughput and provide interoperability between services.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems	C2275 Radio Systems
<p>(U) JTRS - JTRS is the next generation radio systems to provide required transformational capabilities while leveraging modern technologies to resolve interoperability and lifecycle cost issues. The procurement of JTRS will be blocked by capabilities available at the time of the requirement. Block 1 provides required Handheld/Manpack lifecycle replacements for aging dismantled systems and freeing Receiver-Transmitters (RT) for spare support of ground vehicular systems until Block 2, Ground Vehicular (Cluster 1 JTRS) radio systems can be procured. Also in Block 1, PDSS of EPLRS will maintain its compatibility with JTRS and reduce its overall lifecycle cost. With JTRS Block 2 and 3, the functional capabilities of today's radios are provided via software. By developing a standardized radio architecture, the same software running in one radio system can be used in radios developed by separate manufacturers, greatly reducing interoperability challenges that have resulted from separate developments. The U.S. Army is beginning procurement of Ground Vehicular radio systems built to the JTRS architecture to provide improved mobile communications support to computer-based command and control systems.</p> <p>These radios will also support Marine Corps requirements for high-capacity, dynamic, mobile, networked communications 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 AAV will increase its C4I capability and eliminate the cost of retrofitting the AAV 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.</p> <p>(U) E. MAJOR PERFORMERS:</p> <p>FY04 TSCT (LMST) HARRIS COMM SYS, MELBOURNE, FL K-BAND INTERGRATION , OCT03.</p> <p>FY03 JTRS: TBD PROGRAM SUPPORT, OCT 02.</p> <p>FY04 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>FY05 JTRS: BOEING, ANAHEIM, CA ,MAJOR H/W SUB, HARRIS, ROCHESTER, NY ,BAE, WAYNE NJ. MAJ S/W SUB TRW SEATTLE, WA, OCT 05.</p>		

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication Systems					C2275 Radio Systems						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LMST Ka-band Integration	FFP	Harris Corp, Florida						0.560	10/03			Continuing	Continuing	
JTRS EMD Radio Manufacturing	CPAF	TBD	0.000	0.000		0.000		3.768	06/02	4.834	10/04	Continuing	Continuing	
Subtotal Product Development			0.000	0.000		0.000		4.328		4.834		Continuing	Continuing	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LMST Program travel	Allot	MARCORSYSCOM						0.025	10/03			0.000	0.025	
LMST Technical support	FFP	NGIT, Stafford, VA						0.075	10/03			0.000	0.075	
JTRS Integration/Migration	TBD	TBD				0.237	12/03	1.105	12/03	1.100	10/04	Continuing	Continuing	
JTRS Tech & Eng Support	TBD	TBD						0.830	10/03	0.844	10/04	Continuing	Continuing	
Subtotal Support			0.000	0.000		0.237		2.035		1.944		Continuing	Continuing	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LMST Integration tests	WR	MCTSSA						0.080	07/03			0.000	0.080	0.080
JTRS Gnd Veh EOA/DT/OT	WR	MCOTEA						0.100	12/03	0.100	10/04	Continuing	Continuing	
JTRS Gnd Veh EOA/DT/OT	MIPR	PM TRCS, CECOM						1.420	12/03	1.013	10/04	Continuing	Continuing	5.750
LMST DISA on-orbit tests	MIPR	DISA						0.070	05/03					
Subtotal T&E			0.000	0.000		0.000		1.670		1.113		0.000	2.783	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTRS Program Support	TBD	TBD				0.347	10/02	0.523	12/03	0.563	10/04	Continuing	Continuing	
JTRS Contract Adv & Assist	TBD	TBD						0.325	12/03	0.244	10/04	Continuing	Continuing	
Subtotal Management			0.000	0.000		0.347		0.848		0.807		0.000	2.002	
Remarks:														
Total Cost				0.000		0.584		8.881		8.698		Continuing	Continuing	

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Exhibit 4/4a, Schedule Profile/Detail

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N /BA 7 Operational Sys Dev

PROGRAM ELEMENT
0206313M Marine Corps Communication Systems

PROJECT NUMBER AND NAME
C2275 Radio Systems

JOINT TACTICAL RADIO SYSTEM (JTRS)

FISCAL YEARS	FY02	FY03	FY04	FY05	FY06	FY07	FY08
BLOCK 1 (Interim)							
MANPACK HFMR			240	695	65		
HANDHELD THHR			620	1283	597		
TEAMS			74	166	56		
Milestone		▲ MS 'C'					
BLOCK 2 (JTRS Cluster 1 Vehicular)			EMD		LRIP	FRP	FRP
Milestones	▲ MS 'B'		10		83	340	290
Contract Award	▲				MS 'C'▲		
Operation Capability							▲ IOC
BLOCK 3 (JTRS Cluster 2 Manpack/Handheld)					EMD	LRIP	LRIP
Milestones				▲ MS 'B'		▲ MS 'C'	
Contract Award				▲			
Operation Capability							

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.000	0.584	8.071	8.698	4.115	3.749	1.573	1.633	Continuing	Continuing
(U) PMC BLI# 464300 JTRS	0.000	0.000	13.919	33.084	32.499	90.903	80.657	73.196	Continuing	Continuing

R-1 SHOPPING LIST - Item No. 187

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Exhibit R-4/4a, Schedule Profile/Detail

(Exhibit R-4/4a, page 77 of 147)

UNCLASSIFIED

Exhibit 4/4a, Schedule Profile/Detail DATE: February 2003

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N /BA 7 Operational Sys Dev
 PROGRAM ELEMENT: 0206313M Marine Corps Communication Systems
 PROJECT NUMBER AND NAME: C2275 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					▬	▬	▬				
IOC					◆						
FOC							◆				

<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N	0.000	0.000	0.810	0.000	0.000	0.000	0.555	0.743	0.000	2.108
(U) PMC BLI# 463300 Radio Systems	0.000	4.944	0.000	5.250	0.290	0.090	0.000	0.000	0.000	10.574

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2276 Communications Switching & Control Systems

COST (\$ in Millions)	FY 2002				FY 2003				Cost To Complete	Total Program
	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		
Project Cost	1.427	4.513	6.381	3.815	4.675	3.921	4.042	3.428	Continuing	Continuing
RDT&E Articles Qty										

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

(U) The Joint Network Management System (JNMS) is a Combatant Commander, Joint Task Force (CJTF) communications planning and management system. It provides communication planners with the capabilities to conduct high level planning; detailed planning and engineering; monitoring; control and reconfiguration; spectrum planning and management; and security of systems and networks supporting joint operations. The Combatant Commander, CJTF, Joint Communications Control Center (JCCC), and Service component headquarters, System control (SYSCON), will use JNMS to create, modify and manage standardized and automated communications plan (e.g., Annex K).

(U) The Transition Switch Module (TSM) 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.

(U) The Tactical Data Network (TDN) augments the existing 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.

(U) The Digital Technical Control (DTC) facilitates the installation, operation, resoration, and management of individual circuits and digital links consisting of many multiplexed circuits. It provides the primary interface between subscriber systems/networks within a local area and long-haul multichannel transmission systems to transport voice, message, data, and imagery traffic. It can add, drop and insert digital circuits into multiplexed groups. provide a source of stable timing to connected equipment, condition circuits, and perform analog/digital, 2-wire/4-wire, and signalling conversions. It contains the monitoring, testing, and patching equipment required by a technical controller to troubleshoot and restore faulty circuits and links.

(U) Target Location Designation and Hand-Off System (TLDHS) - 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 Lightweight Laser Designator Rangefinder (LLDR) and the Target Hand-off System (THS).

(U) The First In Command and Control System (FICCS) 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.

U. DMS is an OSD-mandated program to integrate Automatic Digital Network (AUTODIN) and E-Mail into a single, secure, DoD message communications system. DMS will expand writer-to-reader connectivity, support, and message security services. Organizations and individuals will be able to create, edit, send, receive, read, and process organizational and individual messages, secured with end-to-end protection, direct from desktop terminals/personal computers in their workspaces.

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EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2003

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 C2276 Communications Switching & Control Systems
--------------------------------------------------------------------------------	-----------------------------------------------------------------------------	----------------------------------------------------------------------------------------

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.739	0.944	0.000	0.000
RDT&E Articles Qty				
JNMS: Development, testing, and IOT&E of JNMS hardware suites and upgrade SPEED for DII COE LVL 6 compliance.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.249	1.024
RDT&E Articles Qty				
JNMS: JNMS MS III/C. Develop USMC unique modules for JNMS applicationa, and SPEED enhancements for JNMS, IOW, and EPLRS.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	3.569	0.000	0.000
RDT&E Articles Qty				
TSM: Development and testing of Engineering Development Models (EDM).				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.982	1.654
RDT&E Articles Qty				
TSM: Development of cellular telephone and Voice over IP (VoIP) capability for integration into TSM EDMs and test for interoperability/operational suitability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.435	0.000	0.000	0.000
RDT&E Articles Qty				
DMS: Development and testing of Engineering integration testing				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.085	0.000	0.000	0.000
RDT&E Articles Qty				
DTC: Development and testing of Engineering Development integration testing				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.168	0.000	0.000	0.000
RDT&E Articles Qty				
TLDHS: Development and testing of Engineering Development integration testing				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	4.150	0.000
RDT&E Articles Qty				
FICCS: Develop and test the integration of Gigabite Ethernet, and Wireless Telephone technologies into the FICCS platform.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	1.137
RDT&E Articles Qty				
FICCS: Pursue miniaturization of hardware solutions, collaborate with MCTSSA SIE and conduct Interoperability Testing at JITC.				
(U) Total \$	0.000	1.427	4.513	6.381

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2276 Communications Switching & Control Systems

(U) PROJECT CHANGE SUMMARY:

	FY2002	FY2003	FY 2004	FY 2005
(U) FY 2003 President's Budget:	0.969	4.766	0.602	0.603
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions		-0.253	-0.141	-0.180
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings	0.502		5.920	3.392
(U) SBIR/STTR Transfer	-0.025			
(U) Minor Affordability Adjustment	-0.019			
(U) FY 2004 President's Budget:	1.427	4.513	6.381	3.815

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. & Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U)PMC BLI 463400 Communications Switching and Control Systems										
JNMS	0.000	0.000	5.845	5.290	1.297	1.050	0.650		0.000	14.132
BLACKJACK DIGITAL FAX	0.985	0.000	0.000	0.000	0.000	0.000			0.000	0.985
TDN	0.399	2.110	2.354	1.125	5.587	57.065	34.679	0.150	0.000	68.79
FICCS	0.000	0.000	9.611	11.323	17.142	1.884	0.768	0.853	0.000	41.581
DMS	0.000	3.938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.938
DSID	2.793	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.793
JECCS	0.000	19.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.536
(U)PMC BLI 468800 Transition Switch Module	0.000	0.000	23.072	40.122	57.122	52.993	4.800	2.951	0.000	Cont
(U)PMC BLI 473300 TLDHS	3.584	34.134	28.444	0.000	0.000	0.000	0.000	0.000	0.000	66.162

(U) Related RDT&E: Not Applicable.

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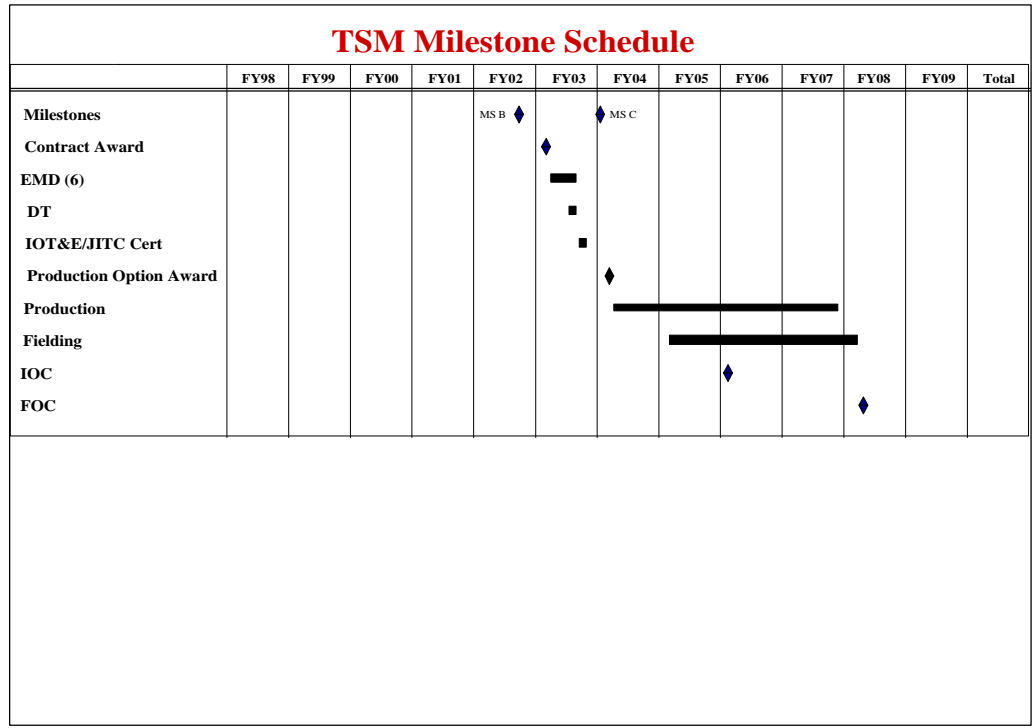
EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems
<p>(U) D. ACQUISITION STRATEGY DMS: DMS is a Joint ACAT1AM program. It is ASD (C3I) - mandated. Each year Joint Inter Operability Testing Center (JTIC) runs on Operational Test assessment on DMS software version, maintenance releases. The fund support Marine Corps Operations Test Activity (OTA). Marine Corps participation is vital to ensuring the Marine Corps implementation of DMS is interoperable with all DOD CINCs/Services/Agencies.</p> <p>(U) D. ACQUISITION STRATEGY JNMS: The JNMS acquisition strategy awards two concurrent contracts to one offeror. The first contract is a CPFF contract for the development of the JNMS software baseline. The second contract is a follow-on FFP contract for JNMS software suites with a T&M option for production and fielding support. The contracts were awarded using a best value, full and open competition source selection process that stresses the use of COTS. If COTS is not available, then Government-off-the-Shelf (GOTS) products will be the next strategy emphasized. A performance specification is used as the technical basis for the JNMS.</p> <p>(U) D. ACQUISITION STRATEGY TSM: The TSM acquisition strategy calls for use of FY03 R&D to develop and demonstrate a system of sufficient maturity for production (Milestone C). There will be a single contract award for LRIP, testing and full-rate production after successful completion of test. FY04 and FY05 R&D will be used to develop potential cellular telephone and Voice over IP (VoIP) technology for insertion into the TSM EDMs. They will then be tested prior to incorporating them into the TSM production systems.</p> <p>(U) D. ACQUISITION STRATEGY FICCS: 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-03, with over \$1M of proposed ONR S&T and \$80K ELB ACTD (Wireless) efforts, FICCS Block II will consist of six (6) JECCS production units and nine (9) Operational Shelters, which will include upgrades to emerging hardware/software. Exploring the Block II/III R&D effort, FICCS Block III will achieve the current AAO of fourteen (14) FICCS systems with the production of five (5) JECCS units and five (5) Operational Shelters.</p> <p>(U) E. Major Performers: FY02 - (DMS) NAWC FALLBROOK CRANE IN .TEST PROGRAM MANAGEMENT SUPPORT , AUG02 FY02 - (JNMS) Northrop Grumman Information Technology (NGIT), Winterpark, FL. SPEED enhancements for JNMS, AUG02 FY03 - (JNMS) NGIT, Winterpark, FL. SPEED enhancements; MCOTEA, Quantico, VA. Fleet IOT&E support, JAN 03. FY04 - (JNMS) NGIT, Winterpark, FL. SPEED enhancements; CECOM, Momouth, NJ. USMC JNMS adapters, JAN 04 FY05 - (JNMS) NGIT, Winterpark, FL. SPEED enhancements; CECOM, Momouth, NJ. USMC JNMS adapters, JAN 05 FY03/04 - (TSM) TBD, Prime Contractor, TSM prototype design/build/test, OCT 02 FY 04/05 - (TSM) TBD, Prime Contractor, Integration and test of VoIP and Wireless technology FY04 - (FICCS) Darlington, Inc., Wando, SC. Integration and test of Gigabit Ethernet and Wireless Telephone technology, OCT 04 FY05 - (FICCS) Darlington, Inc., Wando, SC. Hardware miniaturization and colaboration/testing with MCTSSA SIE & JITC, OCT 05</p>		

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Exhibit R-3 Cost Analysis							DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JNMS Development	CPFF	CECOM, Monmouth, NJ	0.000	0.000		0.184	01/03	0.199	01/04	0.154	01/05	Cont.	Cont.	
JNMS SPEED	FFP	NGIT Winterpark, FL	0.000	0.500	08/02	0.246	01/03	0.450	01/04	0.460	01/05	Cont.	Cont.	
JNMS MCHS	FFP	MCSC, Quantico, VA	0.000	0.050	08/02									
FICCS	CPFF	TBD	0.000	0.000		0.000		3.450	10/03	0.637	10/04	Cont.	Cont.	
TSM	FFP	TBD	0.000	0.000		1.825	10/02	0.554	10/03	0.694	10/04	Cont.	Cont.	
Subtotal Product Dev			0.000	0.550		2.255		4.653		1.945		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JNMS PO Support	WR	MCSC, Quantico, VA/MCTSSA	0.000	0.064	05/02	0.100	01/03	0.100	01/04	0.090	01/05	Cont.	Cont.	
JNMS Support Contractor	FFP	NGIT, Aquia, VA	0.000	0.125	01/02	0.230	01/03	0.300	01/04	0.320	01/05	Cont.	Cont.	
FICCS	CPFF	Support Contractor	0.000	0.000		0.000		0.500	10/03	0.300	10/04	Cont.	Cont.	
TSM	FFP	NGIT, Aquia, VA	0.000	0.000		0.794	10/02	0.304	10/03	0.285	10/04	Cont.	Cont.	
DMS	WR	NAWC FALLBROOK	0.000	0.237	01/02	0.000								
Subtotal Support			0.000	0.426		1.124		1.204		0.995		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JNMS	WR	MCOTEA/FMF	0.000	0.000		0.184	01/03	0.200	12/03	0.000		Cont.	Cont.	
FICCS	WR	MCOTEA	0.000	0.000		0.000		0.200	10/03	0.200	10/04	Cont.	Cont.	
TSM	CPFF	TBD	0.000	0.000		0.950	10/02	0.000		0.450	12/04	Cont.	Cont.	
TSM	WR	MCOTEA	0.000	0.000		0.000		0.124	10/03	0.225	10/04	Cont.	Cont.	
TDN	WR	MCOTEA	0.000	0.085	01/02									
TLDHS	WR	MCOTEA	0.000	0.168	01/02									
DMS	WR	MCOTEA		0.198	01/02									
Subtotal T&E			0.000	0.451		1.134		0.524		0.875		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Total Cost			0.000	1.427		4.513		6.381		3.815		Cont.	Cont.	

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CLASSIFICATION:		DATE:	
Exhibit R-4/4a Schedule Profile/Detail		February 2003	
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	



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N	0.000	3.569	0.982	1.654	1.675	1.143	0.906	0.921	0.000	10.85
(U) PMC BLI# 468800 Transition Switch Module (TSM)	0.000	0.000	23.072	40.122	57.122	52.993	4.800	2.951	Continuing	Continuing

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CLASSIFICATION:

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206313M Marine Corps Communications Sys	PROJECT NUMBER AND NAME C2276 Communications Switching & Control Systems

Task Name	JNMS																																						
	99				00				01				02				03				04				05				06				07				08		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3				
JROC Approval							▲																																
Milestone I/II							▲																																
RFP Release							▲																																
Joint Service Contract Award											▲																												
FQT Threshold																▲																							
IOT&E																				▲																			
Milestone III Approval																																							
Marine Corps Fielding																																							

Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDTE&E,N	0.739	0.944	1.249	1.024	0.845	0.822	0.649	0.030	Continuing	Continuing
(U) PMC BLI# 463400 CommSwitch& Ctl Sys (JNMS)	0.000	0.000	5.845	5.290	1.297	1.050	0.650	0	0.000	14.132

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems					C2277 Systems Engineering & Integration				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	11.772	10.736	8.907	7.991	9.597	8.768	9.043	9.204	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>(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.</p> <ol style="list-style-type: none"> The Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, Coordination. (MAGTF C4I SEI&C) subproject is a non-acquisition effort which provides centralized planning and execution of MAGTF C4I Systems; it develops, certifies and manages the configuration of the MAGTF C4I Systems/Technical Architecture and its implementation; it is also used to develop and test common hardware and software for use in MAGTF C4I Systems; MAGTF C4I SE&I also funds USMC participation in joint planning, technical standards development and joint exercise participation Global Broadcast Service (GBS) Terminal – The overall GBS is a satellite system composed of a space segment, a transmit suite and a Receive Suite. It provides near worldwide high data rate dissemination of large information products such as classified and unclassified intelligence and video, theater message traffic, joint and service-unique news, weather and MWR programming to deployed or garrison forces via small user platforms. MAGTF C4I SEI&C Joint Distributed Engineering Plant (JDEP) is a DoD mandated program to evaluate the interoperability of the Family of Systems (FoS) C4ISR configurations that support joint forces, evaluate the interoperability of new acquisition systems, and provide an environment for engineering analysis to correct systems deficiencies and develop new capabilities. Joint Warrior Interoperability Demos (JWID) is a JCS-mandated program to demonstrate new C4I interoperability concepts for the warrior. JWID offers the opportunity for demonstrations of evolving technologies in interoperability, information dissemination, fusing and digital communications. The Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)-mandated program for joint development, implementation, and testing of data links under the direction of the Joint Interoperability Engineering Organization (JIEO). Common Computer Resources (CCR) Marine Common Hardware Suite (MCHS) mission – Central and standardized management and acquisition of all Tactical common computer hardware and infrastructure adopting the Joint Defense Information Infrastructure (DII) Common Operating Environment (COE) with consolidated Integrated Logistics Support. Ensure the environment remains in synchronization with computer hardware technology hardware improvements. The mission supports the Commandant's Planning Guidance and input to the Marine Corps Master Plan. This program has moved to Project C2510 within this Program Element (PE) in FY04 and beyond. Ballon Upgrade - The Marine Corps Stationary Lighter Than Air Platform (MCSLAP) program provides for the Marine Corps' only expeditionary capability to rapidly extend voice and data communications beyond line of sight. Small and medium tactical aerostat exist today in commercial off-the-shelf configurations that require minimal adaptation to meet basic USMC operational requirements. A lightweight, durable, stationary liftable platform is designed for extending Marine Air Ground Task Force (MAGTF) Command, Control, Communications, Computers, and Intelligence (C4I) communications range capabilities. 										
(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.453	1.067	1.207	1.197						
RDT&E Articles Qty										
<p>JWID: Participation in JWID, a JCS mandated program, to demonstrate new C4I interoperability concepts. It also supports management and planning of future JWID exercises.</p>										

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems		C2277 Systems Engineering & Integration	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.546	1.695	1.740	1.784
RDT&E Articles Qty				
JINTACCS: Participation in JINTACCS, a JCS-mandated program aimed at ensuring interoperability of tactical systems. Analysis Engineering and technical support in developing joint standards. Interoperability testing/certification in support of C4I systems. Technical support in various joint programs and ACTD's.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	5.000	4.297	4.312	3.392
RDT&E Articles Qty				
MAGTF SEI&C: 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 C4I system integration. Analysis, studies and reviews in the development and implementation of the COE migration strategy. Analyze the movement of MAGTF C4I systems to joint standards to mandated levels and provide technical recommendations to correct deficiencies. Engineering support to D-30 Amphib Ready Group (ARG) preparation process.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.742	0.830	1.648	1.618
RDT&E Articles Qty				
MAGTF SEI&C (JDEP): DoD mandated program to evaluate the interoperability of the Family of Systems (FoS) C4ISR configurations that support joint forces, evaluate the interoperability of new acquisition systems, and provide an environment for engineering analysis to correct systems deficiencies and develop new capabilities.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.082	1.400		
RDT&E Articles Qty				
Balloon Upgrade: Active testing and utilization of Aerostat Ballon to test concepts for USMC connectivity to USN Battle Groups.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.581			
RDT&E Articles Qty				
GBS: Support and Management for Confidence/User Evaluation.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.241			
RDT&E Articles Qty				
GBS: Operational Testing and Integration Testing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.127	1.447		
RDT&E Articles Qty				
CCR MCHS: Research, evaluation, test and selection of computer hardware products for the Marine Corps Common Hardware Suite (MCHS). Development of MCHS system specifications and baselines; research and analyze computer technologies and hardware; conduct performance, compatibility and environmental testing; support commercial product selection and application in support of Tactical Systems.				
(U) Total \$	0.000	11.772	10.736	8.907
				7.991

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems			PROJECT NUMBER AND NAME C2277 Systems Engineering & Integration				
(U) PROJECT CHANGE SUMMARY:									
	FY2002	FY2003	FY2004	FY2005					
(U) FY 2003 President's Budget:	13.244	9.912	11.810	11.011					
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reductions		-0.576	0.094	-0.177					
(U) Congressional Rescissions									
(U) Congressional Increases		1.400							
(U) Reprogrammings	-1.031		-2.997	-2.843					
(U) SBIR/STTR Transfer	-0.253								
(U) Minor Affordability Adjustment	-0.188								
(U) FY 2004 President's Budget:	11.772	10.736	8.907	7.991					
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. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009 To Compl</u>	<u>Total Cost</u>
PMC BLI 463000 CCR	27.410	38.168	61.514	71.743	86.339	105.161	101.188	105.989	Cont
PMC BLI 463300 RADIO SYSTEMS	37.011	27.939	10.633	24.462	9.393	10.711	26.815	10.316	Cont
(U) Related RDT&E:									
(U) PE 0604817A									
(U) PE 0206623M, Marine Corps Ground Combat/Supporting Arms Systems									
(U) D. ACQUISITION STRATEGY JWID, JINTACCS MAGTF SE&IC, GBS, AND CCR: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.									
CCR - T&E - NSWC/CD will procure Computer Hardware as noted under selected MCHS and non-MCHS systems for battery and environmental testing. NSWC/CD shall provide written test results showing the facts determined in the battery and environmental testing.									
(U) E. Major Performers: FY02-FY05 Northrup Grumman, Stafford VA - Level of effort contract for program management, engineering, analytical, acquisition and logistics support for C4I programs in the areas of systems architectures, configuration management, interoperability and integration.									

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CLASSIFICATION:				DATE: February 2003										
Exhibit R-3 Cost Analysis			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
APPROPRIATION/BUDGET ACTIVITY			0206313M Marine Corps Communication Systems			C2277 Systems Engineering & Integration								
RDT&E, N /BA 7 Operational Sys Dev														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JWID	MPR	JPO Ft Monmouth NJ	0.747	0.630	10/01	0.640	12/02	0.640	12/03	0.680	12/04	Cont.	Cont.	
JWID	WR	NSWC Dahlgren, VA	0.000	0.300	05/02							0.000	0.300	0.300
JWID	WR	MCSC Quantico, VA	0.000	0.073	10/01	0.021	10/02	0.022	10/03	0.029	10/04	Cont.	Cont.	
GBS	WR	MCSC Quantico, VA	0.066	0.046	10/01							0.000	0.112	0.146
BALLOON UPGRADE	TBD	TBD		1.082	11/01	1.400	04/03							
Subtotal Product Dev			0.813	2.131		2.061		0.662		0.709		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JWID	C/FFP	NGIT, Stafford VA	0.726	0.450	10/01	0.406	10/02	0.545	10/03	0.488	10/04	Cont.	Cont.	
MAGTF SEI&C	MIPR	CECOM Ft Monmouth NJ	0.580	0.085	12/01							Cont.	Cont.	
MAGTF SEI&C	C/FFP	NGIT, Stafford VA		0.610	10/02	0.857	10/02	1.251	10/03	1.033	10/04			
MAGTF SEI&C	WR	MCSC, Quantico, VA	0.408	0.100	10/01	0.110	10/02	0.144	10/03	0.123	10/04	Cont.	Cont.	
MAGTF SEI&C	C/FFP	OSEC Stafford VA	0.000	0.252	10/01	0.370	11/02	0.485	11/03	0.416	11/04	Cont.	Cont.	
MAGTF SEI&C	WR	NSWC Crane IN	0.108	0.120	11/01	0.000						0.000	0.228	0.322
MAGTF SEI&C	RCP	MCSC, Quantico, VA	0.000	0.858	09/02							0.000	0.858	0.858
MAGTF SEI&C (JDEP)	WR	NSWC Dahlgren, VA	0.000	0.068	01/02	0.083	01/03	0.120	01/04	0.132	01/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	T&M	SENSIS Syracuse NY	0.000	0.547	05/02	0.494	05/03	1.164	05/04	1.089	05/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	MPR	DISA	0.000	0.007	02/02	0.010	02/03	0.010	02/04	0.012	02/05	Cont.	Cont.	
MAGTF SEI&C (JDEP)	WR	MCTSSA, Cp Pndltn, CA	0.000	0.120	04/02	0.243	04/03	0.354	04/04	0.385	04/05	Cont.	Cont.	
MAGTF SEI&C (INIT)	C/FFP	NGIT, Stafford VA	0.000	1.168	12/01	0.000						0.000	1.168	1.495
MAGTF SEI&C (INIT)	C/FFP	Raytheon, Fullerton, CA	0.000	0.350	12/01	0.000						0.000	0.350	0.655
GBS	C/FFP	NGIT, Stafford VA	0.495	0.354	02/02	0.000						0.000	0.849	0.849
GBS	C/FFP	Booz Allen	0.000	0.050	03/02	0.000						0.000	0.050	0.050
GBS	WR	MCSC, Quantico, VA	0.000	0.116	10/01	0.000						0.000	0.116	0.116
GBS	WR	I/II/III MEF	0.040	0.016	02/02	0.000						0.000	0.056	0.056
CCR	Various	Various	0.000	0.395	11/01	0.200	12/02					Cont.	Cont.	
CCR	MPR	GSA	0.000	0.802	03/02	0.711	03/02					Cont.	Cont.	
CCR	WR	NSWC Crane IN	0.000	0.200	06/02	0.200	06/02					Cont.	Cont.	
CCR	RCP	MCSC, Quantico, VA	0.000	0.037	03/02	0.037	03/02					Cont.	Cont.	
ONR TAXES			0.128											
Subtotal Support			2.485	6.705		3.721		4.073		3.678				
Remarks:														

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Exhibit R-3 Cost Analysis					DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME									
RDT&E, N /BA 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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MAGTF SEI&C	C/FFP	NGIT, Stafford VA	9.327										Cont.	Cont.
MAGTF SEI&C	TBD	TBD				2.780	10/02	2.196	10/03	1.618	10/04		Cont.	Cont.
JINTACCS	C/FFP	NGIT, Stafford VA	4.062	1.446	10/01								Cont.	Cont.
JINTACCS	TBD	TBD				1.495	10/02	1.535	10/03	1.576	10/04		Cont.	Cont.
JINTACCS	WR	MCTSSA, Cp Pndltm, CA	0.264	0.100	10/01	0.200	10/02	0.205	10/03	0.208	10/04		Cont.	Cont.
GBS	WR	MCTSSA, Cp Pndltm, CA	0.200	0.241	02/02	0.000							0.000	0.441 0.440
CCR	RCP	MCSC, Quantico, VA	1.086	0.979	02/02	0.299	02/03						Cont.	Cont.
Subtotal T&E			14.939	2.766		4.774		3.936		3.402			Cont.	Cont.
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MAGTF SEI&C	C/FFP	NGIT, Stafford VA	0.310	0.170	11/01								Cont.	Cont.
MAGTF SEI&C	TBD	TBD				0.180	10/02	0.236	10/03	0.202	10/04		Cont.	Cont.
Subtotal Management			0.310	0.170		0.180		0.236		0.202			Cont.	Cont.
Remarks:														
Total Cost				11.772		10.736		8.907		7.991			Cont.	Cont.

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
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 C2278 Air Defense Weapons Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	11.156	28.274	23.428	9.596	6.469	11.127	10.577	5.827	Cont	Cont
RDT&E Articles Qty										

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

(U) This project encompasses two sub-element programs which are part of the Integrated Air Defense System for the Marine Corps.

1. Combat ID (CID) will provide rapid and accurate determination of friends, foes, or neutral identities of all potential targets within a combatant's area of responsibility in time to take decisive action. It will enable fighting forces: to manage and control battlespace; optimally employ weapons and forces to increase the economy of force; lower combat attrition, and increase enemy losses while reducing fratricide. CID must be viewed as a capability which will be satisfied by fielding a Family of Systems (FoS). Beginning in FY-04 the USMC will focus on providing a Mounted Cooperative Target Identification System (MCTIS) for direct fire and combat support vehicles. This system will specifically provide the capability for Mounted Weapon Systems to accurately identify friendly platforms on the battlefield which will improve combat effectiveness and reduce fratricide. This program will transition to MCTIS in FY04.
2. The Complementary Low Altitude Weapons System (CLAWS) is a mobile ground based air defense missile system designed to defeat threat cruise missiles unmanned aerial vehicles, and aircraft. CLAWS takes advantage of government furnished equipment (GFE) and non-developmental items (NDI) and technology by integrating current inventory DoD missiles with existing High Mobility Multi-purpose Wheeled Vehicles (HMMWV). 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 shall complement existing Short Range Air Defense (SHORAD) capabilities and shall interface with current and proposed Marine Air Command and Control System sensors and data paths.
3. The Continuous Wave Acquisition Radar (CWAR) will investigate, integrate, and test safety and diminishing source issues related to CWAR specifically with the intention of increasing the fleet's system maintainability and reliability. This effort includes all necessary prototyping, initial tooling and associated test equipment to prepare for production efforts. This line will also support all program requirements studies related to investigating future CWAR requirements. This program will transition to Short/Medium Range Air Defense Radar. Funding for the Short/Medium Range Air Defense Radar has moved to Project C3099 within this PE in FY04 and beyond.
4. The Composite Tracking Network, formerly know as Cooperative Engagement Capability (CEC), enables all CTN-equipped, Anti-Air Warfare (AAW) weapons systems in a battle force to operate as a single, distributed AAW weapon system. This is accomplished providing timely sharing of fire control quality sensor data, correlated identification data, and AAW weapons management status. The sensor networking capability of CTN essentially allows forces to have a direct connection to the various sensors supported by forces throughout a battlefield enabling the development of a common understanding of the air situation. CTN consists of common processing units that interface with local and remote sensor data in order to develop a common track database and data communications pieces that enable the connectivity and networking of the sensors and processors. Funding for this program has moved to Project C2273 within this PE in FY04 and beyond.
5. The Low Altitude Air Defense (LAAD) Sustainment initiative is an umbrella program that consists of Man Portable Air Defense System (MANPADS), Ground Support Equipment, Ground Based Aerial Targets, trainers and simulators, Stinger Missiles/modifications, and weapons cueing and situational awareness systems that provide air defense of vital areas in general or direct support of the Marine Air Ground Task Force (MAGTF).
6. The Multi-Role Radar System (MRRS) will provide lightweight, expeditionary, three-dimensional radar capable of detecting Cruise Missiles (CMs), fixed and rotary winged aircraft, Unmanned Aerial Vehicles (UAVs) and an enhanced Combat Identification (CID) capability. The system will augment the AN/TPS-59(V)3 sensor coverage and will be integrated into the Navy's Cooperative Engagement Capability (CEC) and the Marine Corps Composite Tracking Network (CTN). Additionally, the system shall provide Air Traffic Control (ATC) with a real time display of all air activity within the assigned area of responsibility and will support the situational awareness and cueing for Stinger, Avenger, and CLAWS. Funding for this program has moved to Project C3099 within this PE in FY04 and beyond.
7. Pedestal Mounted Stinger (PMS) or "Avenger" is a turreted, lightweight, highly mobile gun/missile hybrid mounted on a heavy HMMWV. The system delivers eight ready to fire Stinger missiles and 285 rounds of .50 caliber ammunition in a single upload. An upgraded Land Navigation System assists the slew-to-cue capability and the Forward Looking Infra Red Device provides a day/night and reduced visibility capability.
8. 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. As part of this effort, AN/TPS-63 modifications and system improvements will be researched and analyzed which complement existing components to preclude an expensive USMC investment in solid-state radar technology. Funding for this project has moved to Project C3099 in FY04 and beyond.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2278 Air Defense Weapons Systems

9. Mounted Cooperative Target ID System (MCTIS) - 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 AAVs, LAVs, and M1A1s; and transponder-only system for combat support and combat service support vehicles. When fielded, mounted weapon systems will have the capability to identify targets as friendly or unknown, at ranges to 6 km, before engaging them. They and all other designated vehicles will also possess the capability to rapidly identify themselves as friendly to weapon systems equipped with comparable systems prior to being engaged. As a result, incidents of fratricide and collateral damage will decline, while the range at which targets may be engaged without fear of misidentification will increase dramatically. The system will be interoperable with Joint, Allied, and coalition forces' cooperative target identification systems.

(U) B. ACCOMPLISHMENTS/ PLANNED PROGRAM:

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.121	0.269	0.000	0.000
RDT&E Articles Qty				

CWAR: Developmental test and evaluation.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.124	0.000	0.000	0.000
RDT&E Articles Qty				

CWAR: Development of Engineer Design Model.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.025	0.000	0.000	0.000
RDT&E Articles Qty				

CWAR: Program management support.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.215	0.614	0.000	0.000
RDT&E Articles Qty				

CID: Program management support.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.100	0.435	0.000	0.000
RDT&E Articles Qty				

CID: Requirements development.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.285	0.413	0.000	0.000
RDT&E Articles Qty				

CID: Engineering analysis of CID systems in coordination with the Coalition CID ACTD program.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.139	0.137	0.000	0.000
RDT&E Articles Qty				

SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Developmental test and evaluation/risk reduction.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.100	0.150	0.000	0.000
RDT&E Articles Qty				

SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Development of Engineer Design Model.

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys			C2278 Air Defense Weapons Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.110	0.110	0.000	0.000	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Program management support. Funding for this program has moved to C3099 within this PE for FY04 and beyond.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.993	1.837	0.000	0.000	
RDT&E Articles Qty					
CTN: Software development: IDD development for CAC2S and CLAWS interface to CTN.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.622	8.417	0.000	0.000	
RDT&E Articles Qty					
CTN: Development of Engineer Design Model.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.648	0.919	0.000	0.000	
RDT&E Articles Qty					
CTN: Testing and Evaluation: Developmental testing support. Certification of CAC2S and CLAWS interfaces to CTN.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.240	0.527	0.000	0.000	
RDT&E Articles Qty					
CTN: Program management support. Funding for this program has been moved to Project C2273 within this PE for FY 04 and beyond.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	4.591	2.000	6.776	0.000	
RDT&E Articles Qty					
CLAWS: Development, design, test and integration issues related to the four Production Representative Vehicles. Perform Key Performance Parameter (KPP).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.202	1.445	2.525	1.275	
RDT&E Articles Qty					
CLAWS: Operational System Support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	4.945	0.000	0.000	
RDT&E Articles Qty					
CLAWS: Developmental Testing (DT).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	7.065	1.945	
RDT&E Articles Qty					
CLAWS: Operational Testing (OT).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.641	2.000	2.700	1.912	
RDT&E Articles Qty					
CLAWS: Program management support.					

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys			C2278 Air Defense Weapons Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	2.367	0.000	0.000	
RDT&E Articles Qty					
MRRS: Refinement of the ORD, Campaign Level Effectiveness Analysis, Analysis of Alternatives and Life Cycle Cost Estimate.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.383	0.000	0.000	
RDT&E Articles Qty					
MRRS: Affordable Ground Base Radar					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	1.150	0.000	0.000	
RDT&E Articles Qty					
MRRS: Program management support. Funding for this program has been moved to C3099 within the same PE for FY04 and beyond.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.156	0.000	0.000	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Study to examine the feasibility for replacement of the current Remote Terminal Unit/Expeditionary Air Defense System (EADS) software with commercial alternatives.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.250	0.000	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Certification of the Reprogrammable Microprocessor Flare.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.587	0.000	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Replacement of the currently fielded Remote Terminal Unit (RTU) with a commercial alternative.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.091	0.000	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Modification of the Expeditionary Air Defense System software for use on commercial computer hardware.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	1.101	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Address obsolescence issues with Stinger Ground Support Equipment as indicated by Readiness Prediction Study.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.600	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Initiate integration of various MANPAD trainers into a single easily deployable unit.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.340	
RDT&E Articles Qty					
LAAD SUSTAINMENT: Address the obsolescence with the currently fielded Stinger Night Sight.					

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2278 Air Defense Weapons Systems		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.062	1.024	
RDT&E Articles Qty					
MCTIS: Program management support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.500	0.500	
RDT&E Articles Qty					
MCTIS: Test and evaluation as part of the coalition CID ACTD program.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.225	0.300	
RDT&E Articles Qty					
MCTIS: Engineer Design Model.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.150	0.150	
RDT&E Articles Qty					
MCTIS: Risk reduction.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.250	
RDT&E Articles Qty					
MCTIS: Support software development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.467	0.000	
RDT&E Articles Qty					
PEDESTAL MOUNTED STINGER: Test and evaluation/risk reduction of FLIR for Avenger.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.030	0.030	
RDT&E Articles Qty					
PEDESTAL MOUNTED STINGER: Engineering support for follow-on initiatives.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.169	
RDT&E Articles Qty					
PEDESTAL MOUNTED STINGER: Initiate developmental test and evaluation/risk reduction of Laser Range Finder and Slip Ring for Avenger. Initiate engineering and integration of Laser Range Finder and Slip Ring for Avenger.					
(U) Total \$	11.156	28.274	23.428	9.596	

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communications Sys		C2278 Air Defense Weapons Systems	
(U) PROJECT CHANGE SUMMARY:				
	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
(U) FY 2003 President's Budget:	11.135	29.831	36.146	16.968
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions	-0.030	-1.557	0.608	0.428
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings	0.301		-13.323	-7.801
(U) PDB 290				
(U) SBIR/STTR Transfer	-0.250			
(U) Minor Affordability Adjustment			-0.003	0.001
(U) FY 2004 President's Budget:	11.156	28.274	23.428	9.596
CHANGE SUMMARY EXPLANATION:				
(U) Funding: Changes in FY04 and FY05 are due to realignment of programs within the Marine Corps.				
(U) Schedule: Not Applicable				
(U) Technical: Not Applicable.				

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

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 C2278 Air Defense Weapons Systems
-------------------------------------------------------------------------------	------------------------------------------------------------------------------------	---------------------------------------------------------------------

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC LINE BLI 300600 LAAD SUS	0.000	0.181	1.996	10.449	12.221	14.779	6.135	13.620	Continuing	Continuing
(U) PMC LINE BLI 462000 CWAR (EADS)	0.414	1.166	0.000	0.000	0.000	0.000	0.000	0.000	0	1.58
(U) PMC LINE BLI 464000 CTN	0.000	0.000	0.000	8.270	22.537	34.901	43.970	68.590	Continuing	Continuing
(U) PMC LINE BLI 464000 MCTIS (CID)	0.000	0.000	0.000	0.000	0.000	0.000	0.500	15.300	Continuing	Continuing
(U) PMC LINE BLI 489000 CLAWS	0.000	0.000	0.000	17.993	26.727	28.188	19.728	3.609	Continuing	Continuing
(U) PMC LINE BLI 305000 CLAWS MISSILES	0.000	0.000	0.000	0.000	22.667	19.280	49.186	24.352	Continuing	Continuing
(U) PMC LINE BLI 464000 SH/MED RANGE AIR	0.000	0.977	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) PMC LINE BLI 464200 SH/MED RANGE AIR	0.000	0.000	1.581	1.425	0.523	0.432	0.439	0.444	Continuing	Continuing
(U) PMC LINE BLI 464200 MRRS	0.000	0.000	0.000	0.000	2.067	33.156	45.635	46.789	Continuing	Continuing
(U) PMC LINE BLI 301300 PMS	0.000	1.532	0.817	12.033	6.486	9.534	3.461	8.650	Continuing	Continuing

(U) Related RDT&E:

PE 0603216C (Ballistic Missile Defense Organization, Theater Missile Defense)

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-7 Operational Sys Dev

0206313M Marine Corps Communications Sys

C2278 Air Defense Weapons Systems

(U) D. ACQUISITION STRATEGY:

(U) CID: This effort will continue the management of the CID program as it transitions to MCTIS (Mounted Cooperative Target Identification System) in FY04. The program will leverage heavily from the Coalition CID ACTD program and will allow for engineering analysis of competing systems as the possible MCTIS solution.

(U) CLAWS: Competitively awarded fixed price contract for design and development. Additionally, there are firm fixed price production options through FY07.

(U) CWAR: This effort requires R&D funds to develop, procure, install and maintain modifications to keep the Marine Air Command and Control System radar's electronics, hardware, and software viable and safe; provide upkeep of the system. Efforts are underway with APM AD weapons to award an Engineering Services and procurement contract with Raytheon Corporation. The main focus for the contract will be for the procurement of the AN/MQP-62 Continuous Wave Acquisition Radar (CWAR), Built in Test Equipment (BITE) Diagnostics upgrade which replaces five major sub-assemblies resulting in a substantial reduction in obsolete components, an increase in system reliability and maintainability, as well as addressing any significant safety issues.

(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. The USMC CTN project will be utilizing existing and future USN CEC contracts.

(U) LAAD SUSTAINMENT: The LAAD Sustainment acquisition strategy is to fix, sustain, or replace LAAD systems experiencing readiness degradation due to obsolescence. Examples include the replacement of Remote Terminal Units, shelf life extensions to USMC Stinger Missiles, upgrading trainers to tactical configuration, upgrade present target configurations, and the replacement of Stinger Night sights. LAAD Sustainment will leverage Army interests in every available endeavor. Teaming with the Army will afford the USMC the best quantity of buy opportunities.

(U) MRRS: The MRRS will build off of the ONR Affordable Ground Based Radar Science and Technology program that will demonstrate advanced mobility combined with medium range and high resolution.

(U) PEDESTAL MOUNTED STINGER: This effort requires R&D funds to conduct interface testing of new equipment with USMC unique configuration to ensure requirements are maintained to keep the PMS viable, safe, and provide sustainment of the fielded weapon system. The USMC PMS project will utilize existing and future In-Service Engineering Activities.

(U) SHORT/MEDIUM RANGE AIR DEFENSE RADAR: This effort requires R&D funds to develop, procure, install, and maintain modifications to keep the Short/Medium Range Air Defense radar system's electronics and hardware viable, safe, and provide sustainment of the fielded system. Efforts are underway to award a sole source Engineering Services & procurement contract with the AN/TPS-63's Original Equipment Manufacturer, Northrop Grumman. The main focus for the contract will be for the development and procurement of replacement sub-assemblies currently identified as containing obsolete components, as well as those assemblies experiencing reliability, maintainability and safety related issues.

(U) MCTIS: Economy of scales dictate a strategy that highly leverages Joint/coalition evolutionary development efforts. The FY03 through 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. FY-04/05 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:

COMPOSITE TRACKING NETWORK:

FY03 NSWC, Crane, IN, Engineering services. Jan 03

CLAWS:

FY02 Raytheon, Sudbury, MA; Product development and developmental test. Dec 01

FY02 White Sands Missile Range, White Sands, NM; Developmental testing. Jun 02

FY02 Northrop Grumman, Stafford, VA; Program support. Oct 01

FY03 Raytheon, Tewksbury MA - Product development and developmental test - Jan 03

FY03 MCSC, Quantico VA - CEOSS Omnibus Contract program support - Jan 03

FY03 White Sands Missile Range White Sands NM - Developmental Test - Jan 03

FY04 Raytheon, Sudbury, MA; Product development and developmental test. Jan 04

FY04 White Sands Missile Range, White Sands, NM; Developmental testing. Jan 04

FY04 MCSC, Quantico VA, CEOSS Omnibus Contract; Program support - Jan 04

FY05 White Sands Missile Range, White Sands, NM; Developmental Test - Jan 05

FY05 MCSC, Quantico VA - CEOSS Omnibus Contract, Program support - Jan 05

UNCLASSIFIED

Exhibit R-3 Cost Analysis							DATE: February 2003							
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							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CWAR	RCP	Raytheon, Pelham NJ	0.000	0.124	01/02	0.000						Cont.	Cont.	
CWAR	MIPR	Redstone Arsenal, AL	0.000	0.000		0.269	01/03					0.000	0.137	0.137
S/M Range Air Defense Rdr	MIPR	Warner Robbins, GA	0.000	0.100	01/02	0.107	01/03					Cont.	Cont.	
CTN	RCP	Lockheed, Syracuse NY	0.482	0.217	12/01	0.706	01/03					Cont.	Cont.	
CTN	WR	NSWC, Dahlgren, VA	0.590	0.240	11/01	0.227	01/03					Cont.	Cont.	
CTN	WR	NSWC, Crane, IN	1.955	0.917	06/02	9.419	01/03					Cont.	Cont.	
CTN	RCP	Raytheon, St Ptrsbrg, FL	0.365	0.508	04/02	0.500	01/03					Cont.	Cont.	
CTN	WR	Solipsys, Laurel, MD	1.031	0.050	01/02	0.050	01/03					0.000	1.131	
CID	WR	NSWC, Crane, IN	0.000	0.285	02/02	0.000				0.000	0.251	01/05	Cont.	Cont.
CLAWS	RFP	Raytheon, Bedford, MA	5.500	4.109	12/01	2.000	01/03	6.776	01/04			0.000	18.385	
CLAWS	MIPR	Redstone Arsenal, AL	0.000	0.257	01/01							0.000	0.257	0.257
MRRS	RCP	Raytheon, Sudbury, MA	0.000	0.000		0.700	01/03					0.000	0.700	
LAAD SUSTAINMENT	RCP	NSWC, Crane, IN	0.000	0.000		0.156	01/03	1.525	01/04			0.000	1.681	
LAAD SUSTAINMENT	RCP	TBD	0.000	0.000		0.000		0.000		1.101	01/05	Cont.	Cont.	
PMS	RCP	NSWC, Crane, IN	0.000	0.000		0.000		0.407	01/04	0.089	01/05	Cont.	Cont.	
Subtotal Product Dev			9.923	6.807		14.134		8.708		1.441		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SH/Med Rng Air Def Radar	WR	NSWC, Crane, IN	0.000	0.090	08/02	0.060	01/03					Cont.	Cont.	
CWAR	WR	NSWC, Crane, IN	0.000	0.025	01/02	0.000						0.000	0.025	0.025
CID	RCP	MCSC, Quantico, VA	0.450	0.126	02/02	0.202	01/03	0.150	01/04	0.374	01/05	0.000	1.302	0.652
CID	WR	NSWC, Crane, IN	0.150	0.000		0.323	01/03	0.225	10/03	0.225	01/05	0.000	0.923	0.563
CID	RCP	GSA, Bremerton, WA	0.760	0.000		0.397	01/03					0.000	1.157	1.195
CTN	WR	MCLB Albany, GA	0.020	0.002	01/02	0.010	01/03					Cont.	Cont.	
CTN	MIPR	STA, FtWorth, TX	0.432	0.178	01/02	0.160	01/03					Cont.	Cont.	
CTN	WR	CG 1st MAW	0.014	0.004	03/02	0.010	01/03					0.000	0.028	0.010
CTN	WR	2ND MAWChPt, NC	0.003	0.002	03/02							0.000	0.005	
CTN	WR	3rd MAW San Diego, CA	0.003	0.002	03/02							0.000	0.005	
CTN	WR	MARFORPAC	0.002	0.012	10/01							0.000	0.014	
CTN	WR	MCSC, Quantico, VA	0.085	0.030	10/01	0.060	01/03					Cont.	Cont.	
CLAWS	MIPR	MCSC, Quantico, VA	0.000	0.180	10/01	0.200	01/03	0.400	01/04	0.200	01/05	Cont.	Cont.	
CLAWS	MIPR	RedstoneArsenal, AL	0.000	0.233	11/01	0.300	01/03	0.300	01/04	0.225	01/05	Cont.	Cont.	
CLAWS	RCP	NSSC, Natick, MA	0.000	0.012	02/02	0.020	01/03	0.200	01/04	0.015	01/05	Cont.	Cont.	
CLAWS	RCP	NSWC, Crane, IN	0.000	0.170	03/02	0.200	01/03	0.200	01/04	0.210	01/05	Cont.	Cont.	
CLAWS	MIPR	MCSC, Quantico, VA	0.000	0.431	03/02	0.500	01/03	0.900	01/04	0.400	01/05	Cont.	Cont.	
CLAWS	MIPR	GSA, Dallas, TX	0.000	0.089	09/01	0.125	01/03	0.125	01/04	0.140	01/05	Cont.	Cont.	
CLAWS	MIPR	MCSC, Quantico, VA	0.000	0.087	04/02	0.100	01/03	0.600	01/04	0.085	01/05	Cont.	Cont.	

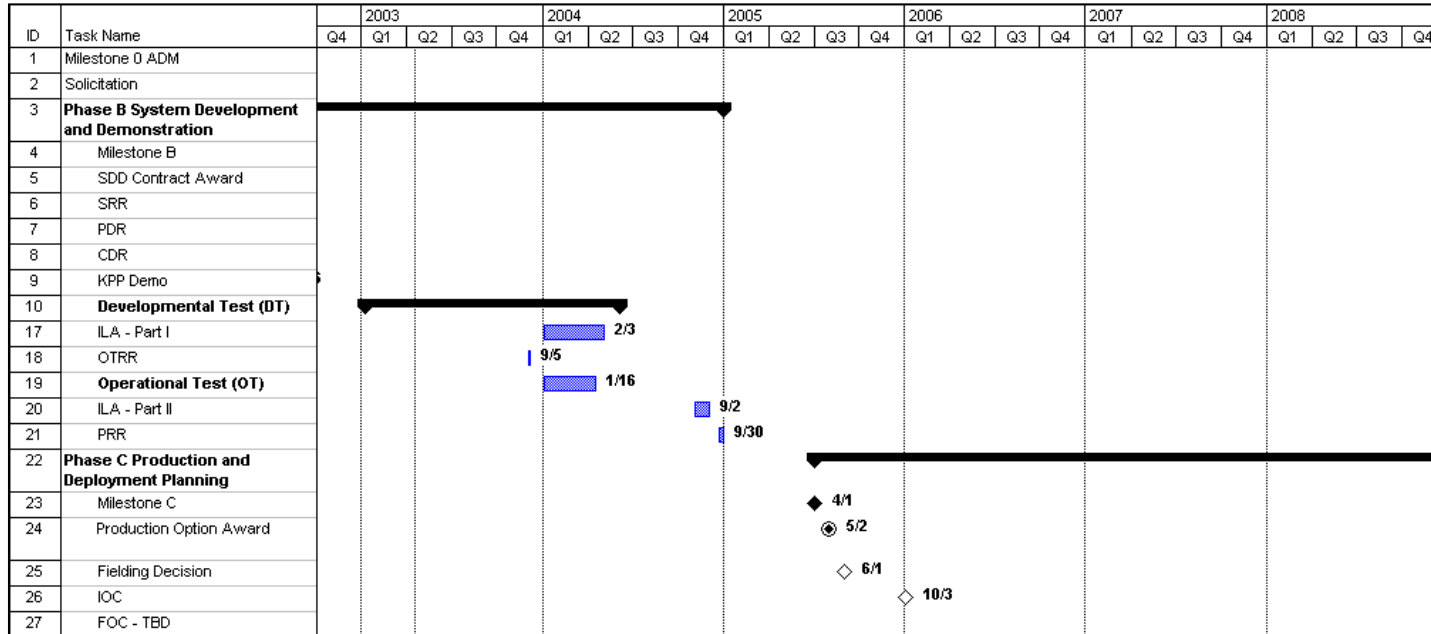
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Exhibit R-3 Cost Analysis							DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206313M Marine Corps Communication Sys				C2278 Air Defense Weapons Systems							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
LAAD SUSTAINMENT	MIPR	TBD	0.000	0.000		0.000		0.000		0.100	01/05	Cont.	Cont.	
MRRS	MIPR	GSA, Bremerton, WA	0.000	0.000		2.050	04/03					0.000	2.050	2.050
Subtotal Support			1.919	1.673		4.717		3.100		1.974		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CWAR	RCP	Raytheon, Pelham NJ	0.000	0.121	07/02	0.000						0.000	0.121	0.121
SHORT/MEDIUM RANGE	RCP	Warner Robbins, GA	0.000	0.159	07/02	0.230	01/03					Cont.	Cont.	
CID	WR	CECOM, Ft Monmouth	0.000	0.000		0.000		0.500	01/04	0.500	01/05	Cont.	Cont.	
CTN	WR	Port Hueneme, CA	0.018	0.018	01/02	0.018	01/03					Cont.	Cont.	
CTN	WR	MCTSSA, Cp Pndltn,CA	0.003	0.032	09/01	0.035	01/03					Cont.	Cont.	
CTN	WR	MACS24 Damneck,VA	0.087	0.012	01/02	0.016	01/03					Cont.	Cont.	
CTN	MIPR	DCMS, Syracuse, NY	0.022	0.002	10/01	0.002	03/03					Cont.	Cont.	
CLAWS	WR	White Sands, NM	0.000	0.100	06/02	2.000	01/03	2.200	01/04	1.000	01/05	0.000	5.300	0.800
CLAWS		MCOTEA	0.000	0.125	11/01	0.125	11/02	0.500	11/03	0.125	01/05	Cont.	Cont.	
CLAWS	MIPR	Aberdeen, Md	0.000	0.142	06/02							0.000	0.142	0.142
CLAWS	RCP	Raytheon, Tewksbury, MA	0.000	0.000		2.820	03/03	1.500	10/03			Cont.	Cont.	
CLAWS	MIPR	JSPO, Eglin, AFB, FL	0.000	0.000		0.000		2.865	10/03	0.820	10/04	Cont.	Cont.	
LAAD SUSTAINMENT	MIPR	TBD	0.000	0.000		0.000		0.053	01/04	0.340	01/05	Cont.	Cont.	
PMS	RCP	Boeing, Huntsville, AL	0.000	0.000		0.000		0.060	01/04	0.080	01/05	Cont.	Cont.	
Subtotal T&E			0.130	0.711		5.246		7.678		2.865		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CTN	RCP	Logicon, Stafford, VA	0.591	0.277	01/02	0.487	01/03					Cont.	Cont.	
CID	RCP	NorthGrum, Stafford, VA	0.000	0.189	03/02	0.200	01/03	0.250	01/04	0.250	01/05	0.000	0.889	
CID	RCP	Anteon, Stafford, VA	0.000	0.000		0.340	01/03	0.812	01/04	0.624	01/05	Cont.	Cont.	
MRRS	MIPR	GSA, Bremerton, WA	0.000	0.000		0.650	01/03					Cont.	Cont.	
MRRS	WR	MCSC	0.000	0.000		0.100	01/03					Cont.	Cont.	
MRRS	RCP	Anteon, Stafford, VA	0.000	0.000		0.400	01/03					Cont.	Cont.	
CLAWS	RCP	NGIT, Stafford, VA	0.463	1.116	10/01	2.000	01/03	2.500	01/04	1.912	01/05	Cont.	Cont.	
CLAWS	RCP	SAIC, Washington, DC	0.000	0.383	11/01							Cont.	Cont.	
LAAD SUSTAINMENT	RCP	MCSC, Quantico, VA	0.000	0.000		0.000		0.150	01/04	0.300	01/05	Cont.	Cont.	
LAAD SUSTAINMENT	WR	NSWC. Crane, IN	0.000	0.000		0.000		0.200	01/04	0.200	01/05	Cont.	Cont.	
PMS								0.030	01/04	0.030	01/05	Cont.	Cont.	
Subtotal Management			1.054	1.965		4.177		3.942		3.316		Cont.	Cont.	
Remarks:														
Total Cost				11.156		28.274		23.428		9.596		Cont.	Cont.	

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Exhibit R-4/4a Project Schedule/Detail			DATE: February 2003		
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			

CLAWS Milestone Schedule



Program Funding Summary

(APPN, BLI #, NOMEN)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N	7.434	10.390	19.066	5.132	1.764	1.861	0.926	0.966	Continuing	Continuing
(U) PMC BLI# 489000 CLAWS	0.000	0.000	0.000	17.993	26.727	28.188	19.728	3.609	Contnuing	Continuing
(U) PMC BLI# 305000 CLAWS MISSILES	0.000	0.000	0.000	0.000	22.667	19.280	49.186	24.352	0.000	115.485

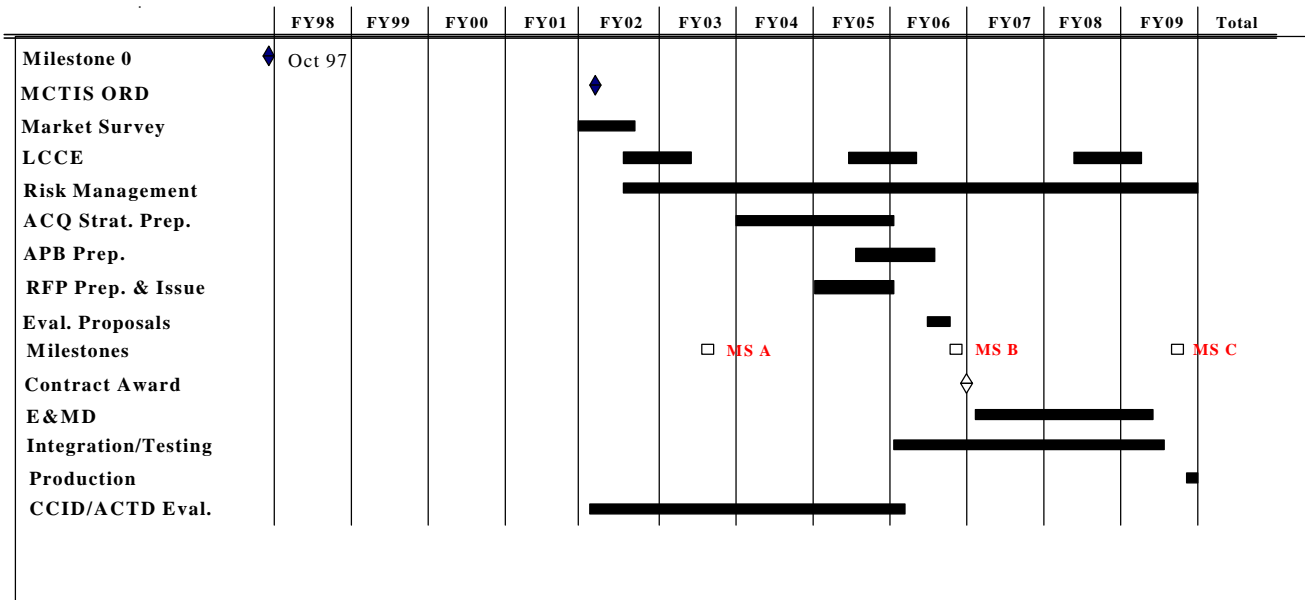
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Exhibit R-4/4a Project Schedule/Detail						DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev		PROGRAM ELEMENT 0206313M Marine Corps Communication Sys			PROJECT NUMBER AND NAME C2278 Air Defense Weapons Systems				
CLAWS SCHEDULE DETAIL		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Development Testing			1Q						
Operational Testing				1Q					
Fielding Decision					3Q				
Initial Operational Capability						1Q			

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Exhibit R-4/4a Project Schedule/Detail		DATE: February 2003
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 Milestone Schedule



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) R&D Air Defense Weapons Systems (Combat ID)	0.600	1.462	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) RDT&E,N	0.000	0.000	1.937	2.224	2.831	6.702	7.166	2.339	Continuing	Continuing
(U) PMC BLI# 464000 Air Ops C2 Systems	0.000	0.000	0.000	0.000	0.000	0.000	0.500	15.300	Continuing	Continuing

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Exhibit R-4/4a Project Schedule/Detail					DATE: February 2003				
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				
MCTIS SCHEDULE DETAIL		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A			4Q						
Milestone B						4Q			
Integration Testing						1Q			4Q

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems					C2315 Training Devices/Simulators				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	13.073	8.580	12.423	8.317	8.434	5.651	4.293	4.446	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<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), and Combined Arms Command & Control Training Upgrade System (CACCTUS). 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 AFATDS (Advanced Field Artillery Tactical Data System). Together these 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>										
B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	6.012	4.633	0.602	0.000						
RDT&E Articles Qty										
<p>JSIMS: Provide technical expertise to the US Army, US Navy and US Air Force in the development of USMC specific requirements. Participate in Federate Integration Event 4 and 5 and Functional Assessment 2. Complete Version Release Milestone (VRM) 1.0 in FY03.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	2.107	0.547	6.612	3.432						
RDT&E Articles Qty										
<p>CLASS: Map system design functions to requirements. Evaluation of system design and software for CLASS subsystems. Development of Instructor Management System and software support. system. Develop highest priority database; develop Howitzer Interface Function (MIF) and Master Control Station (MSC) subsystems; complete closed-loop development. Complete development and integration of hardware and software; complete garrison and shipboard versions; complete prototype.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	4.954	3.400	4.199	3.150						
RDT&E Articles Qty										
<p>CACCTUS: Research Development Test and Evaluation (RDT&E) efforts. Upgrade and enhance one site of Command Arms Staff Trainer (CAST) software.</p>										

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems			C2315 Training Devices/Simulators	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.544	0.994	
RDT&E Articles Qty					
MILES: Develop and integrate ground position location into fielded MILES 2000 equipment. Integrate MK19 40 mm machine gun and other new ground weapons systems into existing MILES 2000 inventory.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.466	0.741	
RDT&E Articles Qty					
SESAMS: Develop and integrate SESAMS capability into MILES 2000 to create compatibility between two systems.					
(U) Total \$	13.073	8.580	12.423	8.317	

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Sys Development	0206313M Marine Corps Communication Systems					C2315 Training Devices/Simulators				
(U) PROJECT CHANGE SUMMARY:										
	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>						
(U) FY 2003 President's Budget:	13.548	6.145	4.464	3.208						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.037	-0.245	-4.794	-3.403						
(U) Congressional Rescissions										
(U) Congressional Increases		3.400								
(U) Reprogrammings	-0.227	-0.720	12.761	8.514						
(U) SBIR/STTR Transfer	-0.211									
(U) Minor Affordability Adjustment			-0.008	-0.002						
(U) FY 2004 President's Budget:	13.073	8.580	12.423	8.317						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in funding for FY03 due to Congressional Plus to CACCTUS. Change in FY 04 and FY05 is due to realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI# 653200 Trng Dev/Sims	29.867	19.244	19.988	35.537	20.776	16.386	11.142	10.972	Continuing	Continuing
(U) Related RDT&E: Not Applicable										
(U) D. ACQUISITION STRATEGY:										
(U) JSIMS - Competitively awarded Level of Effort (LOE) contract followed by Cost Plus Fixed Fee (CPFF) contract.										
(U) CLASS - Awarded R & D to Aegis Technology, July 02 (CPFF). Hardware will be awarded on a separate competitive FFP contract in FY05.										
(U) CACCTUS - Competitive cost plus fixed fee contract (CPFF).										
(U) MILES - Competitively award Cost Plus Incentive Fee (CPIF) development contract.										
(U) SESAMS - Competitively award Cost Plus Incentive Fee (CPIF) development contract.										
(U) E. MAJOR PERFORMERS:										
Not Applicable for any programs with Training Devices/Simulators, C2315.										

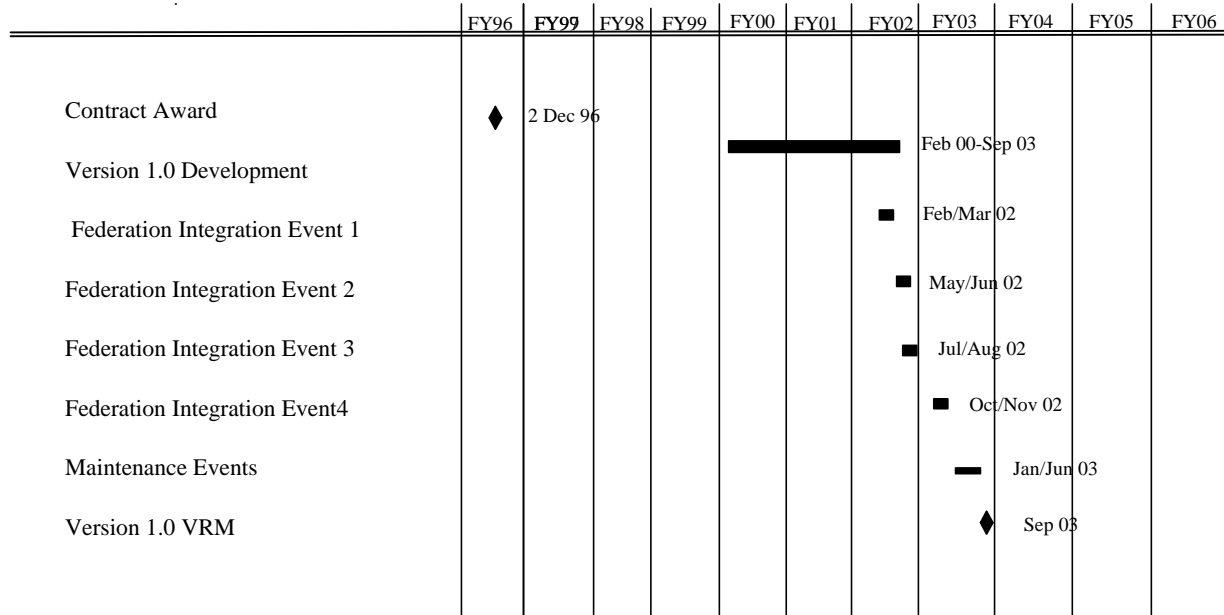
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Exhibit R-3 Cost Analysis							DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Development			0206313M Marine Corps Communication Systems				C2315 Training Devices/Simulators							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	RCP	SPAWAR, San Diego, CA	12.665	0.830	12/01	0.830	12/02	0.000		0.000		Cont.	Cont.	
Software Development	MIPR	STRICOM, Orlando, FL	0.850	1.000	12/01							0.000	1.850	1.850
Software Development	WR	SPAWAR, San Diego, CA	2.921	0.213	12/01	0.224	12/02	0.602	12/03			Cont.	Cont.	
Software Development	RCP	MCSC, Quantico, VA	0.000	1.814	12/01	1.061	12/02	0.698	12/03			Cont.	Cont.	
Software Development	TBD	MCSC, Quantico, VA	0.000	2.102	12/01	0.573	12/02	2.000	03/04	0.274	03/05	Cont.	Cont.	
Subtotal Product Dev			16.436	5.959		2.688		3.300		0.274		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	RCP	MTS, San Diego, CA	5.000	3.853	06/02			0.646	06/04	2.852	03/05	Cont.	Cont.	
Software Development	RCP	TBD						1.000	12/03	3.300	12/04	Cont.	Cont.	
Software Development	RCP	NAWC, Orlando, FL				1.400	03/03					Cont.	Cont.	
Software Development	MIPR	PEO STRI, Orlando FL				1.400	03/03					Cont.	Cont.	
Software Development	RCP	TBD						6.469	03/04	1.443	03/05	Cont.	Cont.	
Subtotal Support			5.000	3.853		2.800		8.115		7.595			27.363	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval	MIPR	CECOM, FT Monmouth, NJ	3.094	0.200	12/01	0.200	12/02					Cont.	Cont.	
Subtotal T&E			3.094	0.200		0.200						Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Engineering Suppt	WR	NAWC, Orlando, FL		0.450	06/02			0.277	06/04	0.255	06/05	0.000	0.982	0.982
Govt Engineering Suppt	WR	NAWC, Orlando, FL	1.059	0.100	06/01			0.139	06/04	0.193	12/04	Cont.	Cont.	
Program Management Suppt	WR	NAWC, Orlando, FL	0.297	0.159	12/01	0.195	12/02					Cont.	Cont.	
Program Management Suppt	WR	NAWC, Orlando, FL				0.600	03/03					Cont.	Cont.	
Program Management Suppt	RCP	MCSC, Quantico, VA	0.015	1.782	12/01	2.097	12/02					Cont.	Cont.	
Program Management Suppt	WR	NAWC, Orlando, FL		0.570	12/01			0.466	12/03			Cont.	Cont.	
Program Management Suppt	WR	NAWC, Orlando, FL						0.126	12/03			Cont.	Cont.	
Subtotal Management			1.371	3.061		2.892		1.008		0.448		Cont.	Cont.	
Remarks:														
Total Cost				13.073		8.580		12.423		8.317		Cont.	Cont.	

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Development	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2315 Training Devices/Simulators

JSIMS PROGRAM SCHEDULE



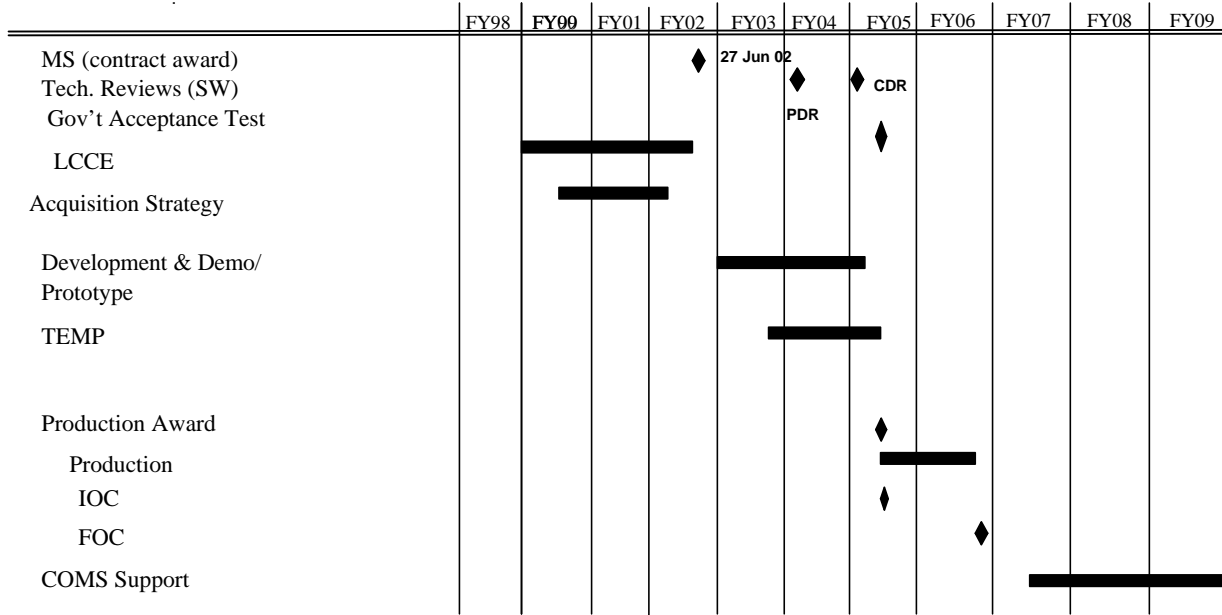
Other Program Funding Summary

<u>(APPN, BLI #, NOMEN)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>
<u>(U) RDT&E,N (JSIMS)</u>	6.012	4.633	0.602	0.000	0.000	0.000	0.000	0.000	Continuing
<u>(U) PMC, BLI# 653200 Trng Dev/Sims (JSIMS)</u>	1.828	1.491	0.000	0.000	0.000	0.000	0.000	0.000	Continuing

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Development	PROGRAM ELEMENT 0206313M Marine Corps Communication Systems	PROJECT NUMBER AND NAME C2315 Training Devices/Simulators

CLASS PROGRAM SCHEDULE



<u>Other Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>
<u>(APPN, BLI #, NOMEN)</u>									
(U) RDT&E,N (CLASS)	2.107	0.547	6.612	3.432	0.142	0.000	0.000	0.000	0.000
(U) PMC, BLI# 653200 Trng Dev/Sims (CLASS)	0.000	0.000	0.000	5.844	1.963	3.730	0.000	0.000	0.000

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Systems Dev	0206313M Marine Corps Communications Systems					C2510 MAGTF CSSE & SE				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	5.011	4.376	23.488	18.094	10.643	8.146	8.431	8.634	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>(U) The MAGTF Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contribute to the Combatant Commander's Common Operating Picture (COP) to support rapid accurate decision making.</p> <p>1. The ATCLASS PIP program funds the improvement of the existing ATCLASS II+ software as well as the migration of base and station (non-deployable) USMC intermediate and consumer level supply and maintenance systems from a mainframe environment into a personal computer application using a network client-server architecture. The ATCLASS PIP consolidates the total force intermediate and consumer level supply and maintenance information management functions into a single material management system. ATCLASS PIP enhances ATCLASS II+, retires existing mainframe legacy applications in use by the bases and stations, and improves logistic support to the operating forces. ATCLASS PIP retains the flexibility to exploit existing commercial and government off-the-shelf software. This system remains compliant with the MAGTF C4I concept, GCCS COE, and published DOD standards for open systems architecture.</p> <p>2. TCAIMS 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. It will replace two of our MAGTF LOG AIS applications over a parallel transition starting in FY00. TC-AIMS II will be used by Command Elements, Traffic Management Offices (TMO), and all operating forces to automate the processes of planning, organizing, coordinating, and controlling deployment, redeployment, and sustainment activities worldwide, in peace as well as during contingencies. It provides modernized, scaleable, integrated, and easily deployable AIS that support reengineered deployment and business processes throughout DOD. TC-AIMS II is the key enabler towards Force Deployment Planning and Execution. It is the source system for In-Transit-Visibility (ITV) data, which provides Combatant Commanders and Components with critical visibility of items in the transportation pipeline. TC-AIMS II links all DOD Component unit movement and Installation Transportation Office/Traffic Management Office (ITO/TMO) functionality into a single transportation management system. It is a Joint ACAT 1A(M) program, with the USMC portion being handled as an ACAT III.</p> <p>3. MAGTF CSSE&SE: The CSSE Shared Data Environment is a cornerstone concept of the Integrated Logistics Capability. It will incorporate data warehousing technologies and products to provide one-stop shopping for data supporting CSSE/SE decision-making processes. It will stage CSSE/SE data and integrate decision support tools (DST) to enable command and control (C2), situational awareness, and total asset visibility at all levels of command, from the Combatant Commander to the Company Commander. The establishment of the CSSE SDE will eliminate the need for individual applications to perform these tasks for themselves and will contribute to a more cost-effective, efficient application development environment. This program, Sharded Data Environment (SDE), has moved from Project C2906, PE 0605013M, MC Information Technology in FY04 and beyond.</p> <p>4. Common Computer Resources (CCR) Marine Common Hardware Suite (MCHS) mission- Central and standardized management and acquisition of all Tactical common computer hardware and infrastructure adopting the Joint Defense Information Infrastructure (DII) Common Operating Environment (COE) with consolidated Integrated Logistics Support. Ensure the environment remains in synchronization with computer hardware technology hardware improvements. The mission supports the Commandant's Planning Guidance and input to the Marine Corps Master Plan. Funding for this program in FY 02 and FY03 is found under Project C2277 of this PE.</p> <p>5. Global Combat Support System (GCSS)MC 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>										

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Systems Dev	0206313M Marine Corps Communications Systems	C2510 MAGTF CSSE & SE		
<p>The ILC Analysis provided the foundation for logistics transformation within the Marine Corps and established a compliance response to 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.</p>				
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.650	0.000	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Software development efforts associated with ATLASS II+.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.622	0.000	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Program Management Support				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.254	0.000	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Development of alternative courses of action and Acquisition Strategy for Logistics and related systems transformation.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.834	0.000	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Development of an adaptive logistics command and control tool to support the planning and execution of expeditionary operations.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.062	0.000	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Post Phase One for the replacement of ATLASS II+.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	1.868	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Subsystem/components development and concept/tech demonstration of new system concepts associated with COTS replacement.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	1.696	0.000	0.000
RDT&E Articles Qty				
ATLASS PIP: Incremental software development (EAI/APIs) and conduct software testing of replacement COTS packages.				

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Systems Dev	0206313M Marine Corps Communications Systems			C2510 MAGTF CSSE & SE	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.190	0.701	
RDT&E Articles Qty					
CCR/MCHS: Environmental testing of CISC/RISC workstations.					
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.605	0.580	
RDT&E Articles Qty					
CCR/MCHS: Environmental testing of CISC/RISC servers.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.299	0.241	
RDT&E Articles Qty					
CCR/MCHS: Technology Insertion.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.299	0.300	
RDT&E Articles Qty					
GCSS/AIT: Development of software with AIT capabilities in conjunction with the DOD AIT implementation plan.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.550	0.500	
RDT&E Articles Qty					
GCSS/SDE: Program Support for configuration control board, systems integration, data architecture, integrated process team(s), and strategic plan update.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.350	0.000	
RDT&E Articles Qty					
GCSS/SDE: Analysis and survey of ILC Proof-of-concept (POC) implementation.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.425	0.400	
RDT&E Articles Qty					
GCSS/SDE: Requirements determination for ILC/GCSS MC data warehouse, reference data, and information exchange repository.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.350	0.500	
RDT&E Articles Qty					
GCSS/SDE: Development of supporting systems architecture to support ILC POC.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.255	0.200	
RDT&E Articles Qty					
GCSS/SDE: Register ILC POC systems/data into Data Management and Interoperability Repository.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.550	0.300	
RDT&E Articles Qty					
GCSS/SDE: Data Analysis of data/software environment relating to ILC POC: to include GCSS MC COTS products, migration systems, and interface systems.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.325	0.300	
RDT&E Articles Qty					
GCSS/SDE: Integrate ILC POC systems/data into the Integrated Logistics Data Model.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.200	1.200	
RDT&E Articles Qty					
GCSS/SDE: Design and development of SDE ILC/GCSS MC data warehouse (complete with GCSS MC COTS interface).					

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EXHIBIT R-2a, RDT&E Project Justification				DATE:
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N/BA-7 Operational Systems Dev		0206313M Marine Corps Communications Systems		C2510 MAGTF CSSE & SE
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.755
RDT&E Articles Qty				0.700
GCSS/SDE: Design and development of SDE ILC/GCSS MC Information Exchange repository.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.455
RDT&E Articles Qty				0.409
GCSS/SDE: Data analysis and Cleansing of legacy data for successive implementation of GCSS MC COTS products.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	1.000
RDT&E Articles Qty				0.700
GCSS-MC Enabler/WarPortal: Preparation of development and test servers and sytems integration, demonstration and testing.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.900
RDT&E Articles Qty				0.300
GCSS-MC Enabler/WarPortal: Integration services for data center build out, Operational Tests and establishment of production operatons.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.100
RDT&E Articles Qty				0.000
GCSS-MC Enabler/WarPortal: Conference room pilots and functional testbeds for product configuration and development planning.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	3.000
RDT&E Articles Qty				0.000
GCSS-MC Supply Chain/LSM: Order Management Capability to plan, direct, monitor, and control processes related to customer orders, manufacturing orders and purchase orders.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	2.000
RDT&E Articles Qty				3.395
GCSS-MC Supply Chain/LSM: Maintenance Management Capability, which includes all types of maintenance, repair and overhaul functions and is a core capability for replacing ATCLASS II+.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	1.079
RDT&E Articles Qty				0.697
GCSS-MC Supply Chain/LSM: Asset Management Capability - The business functions of developing resource requirements, identifying sources of funding, determining cost, acquiring funds, distributing/controlling funds, tracking costs and obligations, cost capturing and reimbursement, and establishing management costs.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	3.746
RDT&E Articles Qty				1.502
GCSS-MC Supply Chain/LSM: Inventory Control and Warehouse Management - basic functions required to replace ATCLASS II+.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	3.000
RDT&E Articles Qty				2.000
GCSS-MC Supply Chain/LSM: Basic Service Fulfillment Capability, which is the ability to manage user requests for CSS services.				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.500
RDT&E Articles Qty				0.407
GCSS-MC Supply Chain/LSM: Data warehouse development to meet GCSS Requirements (CINC 129 from the GCSS CRD).				

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7 Operational Systems Dev		PROGRAM ELEMENT NUMBER AND NAME 0206313M Marine Corps Communications Systems		PROJECT NUMBER AND NAME C2510 MAGTF CSSE & SE	
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.000	0.250
RDT&E Articles Qty					
GCSS-MC Supply Chain/LSM: Logistics Forecasting/Planning Capability.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.000	1.000
RDT&E Articles Qty					
GCSS-MC Decision Support/CLC2S: Enhancements to meet additional user and architecture requirements, and integrate with GCSS-MC portfolio.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.000	0.301
RDT&E Articles Qty					
GCSS-MC Decision Support/CLC2S: Services to transition S&T system into institutional support.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.000	0.124
RDT&E Articles Qty					
GCSS/TFSMS: User requested enhancements.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.863	0.295	0.547	0.000
RDT&E Articles Qty					
TC-AIMS II: Conduct operational test and evaluation of TC-AIMS II. Blocks per JTMO schedule. TC-AIMS II consists of 7 blocks, each block is individually evaluated during an IOT&E and has a separate Milestone III decision.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	0.000	0.000	1.087
RDT&E Articles Qty					
TC-AIMS II: Conduct service specific software enhancement to TC-AIMS II to provide interface capability with USMC systems.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.726	0.517	0.008	0.000
RDT&E Articles Qty					
MAGTF CSSE & SE: Design & development of web-enabling technologies, messaging backbone, and integration with air/ship/rail load and joint planning & execution tools. Conduct efforts to migrate legacy system data and interfaces to the Shared Data Environment.					
(U) Total \$		5.011	4.376	23.488	18.094
(U) PROJECT CHANGE SUMMARY:		FY 2002	FY 2003	FY 2004	FY 2005
(U) FY 2003 President's Budget:		4.558	4.867	0.576	0.581
(U) Adjustments from the President's Budget:					
(U) Congressional Program Reductions		-0.012	-0.491	-0.470	-0.706
(U) Congressional Rescissions					
(U) Congressional Increases					
(U) Reprogrammings		0.476		23.383	18.220
(U) SBIR/STTR Transfer		-0.111			
(U) Minor Affordability Adjustment		0.100		-0.001	-0.001
(U) FY 2004 President's Budget:		5.011	4.376	23.488	18.094
CHANGE SUMMARY EXPLANATION:					
(U) Funding: Change in FY02 reflects reprogramming actions need to cover under funded requirements with Marine Corps programs. Changes FY04 and FY05 are due to realignment of programs within the Marine Corps.					
(U) Schedule: TC-AIMS II Schedule change is due to inadequate IOT&E results, during November and December 2001.					
(U) Technical: Not Applicable.					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Systems Dev	0206313M Marine Corps Communications Systems					C2510 MAGTF CSSE & SE				
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI 464100 TC-AIMS II	2.623	5.181	0.000	0.682	0.000	0.000	0.000	0.000	0.000	8.486
PMC BLI 463000 CCR	27.410	38.168	54.982	68.486	80.550	96.380	97.515	99.804	0.000	563.295
PMC BLI 461400 GCSS	0.000	0.000	8.077	8.589	4.177	0.928	0.625	0.199	Cont.	Cont
(U) Related RDT&E: Not Applicable.										
(U) D. ACQUISITION STRATEGY:										
<p>ATLASS PIP: The current acquisition strategy is to stay with SSC Chesapeake, the developer for ATLASS II+ for development work.</p> <p>TC-AIMS II: This is a joint program with the Army (PEO STAMIS). The purchase of computers will be made by PMIT and the peripherals will be made off a standard government list. The integration of the system will be performed by Global Systems, Inc. under a SPAWAR contract. TC-AIMS II is designed using a modular concept which will incorporate related functionality within a specific block. All of the block/modules will be individually tested (DT and OT), and fielded incrementally until the complete integration in 4th Qtr FY08.</p> <p>Common Computer Resources (CCR): To insure computer hardware in the operating forces keeps pace with industry computer hardware technical improvements.</p> <p>GCSS-MC will pursue an evolutionary acquisition (EA) strategy in order to field an operationally suitable and supportable capability in the shortest time possible. This flexible strategy compliments the overwhelming support GCSS-MC receives from the entire decision making chain. EA offers the fastest method to field this highest of EA priorities and allows for requirements to be time-phased as the users become more familiar with the fielded system 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. EA ensures that systems are not technologically obsolete before fielding and that money is spent only on prioritized user requirements.</p> <p>The GCSS-MC acquisition strategy is divided into two phases: optimization and modernization. The optimization phase, begun in FY01, will run through FY02, consists of planning, concept validation, operational architecture development, modeling, and Portal demonstrations. There are (2) initiatives, Autonomic Logistics (AL) and Logistics Command and Control (LC2), currently in the ACTD phase managed by ONR. The intent is to rapidly transition these advanced technology demonstrations into the GCSS Portfolio of systems beginning in FY04. The modernization phase begins at milestone C, is planned for FY03-FY09, and after initial fielding, will consist of a repetitive cycle of software improvement based on user feedback, testing, training, installation and fielding of subsequent block upgrades. Minor software upgrades will be released on a six month cycle. More substantial software improvement/system upgrade blocks will be fielded annually, as required and will include in addition to emergent user priorities, advanced technology improvements and expanded functionality. Preliminary assessment indicates that GCSS-MC will enter the acquisition gateway at milestone B, based on the architecture work already completed, SRAC validation activities and recommendations, and Portal demonstrations. Tentative milestone dates are for MS B during the 1st quarter FY03 and MS C during the 4th quarter FY04, with fielding to begin in the latter part of FY04 with continued block upgrades thereafter. IOC is initially planned to be Portal capabilities, to include divesture of ATLASS I. FOC is validated when all Marine Corps ground components are using capabilities provided by GCSS-MC to include formal schools, and selected Marine Reserve Components. Exact milestone dates and criteria for IOC and FOC will be negotiated with the MDA as the acquisition strategy evolves.</p>										
(U) E. MAJOR PERFORMERS:										
ATLASS PIP										
FY02 - Gartner Group, McLean, VA, Software development, Alternative solutions for new Marine Corps supply system, Nov 2001										
FY03 - Contracting information is not available at this time. Decision will be made during year of execution, Anticipate Apr 2003.										
TC-AIM II										
FY02 - NWSC, Crane, IN, Conduct IOT&E - supporting MCOTEA. Support includes scenario development, test support, data reduction, input to test requirements, Nov 2001										
FY03 - NWSC, Crane, IN, Conduct IOT&E - supporting MCOTEA. Support includes scenario development, test support, data reduction, input to test requirements, Nov 2002										
FY04 - NWSC, Crane, IN, Conduct IOT&E - supporting MCOTEA. Support includes scenario development, test support, data reduction, input to test requirements, Nov 2003										
FY05 - Contracting information is not available at this time; to be determined.										
MAGTF CSSE & SE										
FY02 - Gartner Group Inc, Mclean, VA and Robins Gioia, Alexandria, VA, Contractor support, Feb 2002.										
FY03 - Contractor will be selected during year of execution, anticipate Apr 2003.										
CCR/MCHS										
FY04 - NWSC, Crane, IN, Environment testing of servers and workstations, Jan 2004										
FY05 - NWSC, Crane, IN, Inserting new technology into servers and workstations, Jan 2005.										
GCSS										
FY04 - This is a new start program. Contracting information will be determined at a later date.										
FY05 - Contracting information will be determined at a later date.										

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT							PROJECT NUMBER AND NAME				
RDT&E, N/BA-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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ATLASS PIP	WR	SSC Chesapeake	1.443	0.650	12/01							Cont.	Cont.	
ATLASS PIP	RCP	MCSC, Quantico, VA		2.709	11/01	1.868	04/03					Cont.	Cont.	
ATLASS PIP	TBD	TBD				1.696	04/03					Cont.	Cont.	
TC-AIMS II	C/FFP	MCSC, Quantico, VA	0.000	0.000						1.087	01/05	Cont.	Cont.	
MAGTF CSSE & SE	C/FFP	Various	0.000	0.726	02/02	0.517	04/03	0.008	01/04			Cont.	Cont.	
CCR/MCHS	WR	NSWC, Crane, Indiana	0.000	0.000		0.000		0.904	01/04	0.821	01/04	Cont.	Cont.	
GCSS LSM	TBD	TBD	0.000					13.325	01/04	8.251	01/05	Cont.	Cont.	
GCSS Warfighter Portal	TBD	TBD	0.000					2.000	01/04	1.000	01/05	Cont.	Cont.	
GCSS CLC2S	TBD	TBD	0.000							1.301	01/05	Cont.	Cont.	
GCSS/SDE	TBD	Various						3.405	04/04	2.800	04/05	Cont.	Cont.	
GCSS/TFSMS	TBD	TBD								0.124	01/05	Cont.	Cont.	
Subtotal Product Dev			1.443	4.085		4.081		19.642		15.384		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
GCSS/SDE	TBD	Various						1.810	01/04	1.709	01/05	0.000	3.519	
GCSS/AIT	TBD	TBD						0.299	01/04	0.300	01/05	0.000	0.599	
Subtotal Support			0.000	0.000		0.000		2.109		2.009			4.118	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CCR/MCHS	WR	NSWC, Crane Indiana	0.000	0.000		0.000		1.190	03/05	0.701	03/05	Cont.	Cont.	
TC-AIMS II	WR	NSWC, Crane, Indiana	0.000	0.216	11/01	0.225	11/02	0.447	11/03			0.000	0.888	
TC-AIMS II	MIPR	CECOM		0.063	01/02	0.070	11/02	0.100	11/03			0.000	0.233	
TC-AIMS II	WR	NSWC, Crane, Indiana	0.000	0.584	06/02							0.000	0.584	
Subtotal T&E			0.000	0.863		0.295		1.737		0.701		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ATLASS PIP	WR	MCSC, QUANTICO, VA		0.063	11/01							0.000	0.063	
Subtotal Management			0.000	0.063		0.000		0.000		0.000		0.000	0.063	
Remarks:														
Total Cost				5.011		4.376		23.488		18.094		Cont.	Cont.	

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems					C3099 RADAR SYSTEMS				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	19.810	57.762	48.143	38.931	6.110	5.080	Cont	Cont
RDT&E Articles Qty										

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

1. The Aviation Radar (AN/TPS-59) is a "congressionally mandated" national asset. It is the only fielded ground-based sensor which can detect and track Theater Ballistic Missiles at ranges of 400 nautical miles, for 360 degrees up to one million feet in elevation. FY02 and FY03 funding are in Project C2273.
2. The Ground Weapons Locating Radar (GWLRL) is an expeditionary radar that can acquire threat indirect fire systems including mortars, artillery, rocket and missile systems. The principle functions of the system will be to detect, track, classify and accurately determine the origin of enemy weapons platforms. The GWLRL will also be capable of registering and adjusting friendly indirect fire while simultaneously maintaining hostile surveillance.
3. The Multi-Role Radar System (MRRS) will provide lightweight, expeditionary, three-dimensional radar capable of detecting Cruise Missiles (CMs), fixed and rotary winged aircraft, Unmanned Aerial Vehicles (UAVs), and will also provide an enhanced Combat Identification (CID) capability. The system will augment the AN/TPS-59(V)3 sensor coverage and will be integrated into the Navy's Cooperative Engagement Capability (CEC) and the Marine Corps Composite Tracking Network (CTN). Additionally, the system shall provide Air Traffic Control with real time surveillance coverage of all air activity within the assigned area of responsibility and will support the situational awareness and cueing for Stinger, Avenger, and CLAWS.
4. 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. As part of this effort, 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. FY02 and FY03 funding are in Project C2278.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.720	0.000
RDT&E Articles Qty				
AN/TPS-59: Develop acquisition documentation for modernization initiative.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.896	1.936
RDT&E Articles Qty				
AN/TPS-59: In-house program management/government expense for modernization initiative.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.352	0.557
RDT&E Articles Qty				
AN/TPS-59: Contractor service support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.696	17.647
RDT&E Articles Qty				
AN/TPS-59: System development and demonstration for modernization initiative.				

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems			C3099 RADAR SYSTEMS	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.892	2.606	
RDT&E Articles Qty					
AN/TPS-59: Develop ECPs for software improvements and DMS issues.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000	
RDT&E Articles Qty					
AN/TPS-59: Efforts funded in FY02 and FY03 under Project C2273 of this PE. Demonstrate potential antenna technology/slotted waveguide antenna (FY02 \$5.907); Develop Engineering Change Proposal (ECP) to incorporate electronic protection (FY02 \$1.612); Develop ECP to incorporate new transmitters for the antenna (FY02 \$1.500); ECP false alarm adaption software (FY02 \$1.098); Develop ECP for software improvements (FY03 \$1.939); Develop AFAR Software (FY03 \$1.500); Investigate Advanced Technologies (FY03 \$2.100) .					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000	
RDT&E Articles Qty					
CWAR: Efforts funded in FY02 and FY03 under Project C2278 of this PE. Developmental Test and Evaluation(FY02 \$0.121); Development of Engineer Design Model (FY02 \$0.124); Lease of Sentinel Radars (FY03 \$0.211);Program management support (FY02 \$0.025) and (FY03 \$0.058).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.325	0.000	
RDT&E Articles Qty					
GWLR: Refinement of ORD, Acquisition Strategy, Acquisition Baseline Agreement, and Life Cycle Cost Estimate.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.169	1.600	
RDT&E Articles Qty					
GWLR: Test and evaluation of Marine Corps equipment configuration of the AN/TPQ-47.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.193	0.202	
RDT&E Articles Qty					
GWLR: Program management support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.272	
RDT&E Articles Qty					
GWLR: Development of Configuration Management Plan and ILS Plan.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	4.164	0.000	
RDT&E Articles Qty					
MRRS: Affordable Ground Based Radar . Funding (\$0.383) in FY03 for this effort is provided under Project C2278 of this PE.					

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems			C3099 RADAR SYSTEMS	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.106	1.000	
RDT&E Articles Qty					
MRRS: Program management support. Funding (\$1.150) in FY03 for this effort is provided under Project C2278 of this PE.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.500	0.000	
RDT&E Articles Qty					
MRRS: Analysis of antenna alternatives, analysis of system integration solutions.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.000	
RDT&E Articles Qty					
MRRS: Antenna design.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.500	
RDT&E Articles Qty					
MRRS: Transmitter design.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	11.000	
RDT&E Articles Qty					
MRRS: Software design and development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	4.000	
RDT&E Articles Qty					
MRRS: Hardware design and development.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	3.000	
RDT&E Articles Qty					
MRRS: Receiver/exciter design.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	4.675	
RDT&E Articles Qty					
MRRS: Developmental testing.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	2.000	
RDT&E Articles Qty					
MRRS: System integration.					

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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				0206313M Marine Corps Communication Systems	
PROJECT NUMBER AND NAME				C3099 RADAR SYSTEMS	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000	
RDT&E Articles Qty					
MRRS: Efforts funded in FY03 under Project C2278 of this PE. Refinement of the ORD, Campaign Level Effectiveness Analysis, Analysis of Alternatives and Life Cycle Cost Estimate (\$2.367).					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.135	0.135	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Program management support. Funding in FY02 (\$0.110) and in FY03 (\$0.110) for this effort is found under Project C2278 of this PE.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.337	0.000	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Developmental Test and Evaluation of the Frequency Generator assembly.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.325	0.000	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Engineer Design Model of the Frequency Generator assembly.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.382	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Developmental test and evaluation of the Low Level Power Supply assembly.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.250	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Engineer Design Model of the Low Level Power Supply assembly.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000	
RDT&E Articles Qty					
SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Efforts funded in FY02 and FY03 under Project C2278 of this PE. Development Test and Evaluation of the High Voltage Power Supply and RF/IF Receiver circuit card (FY02 \$0.139); Development of Engineer Design Model of the High Voltage and RF/IF Receiver assemblies (FY02 \$0.100); Developmental Test and Evaluation of Receiver sub-assemblies (FY03 \$0.137); Development of Engineer Design Model of Receiver sub-assemblies (FY03 \$0.150); Program Management Support (FY02 \$0.110) and (FY03 \$0.110) .					
(U) Total \$ (C3099 Radar Systems)	0.000	0.000	19.810	57.762	

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems					C3099 RADAR SYSTEMS				
(U) PROJECT CHANGE SUMMARY:	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>						
(U) FY 2003 President's Budget:	0.000	0.000	0.000	0.000						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions			-0.674	-1.348						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings			20.484	59.110						
(U) SBIR/STTR Transfer										
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	0.000	0.000	19.810	57.762						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: This is a new project created by the realignment of programs within the Marine Corps during POM 04.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, BLI#465100, AN/TPS-59 (NON TEL)	0.000	0.000	18.211	24.536	7.480	11.951	38.914	50.443	Continuing	Continuing
(U) PMC, BLI#463600, AN/TPS-59 (NON TEL)	5.179	7.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.643
(U) PMC, BLI#464200, Ground Weapon Locator Radar	0.000	0.000	0.052	0.862	0.820	28.830	0.285	0.295	Continuing	Continuing
(U) PMC, BLI#462000, AN/TPQ-46/46A Upgrade	0.000	4.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.167
(U) PMC, BLI#464200, Multi-Role Radar System	0.000	0.000	0.000	0.000	2.067	33.156	45.635	46.789	Continuing	Continuing
(U) PMC, BLI#464000, Short/Med Range Radar	0.000	0.977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.977
(U) PMC, BLI#464200, Short/Med Range Radar	0.000	0.000	1.581	1.425	0.523	0.432	0.439	0.444	Continuing	Continuing
(U) Related RDT&E:										

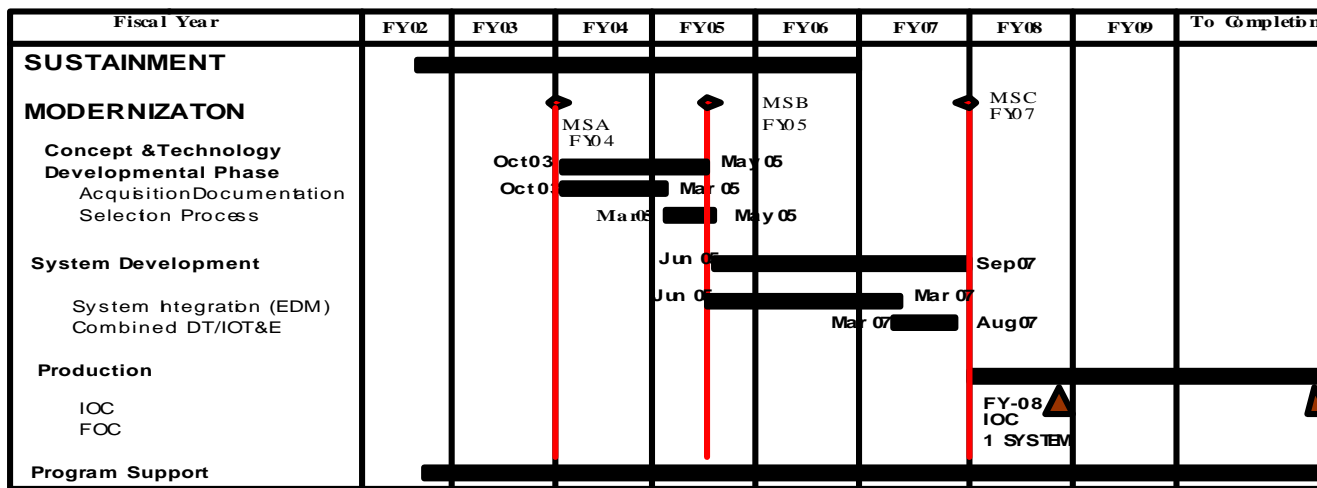
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	February 2003
RDT&E, N/BA-7 OPERATIONAL SYS DEV	0206313M Marine Corps Communication Systems	C3099 RADAR SYSTEMS
(U) D. ACQUISITION STRATEGY:		
<p>(U) AN/TPS-59 RADAR Modernization: The modernization initiative will encompass all 11 radar systems within the Marine Corps inventory. Due to technological advances, evolving threats, mobility issues, changes in employment concepts (OMFTS and EMW), interface requirement 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. Beginning in FY04, the program office will start R&D efforts that will incorporate the ORD change 4 requirements into the current 11 fielded AN/TPS-59(V)3 radars. It is anticipated that this effort will require 3 years of R&D with a combined DT/OT. Forecasted IOC is FY08 with FOC for 11 systems occurring in FY13.</p> <p>(U) AN/TPS-59 Radar SLEP: The Program Office intends to address Diminishing Manufacturing Sources (DMS) issues by continuing with the Service Life Extension Program (SLEP) 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 5 of the 11 systems. The refurbishing and sustaining of 5 systems will enable 3 active (1 per MEF), 1 supporting and 1 reserve unit to have a system with current technology, extend system life cycle and lower the radars' overall operating cost. The remaining 6 systems will transition during the modernization effort.</p> <p>(U) The Ground Weapons Locating Radar (GWLR) AN/TPQ-47 is a U.S. Army lead program. With the exception of some minor Marine Corps specific equipment configuration changes, all prototype development, testing, and system integration will be conducted by the U.S. Army. The AN/TPQ-47 radar is an interim solution to the GWLR, as the AN/TPQ-47 radar does not meet all of the requirements in the GWLR ORD. However, the maturity of the U.S. Army's AN/TPQ-47 radar program will provide a radar system that has the extended range capability needed for the MAGTF to match the range of the High Mobility Artillery Rocket System (HIMARS). Funding for PMC for FY04-FY06 will be for Life Cycle Upgrade and to procure Battery Chargers. HIMARS IOC is scheduled for FY07.</p> <p>(U) MRRS: The MRRS will build off the ONR Affordable Ground Based Radar Science and Technology program that will demonstrate advanced mobility combined with medium radar range, high resolution, and superior clutter reduction. FY04 waiting for Source Selection, FY06 PMC funding is for a long lead item.</p> <p>(U) SHORT/MEDIUM RANGE AIR DEFENSE RADAR: This effort requires R&D funds to develop modifications to keep the Short/Medium Range Air Defense Radar System's electronics and hardware viable and safe, providing sustainment for the fielded system. 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>		
(U) E. MAJOR PERFORMERS:		
<p>(U) Lockheed Martin Corp, Syracuse, NY. Projected to be put on contract in Jan 04 for AN/TPS-59 to develop ECPs for software improvements and DMS issues.</p> <p>(U) Contractors TBD by competitive sourcing, projected to be put on contract in Jan 04 to support the AN/TPS-59 modernization initiative for in-house program management/government expense and system development/demonstration and to develop acquisition documentation.</p> <p>(U) Contractor TBD by competitive sourcing. Projected to be put on contract in Jan 05 to support the AN/TPS-59 modernization initiative for in-house program management/government expense and system development/demonstration. Contractors TBD by competitive sourcing.</p> <p>(U) Raytheon, El Segundo, CA. Projected to be put on contract in Jan 04 for test and evaluation of Marine Corps equipment configuration of the AN/TPQ-47 in support of GWLR.</p> <p>(U) Raytheon, Sudbury, MA. Projected to be put on contract in Jan 04 for the Affordable Ground Based Radar (AGBR) in support of MRRS.</p> <p>(U) GSA, BREMERTON, WA. Projected to be put on contract in Jan 04 for writing and reviewing MRRS documentation and performing an AGBR evaluation.</p> <p>(U) Contractor TBD by competitive sourcing, projected to be put on contract in Mar 05 for MRRS software design and development.</p>		

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Exhibit R-4-4a Project Schedule/Detail		DATE: February 2003
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	C3099 RADAR SYSTEMS

Milestone Schedule AN/TPS-59 Sustainment/Modernization



Program Funding Summary

(APPN, BLI #, NOMEN)

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C2273	10.177	5.539	0.562	0.000	0.000	0.000	0.000	0.000	0.000	16.278
(U) RDT&E,N, C3099	0.000	0.000	10.556	22.746	25.793	21.386	4.847	3.818	Continuing	Continuing
(U) PMC, BLI#463600, AN/TPS-59	5.179	7.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.643
(U) PMC, BLI#465100, AN/TPS-59	0.000	0.000	18.211	24.536	7.480	11.951	38.914	50.443	Continuing	Continuing

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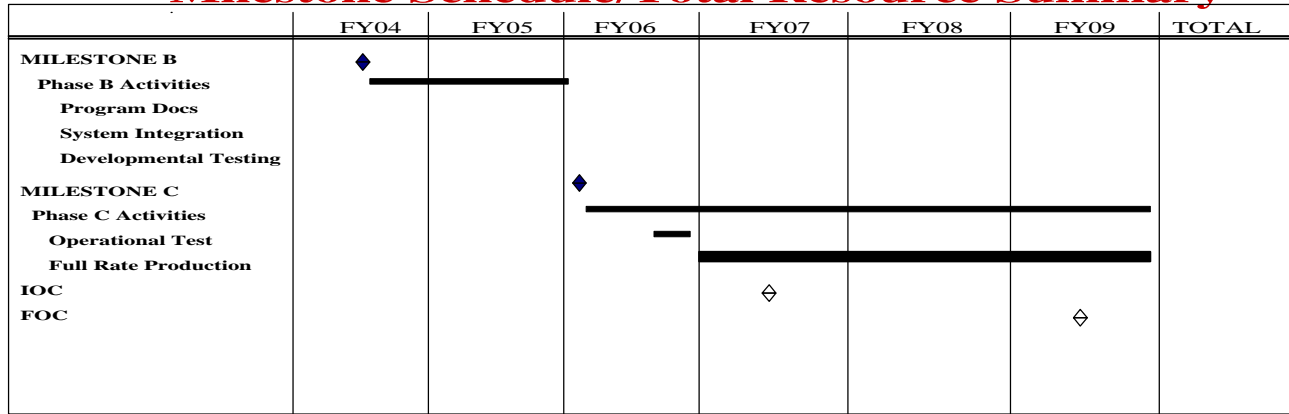
Exhibit R-4-4a Project Schedule/Detail							DATE:					
APPROPRIATION/BUDGET ACTIVITY							PROGRAM ELEMENT			PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 OPERATIONAL SYS DEV							0206623M Marine Corps Ground Combat/Supporting Arms Systems			C3099 RADAR SYSTEMS		
	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009				
AN/TPS-59 SUSTAINMENT SCHEDULE												
AN/TPS-59 MODERNIZATION SCHEDULE DETAIL												
Milestone A			1st Q									
Concept & Technology Developmental Phase			1st Q-----3rd Q									
Acquisition Documentation			1st Q-----2nd Q									
Selection Process				2nd Q-3rd Q								
Milestone B				3rd Q								
System Development				3rd Q-----4th Q								
System Integration (EDM)				3rd Q-----2nd Q								
Combined DT/IOT&E						2nd Q-4th Q						
Milestone C						4th Q						
Production							1st Q-----					
IOC							4th Q					
FOC												
Program Support			3rd Q-----									

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Exhibit R-4-4a Project Schedule/Detail		DATE: February 2003
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 C3099 RADAR SYSTEMS

GROUND WEAPONS LOCATING RADAR SCHEDULE PROFILE

Milestone Schedule/Total Resource Summary



Program Funding Summary

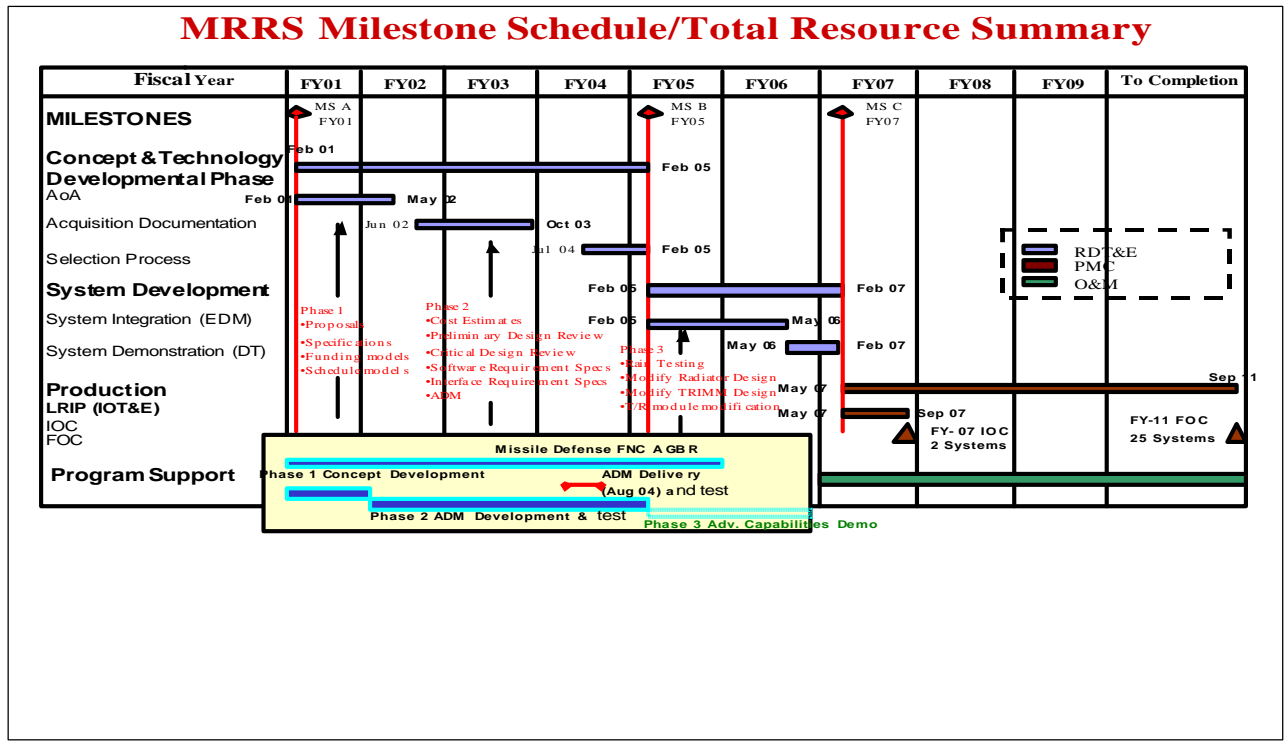
(APPN, BLI #, NOMEN)

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C3099, GWLR	0.000	0.000	1.687	2.074	0.988	0.316	0.000	0.000	0.000	5.065
(U) PMC, BLI#464200, GWLR	0.000	0.000	0.052	0.862	0.820	28.830	0.285	0.295	Continuing	Continuing
(U) PMC, BLI#462000, AN/TPQ-46/46A Upgrade	0.000	4.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.167

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Exhibit R-4-4a Project Schedule/Detail		DATE: February 2003
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	C3099 RADAR SYSTEMS

MRRS Milestone Schedule/Total Resource Summary



Program Funding Summary (APPN, BLI #, NOMEN)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N, C2278, MRRS	0.000	3.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.900
(U) RDT&E,N, C3099, MRRS	0.000	0.000	6.770	32.175	21.006	16.972	1.008	1.005	Continuing	Continuing
(U) PMC, BLI#464200, MRRS	0.000	0.000	0.000	0.000	2.067	33.156	45.635	46.789	Continuing	Continuing

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Exhibit R-4-4a Project Schedule/Detail							DATE: February 2003			
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	C3099 RADAR SYSTEMS								
MRRS SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		
Concept & Technology Developmental Phase	-----2nd Q									
Analysis of Alternatives	3rd Q									
Acquisition Documentation	3rd Q-----	1st Q								
Selection Process			4th Q-----	2nd Q						
Milestone B				2nd Q						
System Development				2nd Q-----	2nd Q					
System Integration (EDM)				2nd Q-----	3rd Q					
System Demonstration (DT)					3rd Q-----	2nd Q				
Milestone C						2nd Q				
Production						3rd Q-----				
LRIP (IOT&E)						3rd Q-4th Q				
IOC						4th Q				
Program Support						1st Q-----				

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems				C9273 Defense Emergency Response Fund (DERF)					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	12.490	0.000	0.000	0.000	0.000	0.000	0.000	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>1. Intelligence System Readiness (ISR) Program will provide timely and targeted solutions to better enable the MAGTF Commander to accomplish his mission by (1) injecting technology rapidly, and (2) conducting up-front testing and integration. The current Marine Corps Intelligence architecture encompasses dozens of systems, acquired over a span of decades, often with little regard for interoperability. Additionally, some systems have gaps in functionality and interoperability which, when balanced against rapid advancements in technology, bring those systems to the brink of obsolescence. 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) technology. In this way, ISR provides proof-of-concept prototypes and focused Research and Development (R&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> <p>2. The Interim Small Unit Remote Scouting System (I-SURSS) funds will be used for development, demonstration and testing of product improvements and block upgrades.</p> <p>3. The JSIPS-TEG is a highly mobile imagery ground station designed to receive and process tactical imagery in support of the MEF/MAGTF commander. This Common Imagery Ground Surface System (CIGSS) is an integral component of the USMC Distributed Common Ground Station (DCGS) architecture that enables the MEF/MAGTF commander to remain interoperable with other Joint and USMC C4I systems. The system provides the capability to receive, process, store, exploit (to include PGM targeting support), and disseminate national theater, and tactical imagery, as well as providing interoperability with the Army's Tactical Exploitation System (TES), the Navy's Joint Services Imagery Processing System - Navy (JSIPS-N), and the Air Force Intelligence Systems Reconnaissance Manager (ISRM) systems during joint engagements.</p> <p>4. Manpack Secondary Imagery Dissemination System (MP SIDS) is a Commercial-Off-The-Shelf (COTS) refresh of a fielded system. MP SIDS consists of one (1) Base Station and three (3) Portable Outstations. It is used by the Reconnaissance Marines to electronically receive, process, reproduce, and disseminate near-real-time imagery throughout the battlefield to support all echelons of the MAGTF.</p> <p>5. The Radio Reconnaissance Equipment Program (RREP) 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's 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 1st Qtr FY04. It will have the added capability to intercept advanced wireless targets identified by the NSA to be operated from remote 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.</p> <p>6. TACPHOTO provides the capability for digital imagery to be captured throughout the remainder of the Marine Corps. TACPHOTO provides the unique view required for the majority of the ground-based operations. It provides high-end digital still-photo camera with long-range telephoto and other special lenses including a night vision capability.</p> <p>7. Technical Control Analysis Center (TCAC). The primary mission of the TCAC is to provide the Radio Battalions (RadBn) with an automated Signals Intelligence (SIGINT) processing, analysis, and reporting capability. The TCAC system is designed to receive collected intelligence from tactical, theater and National level producers and provide a multi-source fused intelligence production capability to support the Marine Air Ground Task Force (MAGTF) commander via the Intelligence Analysis System (IAS), as well as the National Security Agency (NSA) and other National consumers.</p>										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N/BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C9273 Defense Emergency Response Fund (DERF)		
<p>8. Tactical Exploitation of National Capabilities (TENCAP) is a program designed to enhance the ability of tactical Marine Corps forces to exploit the capabilities of national intelligence-gathering systems. Congressionally directed, it requires close liaison with the intelligence community and involves complex and highly-sensitive activities.</p> <p>9. Team Portable Collection System - Multi-Platform Capable - 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>				
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		1.171		
RDT&E Articles Qty				
ISR: Funds are for CIHEP migration to GCCS-I3, Development of ISR Architecture Replication and Program Engineering Support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		2.439		
RDT&E Articles Qty				
I-SURSS: Funds will accelerate the development of SURSS.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.976		
RDT&E Articles Qty				
JSIPS TEG: Fielding the TIGDIL-II, Procure and Deploy New Platforms and Upgrade CDL Software Baseline.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.293		
RDT&E Articles Qty				
MANPACK SIDS: Upgrade Adv/Basic Camera's, computer and Software, Video technology and Perform 3 FUE.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.293		
RDT&E Articles Qty				
RREP: Research Alternative Power Development, Contractor Logistic Support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.098		
RDT&E Articles Qty				
TACPHOTO: Upgrade Adv/Basic Camera's, Video Technology and Protective Measures.				

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems		C9273 Defense Emergency Response Fund (DERF)	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		2.439		
RDT&E Articles Qty				
TCAC: Conduct Hardware Server, Client Workstation, peripheral/ancilliary replacement study, ELINT H/W and S/W Study.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		1.464		
RDT&E Articles Qty				
TENCAP:				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		3.317		
RDT&E Articles Qty				
TPCS: MPC Development receiver, Upgrade and LMFG Operational Test generators.				
(U) Total \$	0.000	12.490	0.000	0.000
	FY2002	FY2003	FY2004	FY2005
(U) Project Change Summary				
(U) FY 2003 President's Budget:	0.000	0.000	0.000	0.000
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions		-0.310		
(U) Congressional Rescissions				
(U) Congressional Increases		12.800		
(U) Reprogrammings				
(U) SBIR/STTR Transfer				
(U) FY 2004 President's Budget:	0.000	12.490	0.000	0.000
CHANGE SUMMARY EXPLANATION:				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE:								
APPROPRIATION/BUDGET ACTIVITY		February 2003								
PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C9273 Defense Emergency Response Fund (DERF)								
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI# 462000 ISR	0	1.683	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PMC BLI# 473400 SURSS	0	0	2.058	10.092	11.759	0.928	0.954	0.969	Continuing	Continuing
PMC BLI# 475000 ISURSS	0	4.155	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PMC BLI# 463600 FLAMES (CESAS)	0	2.936	0.000	1.000	4.194	4.099	0.488	1.385	Continuing	Continuing
PMC BLI# 474700 TACPHOTO	0	1.584	0.000	0.000	0.000	3.427	0.153	1.192	Continuing	Continuing
PMC BLI# 474700 JSIPS TEG	5.699	11.427	2.905	0.618	0.000	0.000	0.000	0.000	Continuing	Continuing
PMC BLI# 474700 RREP	0	3.939	0.000	0.000	4.194	0.000	0.000	4.228	Continuing	Continuing
PMC BLI# 474700 MANPACK SIDS	0	0	1.062	2.857	1.711	1.712	1.762	1.721	Continuing	Continuing
PMC BLI# 474900 TCAC	0.863	1.462	0.345	1.545	0.945	0.945	0.945	1.145	Continuing	Continuing
PMC BLI# 474900 TPCS	0	8.097	0.005	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
(U) Related RDT&E: Not Applicable.										
(U) D. ACQUISITION STRATEGY:										
(U) ACQUISITION STRATEGY ISR: The ISR Program is embracing the capabilities-based, evolutionary approach of the new DoD 5000 series guidance to allow for a quick and efficient insertion of technology to the MAGTF. Currently, full-time contractor support is provided by BAE Applied Technologies, Bulldog Technical Services, and MTC Services Corporation. All Contractor support is resident within the ITS facility.										
(U) ACQUISITION STRATEGY ISURSS: I-SURSS is an abbreviated acquisition program designed to rapidly transition a Science and Technology development effort through the system demonstration phase to production and deployment. The Dragon Eye Unmanned Aerial Vehicle system will be modified through evolutionary upgrades to meet a time phased range of SURSS requirements outlined as blocks in the SURSS ORD. Two competitive engineering support contracts were awarded in July 2001 and pre-production assets were built to conduct evaluations. The Government will conduct source selection from the data gathered and award a production contract in the 4th Quarter of FY03.										
(U) ACQUISITION STRATEGY JSIPS TEG: The three deployed TEG(s) were procured from an ESC USAF Raytheon contract. During FY02, the Marine Corps brought control of the TEG program into Marine Corps System Command. A contract is in place with SPAWAR Charleston, SC to upgrade the TEG(s), conduct training, provide logistical support, sustainment and program management. Once a system baseline is established and tested, a MS III decision will be scheduled.										
(U) ACQUISITION STRATEGY MP SIDS: Seventy three (73) suites of the refreshed MP SIDS have been integrated and are in-process of being fielded. Fielding will be accomplished during the FY 02-03 timeframe. A contract is in place with SPAWAR Charleston, SC to provide configuration management, research and development and program management support. The MP SIDS has an established baseline and will receive a technological refresh of 33% of the system each year for FY 04 through 06.										
(U) D. ACQUISITION STRATEGY RREP: 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).										
(U) ACQUISITION STRATEGY TACPHOTO: A contract is in place with NGIT, Stafford VA to provide configuration management, research and development and program management support. Conduct field evaluations, Intregrated Product Team meetings, field evaluation plans and reports.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C9273 Defense Emergency Response Fund (DERF)
<p>(U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements.</p> <p>(U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using already existing contracts.</p> <p>(U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities.</p> <p>(U) E. MAJOR PERFORMERS: INTEL SYSTEM READINESS (ISR) FY03 MTC Services Corporation (MTC) Stafford, VA. Provide funds for engineering and program management support. Austin Information System, Austin TX. Provide funds for software development.</p> <p>INTERIM SMALL UNIT REMOTE SCOUTING SYSTEM (I-SURSS) FY 03 BAE Systems Stafford, VA. Provide funds for program management and technical support.</p> <p>JOINT SERVICE IMAGERY PROCESSING SYSTEM-TACTICAL EXPLOITATION GROUP (JSIPS-TEG) FY 03 SPAWAR, CHARLESTON, S.C. Provide funds for prime integration. NAVAL SURFACE WARFARE CENTER (NSWC), Crane IN, Provide funds for Operational Testing support. MARCORSYSCOM, Quantico VA. Provide funds for software development of software baseline. AFB, Wash, DC Classified Contract . L3 COMM, Salt Lake City UT. Provide funds for TIGDL development.</p> <p>MANPACK SIDS (MP SIDS) FY 03 SPAWAR, CHARLESTON, S.C. Provide funds to EMA for training and integration. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Provide funds for program management and field testing technical support.</p> <p>RADIO RECONNAISSANCE EQUIPMENT PROGRAM (RREP) FY03 NAVAL SURFACE WARFARE CENTER, Crane IN. Funds for engineering and program management support for Suite-3. Nov 03</p> <p>TACPHOTO FY 03 SPAWAR, CHARLESTON, S.C. Provide funds to EMA for training and integration. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), Provide funds for program management and field testing technical support.</p> <p>TACTICAL CONTROL AND ANALYSIS CENTER (TCAC) FY 03 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.</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems	C9273 Defense Emergency Response Fund (DERF)
<p>TENCAP FY 03 SMC/XRBP WASHINGTON , DC Provide funds to develop new intel applications and means to receive national intel.</p> <p>TEAM PORTABLE COLLECTION SYSTEM - MULTI-PLATFORM CAPABLE (TPCS-MPC) FY 03 SPAWAR, CHARLESTON, S.C. Provide funds for prime systems integrator for TPCS-MPC EDM. NORTHROP GRUMMAN INFORMATION TECHNOLOGY (NGIT), System Engineering Technical Assistance, Stafford VA Provide funds SETA support contract for system engineering and program management. COMPUTER SCIENCE CORP, Dumfries, VA Funds provided for SETA support for Configuration Management (CM). BTG, Dumfries VA Funds provide Contractor Engineering Technical Support (CETS) at RadBn for training support and Independent Validation and Verification (IV&V) at 1st and 2nd RadBn.</p> <p>(U) SCHEDULE PROFILE:</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206313M Marine Corps Communications Systems				C9276 Radar and Ship Maneuver					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	7.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.027
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>1. IMPR HIGH PERFORMANCE LONG RANGE: The 3-D Expeditionary long-range radar must provide anti-air warfare units of the aviation combat element with sufficient advanced warning and target information to allow for threat evaluation and responsive action, including air raid warning of targeted forces and neutralization of the threat. The radar must provide air controllers with a precise, true air picture of sufficient quality to conduct close control of individual aircraft under a wide range of environmental and operational conditions. The logistical footprint of the radar system must be reduced as technology permits. Downsizing is the key to improved transportability and reduced setup time. In the case of Theater Missile Defense operations, the radar must have the capability, to disseminate target information to the ADCP, and, to the TAOM/future C2 Node for dissemination to all air defense agencies (Marine Corps and Joint Services) and service-to-air missile firing batteries (Marine Corp and Joint Services) by way of a common digital data link.</p> <p>2. MARINE CORPS SHIP TO OBJECTIVE MANEUVER: Integrate the existing Marine SINCGARS radios into multi-user local networks; add militarized palmtops/laptops to display situational awareness and targeting data; link the networks to ships and sensors via high bandwidth communication terminals previously developed for Naval air defense, and perform field demonstrations. Enhance communications network capabilities to allow for the dramatic improvement in the way commanders wage war by allowing them to direct battles from on board their command ships. The communication networks link the commanders with their troops enable the implementation of the desired Ship to Objective Maneuver doctrine.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost		2.050								
RDT&E Articles Qty										
IMPR HIGH PERFORMANCE LONG RANGE : Modernization development.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost		4.977								
RDT&E Articles Qty										
MARINE CORPS SHIP TO OBJECTIVE MANEUVER: Intergrate and networking.										
(U) Total \$	0.000	7.027	0.000	0.000						

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							February 2003			

APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational System Development			PROGRAM ELEMENT (PE) NAME AND NO. 0206623M Marine Corps Ground Combat/Supporting Arms Systems							
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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	41.775	38.850	35.439	70.564	53.579	43.246	34.189	29.817	Cont	Cont
C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)	0.394	0.363	0.355	0.368	1.915	1.932	0.821	0.839	Cont	Cont
C1555 Light Armored Vehicle (LAV) PIP	13.369	4.725	4.216	37.306	25.421	11.405	1.648	1.429	Cont	Cont
C1901 Marine Corps Ground Weaponry PIP	13.475	14.245	2.946	3.112	4.084	4.263	4.369	4.148	Cont	Cont
C2086 Marine Enhanced Program (MEP)	2.199	2.335	2.632	2.669	2.627	2.673	2.753	2.806	Cont	Cont
B2237 Amphibious Vehicle Test Branch (AVTB)	0.685	0.733	0.808	0.814	0.830	0.846	0.872	0.889	Cont	Cont
C2503 Family of Combat Equip Support & Services	1.663	1.087	3.741	3.976	7.223	7.526	9.097	10.138	Cont	Cont
C2928 EIFGSWS (HIMARS)	9.990	11.624	6.943	3.038	0.019	0.000	0.000	0.000	0.000	31.614
C3098 Fire Support Systems	0.000	0.000	11.224	15.828	10.232	14.047	14.156	9.081	Cont	Cont
C4002 Family of Raid Reconnaissance	0.000	0.000	2.574	3.453	1.228	0.554	0.473	0.487	Cont	Cont
C9277 Target Location Designation and Handoff Sys	0.000	1.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.299
C9278 Integrated Digital Camera Riflescope	0.000	1.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.464
C9279 Body Armor Upgradera Riflescope	0.000	0.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.975
Quantity of RDT&E Articles										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 This PE provides modification to Marine Corps Expeditionary Ground Force Weapon Systems to increase lethality, range, survivability and operational effectiveness. It also provides for the development of AAV7A1 reliability, maintainability, operational and safety modifications, improvements in command and control in the ADMS, and product improvements to the family of LAVs. The AVTB provides facilities and personnel which perform a broad range of testing, repair and technical services to amphibious vehicles.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N /BA-7 Operational System Development

PROGRAM ELEMENT (PE) NAME AND NO.

0206623M Marine Corps Ground Combat/Supporting Arms Systems

B. PROGRAM CHANGE SUMMARY

	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY 2005</u>
(U) FY 2003 President's Budget:	43.547	36.004	22.202	20.637
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions	-0.119	-0.984	0.731	-2.194
(U) Congressional Rescissions				
(U) Congressional Increases		3.830		
(U) Reprogrammings	-1.136		12.510	52.130
(U) SBIR/STTR Transfer	-0.517			
(U) Minor Affordability Adjustment			-0.004	-0.009
(U) FY 2004 President's Budget:	41.775	38.850	35.439	70.564

CHANGE SUMMARY EXPLANATION:

- (U) Funding: See Above.
- (U) Schedule:
- (U) Technical: Not Applicable.

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat Arms Systems					B2237 Amphibious Vehicle Test Directorate (AVTD)				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.685	0.733	0.808	0.814	0.830	0.846	0.872	0.889	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>(U) The Amphibious Vehicle Test Directorate (AVTD) is a one-of-a-kind Department of Defense test facility for amphibious vehicles and supports the requirements of all services. The AVTD conducts developmental, combined developmental/operational, and follow-on testing and evaluation of production hardware. It also conducts Product Assurance Testing and Substitute or alternative parts and material testing for amphibious vehicles and associated equipment. Because of its year-round temperate climate, diverse terrain, and 17 miles of coastline, the AVTD is ideal for the amphibious vehicle, as well as ship related testing. The AVTD is in close proximity to San Clemente island which is used frequently for live fire sea-to-shore testing and high-speed water testing. The AVTD is committed to testing product improvement programs, engineering change proposal design changes, and field change requests.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.526	0.569	0.641	0.644						
RDT&E Articles Qty										
<p>Maintenance, refurbishment, upgrade, and replacement of test equipment and instrumentation needed to provide program support, supplies, and services at AVTD test site to support scheduled Assault Amphibious Vehicle 7A1 (AAV7A1) "rebuild to standard" testing, Advanced Amphibious Assault Vehicle (AAAV) Development Testing, Light Armored Vehicle Service Life Extension Program as well as other Marine Corps mobility and mine warfare programs. Upgrade instrumentation for over the horizon capability in developing weapons systems to support operational maneuver from the sea. Program on-site support, supplies, and services to support Naval Sea System Command and Naval Mine Warfare Command for development testing of Navy mine countermeasures system. Provide services and support to the Department of Defense Common Test and Training Range Architecture workshops. Provide organic supply support including management operations, advertising, general accounting, and a maintenance float of equipment. Provide intermediate maintenance (third echelon) of organic non-developmental communication electronic and ordnance equipment.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.159	0.164	0.167	0.170						
RDT&E Articles Qty										
<p>Provide funding for necessary services provided by Marine Corps Base, Camp Pendleton (MCB CAMPEN), California for electricity, heating, and other power charges; and long distance telephone support. Provide funding for calibration of laboratory test equipment and maintenance services provided by MCLB Barstow and 1st Force Service Support Group (FSSG).</p>										
(U) Total \$	0.000	0.685	0.733	0.808	0.814					

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE:		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat Arms Systems	B2237 Amphibious Vehicle Test Directorate (AVTD)		
(U) Project Change Summary:				
	FY2002	FY2003	FY2004	FY2005
(U) FY 2003 President's Budget:	0.726	0.751	0.826	0.832
(U) Adjustments from the President's Budget:				
(U) Congressional Program Reductions	-0.002	-0.018		
(U) Congressional Rescissions				
(U) Congressional Increases				
(U) Reprogrammings	-0.024			
(U) SBIR/STTR Transfer	-0.015			
(U) Inflation Change			-0.018	-0.018
(U) FY 2004 President's Budget:	0.685	0.733	0.808	0.814
CHANGE SUMMARY EXPLANATION:				
(U) Funding: See Above.				
(U) Schedule: Not Applicable.				
(U) Technical: Not Applicable.				
(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.				
(U) Related RDT&E: PE 0603611M (Marine Corps Assault Vehicles)				
(U) D. ACQUISITION STRATEGY:				
Work will be lead in-house. Necessary contractor support will be provided by Marine Corps Base Camp Pendleton by using existing contracts. General Services Administration will be used for vehicle leasing contract.				
(U) E. MAJOR PERFORMERS:				
MCTSSA, Camp Pendleton, CA - Maintenance, refurbishment, upgrade, and replacement of test equipment. Oct 01, Oct 02, Oct 03, Oct 04				
(U) SCHEDULE PROFILE:				
Testing conducted at AVTD includes all aspects of Marine Corps Assault Amphibious Vehicles. Testing planned for FY 02 and beyond includes MK 155 Minefield Breaching System, NBC overpressure system, RAM/RS (Reliability, Availability and Maintainability/Rebuild to Standard) Operational Testing Support and Production Assurance testing. Engineering Change Proposals (ECP) as required; upgrade instrumentation for over the horizon capability in developing weapons systems to support operational maneuver from the sea, support for the Light Armored Vehicle Service Life Extension Program; C4I integrated support for AAV Communications and 7 RAM/RS. AVTD will also support the testing of the Advanced Amphibious Assault Vehicle (AAAV), as directed by DRPM AAA, during the Engineering & Manufacturing Development phase of the AAAV Program Development.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	0.394	0.363	0.355	0.368	1.915	1.932	0.821	0.839	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>(U) The AAV7A1 RDT&E program provides for the development, test and preparation of Engineering Change Proposals (ECPs) to improve the performance, reliability, maintainability and safety of the AAV7A1 Family of Vehicles (FOV). This program also allows for the development of installation kits for the integration of communications and navigation equipment developed for integration into the AAV7A1 FOV.</p> <p>(U) Beginning in FY 06, RDT&E funds will be used for development of upgrades to the AAV recovery variant, the AAVR7A1. The AAVR7A1 is the primary maintenance and recovery vehicle in the AAV FOVs and is an alternate source of maintenance and recovery for other elements of the MEF. This initiative replaces aging and discontinued unique AAVR7A1 subsystems, including the crane, winch, welder, compressor, generator, hydraulic power source, magnetic clutches and tool box. It incorporates the latest recovery, lift and maintenance technologies and will incorporate future support initiatives as a MEF asset.</p>										
B. ACCOMPLISHMENTS/ PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.394	0.363	0.355	0.368						
RDT&E Articles Qty										
Provide engineering support for development and integration of modification kits such as engine test stands, crew heaters, and Advanced Combat Vehicle Current Power into AAV7A1 Family of Vehicles.										
(U) PROJECT CHANGE SUMMARY:										
	FY2002	FY2003	FY2004	FY2005						
(U) FY 2003 President's Budget:	0.359	0.372	0.382	0.394						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.001	-0.009	-0.027	-0.026						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	0.045									
(U) Minor Affordability Adjustments										
(U) SBIR/STTR Transfer	-0.009									
(U) FY 2004 President's Budget:	0.394	0.363	0.355	0.368						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME C0021 Assault Amphibious Vehicle 7A1 (AAV7A1)
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(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009 To Compl</u>	<u>Total Cost</u>
(U) PMC, 202100, AAV 7A1 PIP	75.123	61.689	11.297	9.451	14.884	17.787	44.773	43.877	Continuing Continuing

(U) D. ACQUISITION STRATEGY:

These efforts focus on the development of Engineering Change Proposals to improve performance, reliability, maintainability and safety of the Assault Amphibious Vehicle. Contractor support will be acquired using existing contracts.

(U) E. Major Performers:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems					C1555 Light Armored Vehicle (LAV) PIP				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	13.369	4.725	4.216	37.306	25.421	11.405	1.648	1.429	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>The Light Armored Vehicle Family of Vehicles (LAV FOV) consists of seven fielded LAV configurations, and one communications/intelligence-configured asset on an LAV chassis (Mobile Electronic Warfare Support System). Collectively, 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 (PIP) funds the development and testing of modifications of four major programs; the LAV Service Life Extension Program (SLEP) which includes the Improved Thermal Sight System (ITSS), the LAV Anti Armor System (LAV-AAS) Program, the LAV-Command & Communication (LAV-C2) Program, and the LAV Reliability, Availability & 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 Expeditionary Fire Support System (LAV-EFSS) consists of a 120mm Recoil Mortar System replacement for the LAV-Mortar variant's M252 81 mm Mortar System. The LAV-EFSS will invest in technologies currently existing on newer generations of LAVs.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.808									
RDT&E Articles Qty										
LAV SLEP Basic: Completed developmental and operational testing (DT/OT) of SLEP Basic prototypes for test and evaluation (T&E) of SLEP mods.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	10.377	3.411	2.854	1.233						
RDT&E Articles Qty										
LAV SLEP ITSS: Develop ITSS prototypes, PMO & matrix support, PMO travel, CAAS and DT/OT of ITSS prototypes.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.184	1.314	1.362	1.440						
RDT&E Articles Qty										
LAV RAM: Research and development of numerous LAV RAM projects to include 2 speed transfer case, tire replacement initiative and transmission replacement.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	21.201						
RDT&E Articles Qty										
LAV ANTI-ARMOR: LAV-AAS prototype development, PMO & matrix support, PMO travel, CAAS & test ammo procurement in support of LAV-AAS.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	8.769						
RDT&E Articles Qty										
LAV C2: LAV-C2 prototype development, PMO & matrix support, PMO travel, CAAS & test ammo procurement in support of LAV-C2.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	4.663						
RDT&E Articles Qty										
LAV-EFSS: System Development, Demonstration and integration efforts, PMO & matrix support, PMO travel and CAAS for the LAV-EFSS.										
(U) Total \$	0.000	13.369	4.725		4.216					37.306

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EXHIBIT R-2a, RDT&E Project Justification		DATE:								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C1555 Light Armored Vehicle (LAV) PIP								
(U) PROJECT CHANGE SUMMARY:										
	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>						
(U) FY 2003 President's Budget:	14.147	4.845	1.425	1.478						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.039	-0.120	2.013	-0.988						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	-0.732		0.778	36.816						
(U) SBIR/STTR Transfer	-0.007									
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	13.369	4.725	4.216	37.306						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change of funding is due to the realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, 203800, LAV PIP	25.192	52.067	13.191	51.341	57.399	78.269	113.454	82.727	Continuing	Continuing
(U) Related RDT&E: Not Applicable.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME C1555 Light Armored Vehicle (LAV) PIP
<p>(U) D. ACQUISITION STRATEGY: 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>(U) D. ACQUISITION STRATEGY: The LAV AAS Program is designed to replace the existing LAV Anti Tank Emerson 901 Turret. The current turret has exhibited numerous deficiencies for many years that make it unreliable and costly to maintain. The current modification will ensure the LAV-AAS will be a viable weapons system through the service life of the LAV Family of Vehicles. This utilizes both developmental and off-the-shelf technologies to enhance survivability, lethality, and sustainability while simultaneously reducing the cost of ownership. The Marine Corps will use multi-disciplined integrated product teams consisting of engineering, logistical, contracting and financial personnel to manage the LAV AAS. LAV AAS contracts have been designed using a winner-take-all methodology in order to reduce costs and encourage competition.</p> <p>(U) D. ACQUISITION STRATEGY: The LAV C2 Program is designed to meet and maintain the command and control requirements of the ORD. The LAV-C2 Upgrade will provide a hardware and software module (Universal Communication Interface Module (UCIM)) for the LAV-C2 to support complex radio configurations. The module will provide isolation of critical communications functions in a self-contained module to support a mix of legacy radio and the Joint Tactical Radio System (JTRS). The modification will ensure that the LAV-C2 will be a viable weapons system through the service life of the the LAV Family of Vehicles. This utilizes both developmental and off-the-shelf technologies to enhance survivability, lethality, and sustainability while simultaneously reducing the cost of ownership. The Marine Corps will use multi-disciplined integrated product teams consisting of engineering, logistical, contracting and financial personnel to manage the LAV C2. LAV C2 contracts will be designed using a winner-take-all methodology to reduce costs and encourage competition.</p> <p>(U) D. ACQUISITION STRATEGY: The LAV RAM project funds numerous low-dollar, yet extremely important minor modifications, support equipment and tools and other such projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The Marine Corps 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>(U) D. ACQUISITION STRATEGY: The LAV EFSS Program is designed to replace the existing LAV Mortar M 252 81mm Mortar System with a 120 mm Recoil Mortar System. The current 81mm Mortar System does not meet the Operational Requirements Document (ORD) requirements for lethality and time to emplacement. The modification will ensure that the LAV-EFSS becomes a viable weapon system through the service life of the LAV Family of Vehicles. This utilizes both developmental and off-the-shelf technologies to enhance survivability, lethality, and sustainability while simultaneously reducing the cost of ownership. The Marine Corps will use multi-disciplined integrated product teams consisting of engineering, logistical, contracting and financial personnel to manage the LAV EFSS. LAV EFSS contracts will be designed using a winner-take-all methodology in order to reduce costs and encourage competition.</p>		

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N/BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C1555 Light Armored Vehicle (LAV) PIP
<p>(U) E. MAJOR PERFORMERS:</p> <p>LAV SLEP BASIC</p> <p>FY02 Metric Systems Corporation, Fort Walton Beach, FLA. DT/OT of SLEP Basic prototypes.</p> <p>LAV ITSS</p> <p>FY02 Raytheon Company, Mckinney, TX. ITSS prototype development.</p> <p>FY03 Raytheon Company, Mckinney, TX. DT/OT preparation. Oct 02.</p> <p>FY04 SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 02.</p> <p>FY04 MCCDC, Quantico, VA, DT/OT. Oct 03.</p> <p>FY04 TACOM, Warren, MI. PMO support. Oct 03.</p> <p>FY04 SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 03.</p> <p>FY05 MCCDC, Quantico, VA, DT/OT completion. Oct 04.</p> <p>FY05 TACOM, Warren, MI. PMO support. Oct 04.</p> <p>FY05 SURVICE Engineering Company, Belcamp, MD. ITSS development & test support. Oct 04.</p> <p>LAV RAM</p> <p>FY02 Various</p> <p>FY03 Various</p> <p>FY04 Various</p> <p>FY05 Various</p> <p>LAV-AAS, LAV-C2 & LAV-EFSS</p> <p>FY05 Major performers are not determined as of this date.</p>		

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT						PROJECT NUMBER AND NAME				
RDT&E, N /BA 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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev Spt	CPFF	GTRI/SURVICE, Bellcamp MD	0.750	0.439	1Q02						1Q05	0.000	1.189	1.801
Gov't Dev Engineering	MIPR	In-House Product Dev	1.560									0.000	1.560	
Product Development (ITSS)	Various	Raytheon, Mckinney TX	12.199	8.133	3Q02	0.200	VAR		VAR		1Q05	Cont.	Cont.	42.820
Product Development (RAM)	Various	Various		1.184	VAR	1.314	VAR	1.362	VAR	1.440	VAR	Cont.	Cont.	
Product Development (AAS)	Various	TBD								18.080	1Q05			
Product Development (C2)	Various	TBD								5.862	1Q05	Cont.	Cont.	5.862
Product Development(EFSS)	Various	TBD								3.633	1Q05	Cont.	Cont.	
CASS	MIPR	SURVICE, Bellcamp, MD	0.000							1.876	1Q05	Cont.	Cont.	
Subtotal Product Dev			14.509	9.756		1.514		1.362		30.891		Cont.	Cont.	44.621
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TOW Missiles	FFP	TBD	0.000							0.590	1Q05	0.000	0.590	0.590
Subtotal Support			0.000	0.000		0.000		0.000		0.590			0.590	0.590
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Devl Test & Eval	MIPR	Yuma Prv Ground, AZ	5.133			1.931	3Q03	2.01	Various			0.000	9.077	
Devl Test & Eval	MIPR	Aberdeen Test Center, MD	0.767	1.808	Various					0.865	Various	Cont.	Cont.	
Devl Test & Eval	MIPR	TACOM								1.636	Various	Cont.		
Devl Test & Eval	MIPR	MCOTEA, Quantico, VA		0.650	1Q02	0.100	3Q03			0.396	Various	Cont.		
Subtotal T&E			5.900	2.458		2.031		2.013		2.897		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Management	VAR	TACOM, Warren, MI	2.111	0.569	1Q02	0.737	1Q03	0.693	1Q04	2.078	1Q05	Cont.	Cont.	
Matrix Support	MIPR	ARDEC/NVL/TACOM, MI		0.586	1Q02	0.443	1Q03	0.148	Various	0.850	Various	Cont.	Cont.	
Subtotal Management			2.111	1.155		1.180		0.841		2.928		Cont.	Cont.	
Remarks:														
Total Cost				13.369		4.725		4.216		37.306		Cont.	Cont.	

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME								
RDT&E, N /BA 7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems	C1555 Light Armored Vehicle (LAV) PIP								
(U) D. SCHEDULE PROFILE:										
<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:	4th Qtr, FY 2003							
DT / OT:	2nd Qtr, FY 2001	FOC:	2nd Qtr, FY 2007							
<u>LAV AAS</u>										
Milestone B:	1st Qtr, FY 2005	Contract Award:	1st Qtr, FY 2007							
DT / OT:	1st Qtr, FY 2006	IOC:	4th Qtr, FY 2008							
Milestone C:	1st Qtr, FY 2007	FOC:	4th Qtr, FY 2009							
<u>LAV C2</u>										
Milestone A:	Ongoing	Contract Award:	1st Qtr, FY 2007							
Milestone B:	1st Qtr, FY 2005	IOC:	1st Qtr, FY 2008							
DT / OT:	1st Qtr, FY 2006	FOC:	1st Qtr, FY 2009							
Milestone C:	1st Qtr, FY 2007									
<u>LAV EFSS</u>										
Milestone B:	4th Qtr, FY 2004	Contract Award:	1st Qtr, FY 2008							
DT / OT:	1st Qtr, FY 2006	IOC:	4th Qtr, FY 2009							
Milestone C:	4th Qtr, FY 2007	FOC:	4th Qtr, FY 2010							
<u>Program Funding Summary</u>										
<u>(APPN, BLI #, NOMEN)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(U) RDT&E,N</u>	13.369	4.725	4.216	37.306	25.421	11.405	1.648	1.429	Continuing	Continuing
<u>(U) PMC, BLI# 203800 LAV</u>	25.192	52.067	13.191	51.341	57.399	78.269	113.454	82.727	Continuing	Continuing

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Exhibit R-4/4a Schedule Profile/Detail					DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
RDT&E, N /BA 7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C1555 Light Armored Vehicle (LAV) PIP				
LAV SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
LAV SLEP									
Milestone III:	2Q								
Contract Award:	3Q								
IOC:		4Q							
FOC:						2Q			
LAV AAS									
Milestone A:			N/A						
Milestone B:				1Q					
DT / OT:					1Q				
Milestone C:						1Q			
Contract Award:						1Q			
IOC:							4Q		
FOC:								4Q	
LAV C2									
Milestone A:	Ongoing								
Milestone B:				1Q					
DT / OT:					1Q				
Milestone C:						1Q			
Contract Award:						1Q			
IOC:							1Q		
FOC:								1Q	
LAV EFSS									
Milestone A:	N/A								
Milestone B:			4Q						
DT / OT:					1Q				
Milestone C:						4Q			
Contract Award:							1Q		
IOC:								4Q	
FOC: (4Q 2010)									

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
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					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	13.475	14.245	2.946	3.112	4.084	4.263	4.369	4.148	Cont	Cont
RDT&E Articles Qty	9	3								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
(U) This project develops joint and Marine Corps unique improvements to infantry weapons and artillery technology, USMC unique Amphibious Armor Systems (AAS), improvements for the M1A1 Main Battle Tank and support systems, USMC Family of Small Craft, Night Vision Equipment, Underwater Reconnaissance, Family of Raid and Reconnaissance Equipment, Interim Small Unit Remote Scouting System (ISURSS) and monitors national and international weapons developments.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.823	0.000	0.000	0.000						
RDT&E Articles Qty	8									
<u>AN/GVS-5-Laser Range Finder replacement Advanced Eye Safe Range Finder and Observation System (AEROS):</u> Funds used for engineering support and to purchase candidate systems for use in a down select. Systems will be used for developmental testing and further down select to a single engineering/manufacturing developmental (EMD) system.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.757	0.000	0.000						
RDT&E Articles Qty										
<u>AN/GVS-5 Replacement (AEROS):</u> Funds provide engineering support and procurement of Engineering and Manufacturing Development (EMD) systems for OT&E and Developmental Testing (DT). Funds also used for software development test and integration. This program has moved to Project C3098 within this Program Element (PE).										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.317	0.000	0.000	0.000						
RDT&E Articles Qty										
<u>AN/TPO-46 Radar Mod:</u> Conducted analysis of U.S. Army led False Target Location Modifications (FTLM) engineering change proposal (ECP) package relative to defined requirements. Developed milestone decision documentation for FTLM ECP.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.266	0.278	0.000	0.000						
RDT&E Articles Qty										
<u>Family of Artillery Munitions (FAM):</u> Support a production decision for the Modular Artillery Charge System, to include: Weapons Systems Explosive Safety Review Board testing, program support, and travel. Continue the active monitoring of U.S. Army artillery ammunition development programs to leverage and influence Army developmental efforts. This program has moved to Project C3098 within this PE.										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
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				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.452	0.000	0.000	
RDT&E Articles Qty					
<p>Family of Raids and Reconnaissance Equipment: Continue participation with Natick Labs on refinement of Full Spectrum Battle Equipment (FSBE) program and enhancement of FSBE ensemble. Integrate logistics to standardize and improve existing close quarters battle and direct action combat equipment and all Marine Corps parachute programs. Continue on-going support to existing items that meet mission requirements for Close Quarter Battle and Parachute Operations. Continue development of Airborne systems that will allow military parachutist to carry combat equipment in various configurations and a means of supplying/re-supplying combat essentials to Marine units. Continue 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. This program has moved to Project C4002 within this PE.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.462	0.000	0.000	0.000	
RDT&E Articles Qty					
<p>Family of Small Craft Mods: Conducted engineering analysis and exploration of enhancements. Integration testing for a new navigation suite began. Marine Corps Programs Department (MCPD) Fallbrook continued to support Fault Analysis and Fault Isolation as needed. Past years' efforts have resulted in significant improvements to the safety of the Riverine Assault Craft.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.105	0.000	0.000	
RDT&E Articles Qty					
<p>Family of Small Craft Mods: Continue to pursue improvements for the Riverine Assault Craft and the rigid Raiding Craft. MCPD Fallbrook is the principle agency for supporting these efforts. Safety related issues will be priority, such as conducted in past years with the raw water cooling system. This program has moved to Project C4002 within this PE.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	1.065	0.000	0.000	0.000	
RDT&E Articles Qty					
<p>Fire Support Mods: Joint participation in artillery and fire support improvement projects. Specifically, developed a firing mechanism upgrade for the theodolite modification associated with the Meteorological Measuring System (MMS) as well as safety modifications and service life extension efforts.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.947	0.000	0.000	
RDT&E Articles Qty					
<p>Fire Support Mods: Joint participation in artillery and fire support improvement projects. Specifically, conduct life cycle analysis on the M198 Howitzer to develop Global Positioning System (GPS)-Selective Anti-Spoofing Module (SASAM) capability for the MMS and develop light Engineering Change Proposal (ECP) and software upgrades for the Firefinder Radar to include safety modifications and service life extension efforts. This program has moved to Project C3098 within this PE.</p>					

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY			February 2003	
PROGRAM ELEMENT NUMBER AND NAME				
0206623M Marine Corps Ground Combat/Supporting Arms Systems			C1901 Marine Corps Ground Weaponry PIP	
RDT&E, N /BA-7 Operational Sys Dev				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.035	0.748	0.886	0.992
RDT&E Articles Qty				
<p>Infantry Weapons Mods: Joint participation and Marine Corps unique activities for evaluation of safety, lethality, and technology improvements for Marine Corps infantry/reconnaissance individual /crew served weapons. Past years' efforts have impacted on the safety of M2 Machine Guns and M249 Squad Automatic Weapons and have included the new M40A3 Sniper Rifle, the mortar systems, and the current MEU(SOC) (Marine Expeditionary Unit Special Operations Capability) .45 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.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.013
RDT&E Articles Qty				
<p>Infantry Weapons Mods - FSR: Funds will be used for Life Cycle Management (LCM) issues on fielded systems. This is a roll-up line of individual modification lines.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.452	0.490	0.000	0.000
RDT&E Articles Qty				
<p>Interim Small Unit Remote Scouting System (ISURSS): Operational system development, contractor support and program office travel.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.894	0.757
RDT&E Articles Qty				
<p>Interim Small Unit Remote Scouting System (ISURSS): Funds will be used for development, demonstration and testing of product improvements and block upgrades to meet increasingly demanding Operational Requirements Document (ORD) thresholds. Significant increase in funding occurs after Milestone C (FY03) when the program transitions from a Science and Technology (S&T) experiment to an evolutionary acquisition program with MCSC in the lead.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.488	0.000	0.000
RDT&E Articles Qty				
<p>Interim Passenger Helicopter Aircrew Breathing Device: Initiate R&D efforts in development of underwater breathing device providing limited life-saving capability. The device will allow an underwater breathing capability for Marines who find themselves in a downed helicopter scenario over water.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	7.373	4.719	0.000	0.000
RDT&E Articles Qty				
<p>MIA1 Firepower Enhancement: Comparative assessments of competing designs and conduct system design review to finalize system performance specification. Perform EMD phase activities. Performed final integration and prove out. Procured test articles, conducted developmental test and evaluation, pre-production technical reviews/audits, and logistical support development/planning.</p>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Qty				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE:																
APPROPRIATION/BUDGET ACTIVITY			February 2003																
PROGRAM ELEMENT NUMBER AND NAME																			
RDT&E, N /BA-7 Operational Sys Dev			C1901 Marine Corps Ground Weaponry PIP																
0206623M Marine Corps Ground Combat/Supporting Arms Systems																			
<p>MIA1 Firepower Enhancement (Forward Finance FY 01 Funding): Conducted comparative assessments of competing designs and conduct system design review to finalize system performance specification. Performed Final Integration and Prove out. Procured test articles, conducted developmental test and evaluations, preproduction technical reviews/audits, and logistical support development/planning.</p>																			
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.274</td> <td align="right">0.246</td> <td align="right">0.000</td> <td align="right">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.274	0.246	0.000	0.000	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005															
Accomplishment/Effort Subtotal Cost	0.274	0.246	0.000	0.000															
RDT&E Articles Qty																			
<p>MIA1 Armor Mods: Continued joint participation and evaluation of prospective modifications including component enhancements, advanced fire control systems, survivability systems, combat identification, mobility and others. This program has moved to Project C2316, PE 0206624M, MC Combat Service Support in FY04 and beyond.</p>																			
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.000</td> <td align="right">1.961</td> <td align="right">0.000</td> <td align="right">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.000	1.961	0.000	0.000	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005															
Accomplishment/Effort Subtotal Cost	0.000	1.961	0.000	0.000															
RDT&E Articles Qty																			
<p>Mortar Ballistic Computer (MBC): Initiate R&D efforts in development (including programmatic documentation and support), coding, evaluation, independent verification and validation of MBC technical firing computational software, and integration to a commercial off-the shelf (COTS) hardware platform. This program has moved to Project C3098 within this PE.</p>																			
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Accomplishment/Effort Subtotal Cost	0.559	0.936	1.046	1.111															
RDT&E Articles Qty																			
<p>Night Vision Mod Line: Joint participation and Marine Corps unique activities for evaluation of safety, lethality and technology improvements for Marine Corps Night Vision Devices. Provides for in service engineering agent (ISEA) support at Naval Surface Warfare Center (NSWC), Crane, IN. Participate with Army 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.</p>																			
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.000</td> <td align="right">0.000</td> <td align="right">0.064</td> <td align="right">0.183</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.000	0.000	0.064	0.183	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005															
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.064	0.183															
RDT&E Articles Qty																			
<p>TACTICAL UNMANNED VEHICLE (TUV): Funds will be used for developmental testing at Redstone Arsenal.</p>																			
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.040</td> <td align="right">0.056</td> <td align="right">0.056</td> <td align="right">0.056</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.040	0.056	0.056	0.056	RDT&E Articles Qty				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005															
Accomplishment/Effort Subtotal Cost	0.040	0.056	0.056	0.056															
RDT&E Articles Qty																			
<p>Thermal Weapons Sight (TWS)[AN/PAS-13]: 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, automated aimport reticle (non-mechanical, non-quadrant style, computer-driven sight).</p>																			
<table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td align="right">0.497</td> <td align="right">0.000</td> <td align="right">0.000</td> <td align="right">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td align="center">1</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.497	0.000	0.000	0.000	RDT&E Articles Qty	1			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005															
Accomplishment/Effort Subtotal Cost	0.497	0.000	0.000	0.000															
RDT&E Articles Qty	1																		

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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		
			C1901 Marine Corps Ground Weaponry PIP		
<p>Target Location Designation and Hand-Off System (TLDHS): Continued incremental refinement, coding, and evaluation of the TLDHS-specific software application to ensure interoperability with the emerging Marine Corps tactical C4I architecture and with other fire support platforms and agencies. Conducted initial operational test and evaluation (IOT&E) of the TLDHS and artillery/close-air-support (Joint Variable Message Format) functionality.</p>					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.000	1.062	0.000	0.000
RDT&E Articles Qty			3		
<p>Underwater Reconnaissance Capability (URC): Funds provided for 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. Funds will also be used for support of the Program Management Office. This program has moved to Project C4002 within this PE.</p>					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.138	0.000	0.000	0.000
RDT&E Articles Qty					
<p>ATFP: Antiterrorism Force Protection funds were utilized to conduct research and develop for items that enhanced the Marine Corps' capability to provide homeland defense, critical infrastructure protection, and installation and operating force security.</p>					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.074	0.000	0.000	0.000
RDT&E Articles Qty					
<p>Flame Bunker Neutralization: Funds were utilized to conduct research and development to provide the Marine Corps with the capability to penetrate and destroy breach walls, field fortifications, and bunkers.</p>					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		0.100	0.000	0.000	0.000
RDT&E Articles Qty					
<p>MAGTF Expeditionary Family of Fighting Vehicles (MEFFV): Operational system development, contractor support and program office travel.</p>					
(U) Total \$	0.000	13.475	14.245	2.946	3.112

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003				
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>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>							
(U) FY 2003 President's Budget:	13.693	14.609	8.515	10.887							
(U) Adjustments from the President's Budget:											
(U) Congressional/OSD Program Reduction	-0.037	-0.364	-0.110	-0.110							
(U) Congressional Rescissions											
(U) Congressional Increases											
(U) Reprogrammings	0.088		-5.459	-7.665							
(U) Small Business Innovation Research	-0.269										
(U) Minor Affordability Adjustment											
(U) FY 2004 President's Budget:	13.475	14.245	2.946	3.112							
CHANGE SUMMARY EXPLANATION:											
(U) Funding: Change in FY 04 and FY 05 is due to realignment of programs within the Marine Corps during POM 04.											
(U) Schedule: Not Applicable.											
(U) Technical: Not Applicable.											
(U) C. OTHER PROGRAM FUNDING SUMMARY:											
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>	
(U) PMC (BLI#206200) Improved Recovery Veh	20.287	4.093	3.650	0.685	0.134	0.000	0.000	0.000	0.000	28.849	
(U) PMC (BLI#206300) MOD KITS AFS	1.277	3.229	6.757	11.877	10.253	11.746	11.590	10.269	Continuing	Continuing	
(U) PMC (BLI#220900) Mod Kits IWS	1.782	4.788	3.305	3.258	3.476	2.972	2.935	2.998	Continuing	Continuing	
(U) PMC (BLI#222000) Under \$5 Million	0.263	0.305	4.977	3.395	4.240	4.904	4.812	2.545	Continuing	Continuing	
(U) PMC (BLI#233400) Modular Weapon System	3.881	23.847	13.712	10.080	9.964	0.052	0.000	0.000	0.000	61.536	
(U) PMC (BLI#462000) Items <\$5M	5.159	18.212	0.463	0.462	0.461	0.461	0.000	0.000	Continuing	Continuing	
(U) PMC (BLI#473300) Fire Support Systems	3.584	34.134	28.444	12.668	3.800	1.938	0.000	0.000	Continuing	Continuing	
(U) PMC (BLI#475000) Items Under \$5M (Intel)	1.995	4.155	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	
(U) PMC (BLI#493000) Night Vision Equipment	30.159	22.725	24.428	38.575	27.724	32.509	13.795	19.153	Continuing	Continuing	
(U) PMC (BLI#643400) Amphibious Raid Equip	2.267	21.835	21.404	30.394	18.968	6.696	3.458	3.521	Continuing	Continuing	
(U) PMC (BLI#667000) Items Less Than \$5M	5.256	9.082	5.206	5.196	4.738	6.288	6.731	6.722	Continuing	Continuing	
(U) PMC (BLI#209500) M1A1 Firepower	0.000	0.000	4.222	41.979	34.750	17.829	22.969	0.000	Continuing	Continuing	
(U) PMC (BLI#473400) SURSS	0.000	0.000	2.058	10.092	11.759	0.928	0.954	0.969	Continuing	Continuing	
(U) Related RDT&E:											
(U) All Ground Weapons and Ground Ammunition Systems: Army, Navy, Air Force, Coast Guard, and Special Operations Command											

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
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) D. ACQUISITION STRATEGY: (U) These programs range from off-the-shelf modifications to developmental items. TLDHS acquires the Laser Locator Designator and Rangefinder (LLDR) being developed by the Army. This component is integrated with hand-held computer running target hand-off software developed by the Marine Corps. Fire power enhancement used selected upgrades from Army developmental programs to create a system that more readily meets Marine Corps requirements. Modification covers safety, reliability, and technology up-grades to meet Marine Corps requirements. M1A1 Fire Power Enhancement competitively awarded two cost plus firm fixed price contracts to conduct parallel design, integration and demonstration of NDI technology. 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) E. MAJOR PERFORMERS: NSWC, Dahlgren VA - Preparation of Training Materials, Manual Validation and Test Support. Raytheon: McKinney, TX - Competitive integration and demonstration for the FAR target location modification.		

UNCLASSIFIED

Exhibit R-3 Cost Analysis										DATE: February 2003				
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								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT		SEE BELOW												
AN/GVS5 REPLACEMENT	WR	MCLB, Barstow, CA		0.034	2Q02	0.100	2Q03						Cont.	Cont.
AN/GVS5 REPLACEMENT	WR	NSWC Dahlgren, VA		0.063	3Q02								Cont.	Cont.
AN/GVS5 REPLACEMENT	RCP	Synetics, Inc. King George, VA				0.200	2Q03						Cont.	Cont.
AN/GVS5 REPLACEMENT	RCP	MKI Woodbridge, VA		0.098	2Q02	0.050	2Q03						Cont.	Cont.
AN/TPQ-46	RCP	BAEST, Stafford, VA		0.159	1Q02								Cont.	Cont.
Fam Impr Mortars	MIPR	PM Mortars, Picatinny, NJ	0.155										Cont.	Cont.
Fam Raid and Recon	MIPR	NATICK Labs, Natick, MA				0.258	1Q03						Cont.	Cont.
Fam Raid and Recon	WR	CSS, Panama City, FL				0.194	1Q03						Cont.	Cont.
Fam Small Craft Mods	WR/RCP	NSWC, Crane, IN	1.110	0.176	2Q02								Cont.	Cont.
Fire Spt Mods	WR	Marine Det, Ft Sill, OK	0.180			0.050	1Q03						Cont.	Cont.
Fire Spt Mods	MIPR	USArmy CECOM, Ft Monmouth, NJ	0.403			0.064	1Q03						Cont.	Cont.
Fire Spt Mods	WR	NSWC, Crane, IN	0.030										Cont.	Cont.
Fire Spt Mods	MIPR	TACOM, Rock Island, IL		0.070	4Q02								Cont.	Cont.
Fire Spt Mods	RCP	Tallahassee Tech, FL		0.019	3Q02								Cont.	Cont.
Fire Spt Mods	RCP	Mandus Group, San Diego, CA		0.004	1Q02								Cont.	Cont.
Fire Spt Mods	WR	MCLB, Barstow, CA		0.115	3Q02								Cont.	Cont.
Fire Spt Mods	WR	NSWC, Dahlgren, VA		0.043	3Q02								Cont.	Cont.
Fire Spt Mods	VAR	VARIOUS	0.161	0.134	4Q02	0.193	2Q03						Cont.	Cont.
Inf Weapon Mods	WR/RCP	MCCDC, Quantico, VA	0.725	0.092	1Q02	0.050	1Q03	0.050	1Q04	0.051	1Q05		Cont.	Cont.
Inf Weapon Mods	WR	WTBN, Quantico, VA	0.008			0.176	2Q03	0.211	2Q04	0.216	2Q05		Cont.	Cont.
ISURSS	WR	Pax River, MD		0.252	2Q02	0.229	2Q03	0.280	2Q04	0.286	2Q05		Cont.	Cont.
MBC	RCP	TBD				0.409	2Q03						Cont.	Cont.
M1A1 Firepower	RCP	RAYTHEON/DRS Torrance, CA	7.761	6.733	2Q02	3.000	2Q03						Cont.	Cont.
M1A1 Firepower	MIPR	Night Vision Lab, Ft Belvoir, VA	0.400	0.200	2Q02	0.200	2Q03						Cont.	Cont.
M1A1 Mods	RCP	Booz-Allen Hamilton, McLean, VA	0.176	0.108	1Q02	0.132	2Q03						Cont.	Cont.
Nt. Vision Mod	WR/RCP	NSWC, Crane IN	0.095	0.041	1Q02	0.650	1Q03	0.685	1Q04	0.698	1Q05		Cont.	Cont.
Nt. Vision Mod	MIPR	Night Vision Lab, Ft Belvoir, VA	0.150	0.343	2Q02	0.100	1Q03	0.100	1Q04	0.105	1Q05		Cont.	Cont.
TWS	MIPR	Night Vision Lab, Ft Belvoir, VA	0.242			0.043	1Q03	0.044	1Q04	0.044	1Q05		Cont.	Cont.
TLDHS	RCP	Synetics, Inc., King George, VA	1.990	0.180	1Q02								Cont.	Cont.
IPHABD	MIPR	NATICK, Natick, MA				0.488	1Q03						Cont.	Cont.
Underwater Recon (URC)	WR	CSS, Panama City, FL				0.310	2Q03						Cont.	Cont.
Underwater Recon (URC)	RCP	CSS, Panama City, FL				0.248	2Q03						Cont.	Cont.
TUV	WR	Redstone Arsenal, AL						0.064	1Q04	0.183	1Q05		Cont.	Cont.
Flame Bunker	WR	Redstone Arsenal, AL		0.099	1Q02							0.000	0.099	
Subtotal Product Dev			13.586	8.963		7.144		1.434		1.583		Cont.	Cont.	

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems				C1901 Marine Corps Ground Weaponry PIP							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PROGRAM SUPPORT														
SEE BELOW														
AN/GVS-5	WR	MCSC, Quantico, VA		0.210	1Q02	0.280	1Q03					Cont.	Cont.	
AN/GVS-5	RCP	BAEST, Stafford, VA		0.395	1Q02	0.425	1Q03					Cont.	Cont.	
AN/GVS-5	MIPR	Marine Det, Ft Sill, OK		0.005	2Q02	0.010	2Q03					Cont.	Cont.	
AN/GVS-5	WR	1st MEF, Camp Pendleton, CA		0.010	2Q02							Cont.	Cont.	
AN/GVS-5	WR	NSWC, Dahlgren, VA		0.095	3Q02	0.200	2Q03					Cont.	Cont.	
AN/TPQ-46	RCP	BAEST, Stafford, VA		0.143	1Q02							Cont.	Cont.	
AN/TPQ-46	WR	MCSC, Quantico, VA		0.015	1Q02							Cont.	Cont.	
Fam Artillery Munitions	WR/RCP	BAEST, Stafford, VA	0.108	0.080	1Q02	0.062	1Q03					Cont.	Cont.	
Fam Artillery Munitions	MIPR	TACOM-ARDEC, Picatinny, NJ		0.060	2Q02							Cont.	Cont.	
Fam of Small Craft	RCP	BAEST, Stafford, VA				0.020	Q103					Cont.	Cont.	
Fam Small Craft Mods	RCP	BAEST, Stafford, VA	0.050	0.050	1Q02							Cont.	Cont.	
Fam Small Craft Mods	WR	MCSC, Quantico, VA	0.146	0.038	10/05							Cont.	Cont.	
Fire Supt Mods	WR/RCP	BAEST, Stafford, VA	1.046	0.303	1Q02	0.440	1Q03					Cont.	Cont.	
Inf Wpns Mods	WR	MCSC, Quantico, VA	0.347	0.230	1Q02	0.100	1Q03	0.135	1Q04	0.150	1Q05	Cont.	Cont.	
Inf Wpns Mods	RCP	BAEST, Stafford, VA	0.096	0.374	1Q02	0.312	1Q03	0.373	1Q04	0.391	1Q05	Cont.	Cont.	
Inf Wpns Mods	WR/RCP	NSWC, Dahlgren, VA	0.807	0.120	1Q02							Cont.	Cont.	
Inf Wpns Mods	WR	MCLB, Albany, GA	0.075	0.025	1Q02							Cont.	Cont.	
Inf Wpns Mods	WR/RCP	NSWC, Crane, IN	0.212	0.120	1Q02							Cont.	Cont.	
ISURSS	RCP	BAEST, Stafford, VA		0.179	1Q02	0.219	1Q03	0.179	1Q04	0.179	1Q05	Cont.	Cont.	
ISURSS (Civ Sal)	WR	MCSC, Quantico, VA						0.140	1Q04	0.140	1Q05	Cont.	Cont.	
ISURSS	WR	MCSC, Quantico, VA		0.019	1Q02	0.020	1Q03	0.020	1Q04	0.020	1Q05	Cont.	Cont.	
ISURSS	RCP	TBD						0.225	2Q04	0.082	2Q05	Cont.	Cont.	
ISURSS (Analysis)	RCP	TBD						0.050	2Q04	0.050	1Q05	Cont.	Cont.	
M1A1 Firepower	RCP	BAEST, Stafford, VA	0.064	0.362	2Q02							Cont.	Cont.	
M1A1 Firepower	MIPR	GDLS, Warren, MI/ARDEC/NVL	0.972			0.500	2Q03					Cont.	Cont.	
M1A1 Mods	RCP	BAEST, Stafford, VA	0.032	0.040	1Q02							Cont.	Cont.	
M1A1 Mods	WR	MCSC, Quantico, VA	0.160	0.036	1Q02							Cont.	Cont.	
MBC	WR	MCSC, Quantico, VA	0.075			0.832	1Q03					Cont.	Cont.	
Nt Vision Mod	WR	MCSC, Quantico, VA	0.113			0.050	1Q03	0.126	1Q04	0.138	1Q05	Cont.	Cont.	
Nt Vision Mod	RCP	BAEST, Stafford, VA	0.147	0.150	1Q02	0.111	2Q03	0.110	2Q04	0.145	2Q05	Cont.	Cont.	
TWS	WR	MCSC, Quantico, VA	0.118	0.028	Various							Cont.	Cont.	
TWS	RCP	BAEST, Stafford, VA	0.037			0.013	2Q03	0.012	2Q04	0.012	2Q05	Cont.	Cont.	
TLDHS	RCP	BAEST, Stafford, VA	0.396	0.072	Various							Cont.	Cont.	
TLDHS	WR	MCSC, Quantico, VA	0.243	0.033	Various							Cont.	Cont.	
Underwater Recon (URC)	WR	MCSC, Quantico, VA				0.108	2Q03					Cont.	Cont.	
INF Wpns Mods-FSR	WR/RCP	TBD								0.013	1Q05	Cont.	Cont.	
AT/FP	RCP	BAEST, Stafford, VA		0.100	1Q02							0.000	0.100	
MEFFV	RCP	BAEST, Stafford, VA		0.100	1Q02							0.000	0.100	
Subtotal Support			5.244	3.392		3.702		1.370		1.320		Cont.	Cont.	
Remarks:														

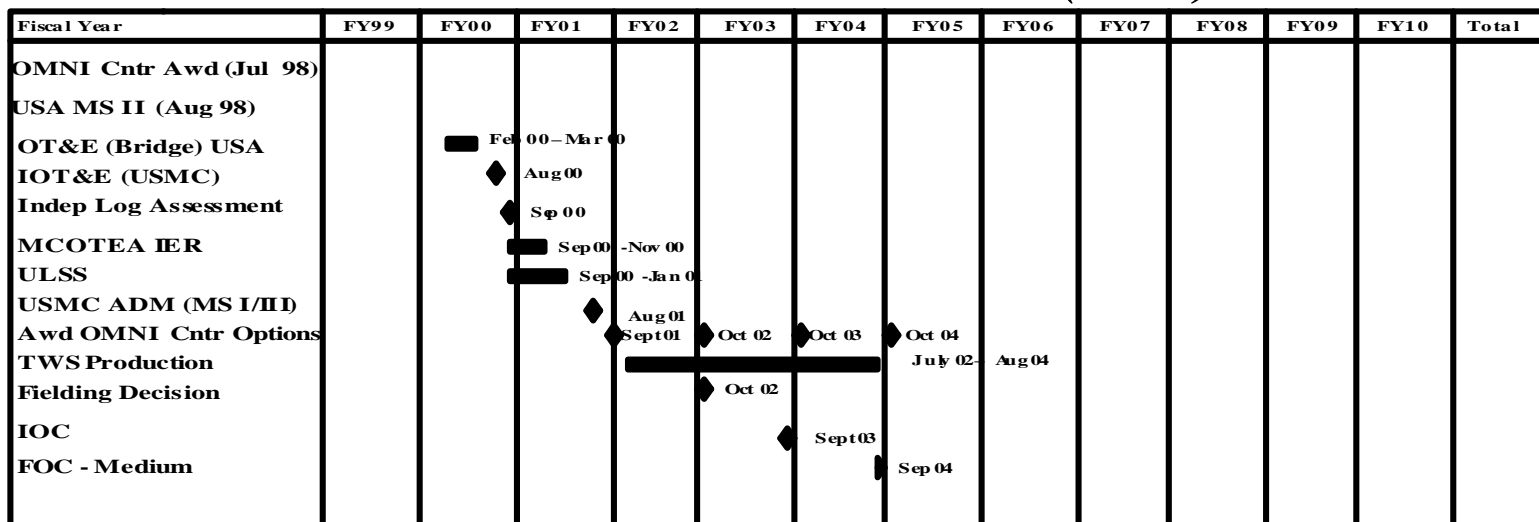
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Exhibit R-3 Cost Analysis							DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems				C1901 Marine Corps Ground Weaponry PIP							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 COST	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E		SEE BELOW												
AN/GVS-5 Replacement	WR	MCOTEA, Quantico, VA		0.095	2Q02	0.200	2Q03					Cont.	Cont.	
AN/GVS-5 Replacement	RCP	Asbury Int., Sterling, VA		0.023	3Q02	0.192	2Q03					Cont.	Cont.	
Fam Artillery Munitions	WR/RCP	NSWC, Crane, IN	0.182	0.000	1Q02	0.151	1Q03					Cont.	Cont.	
Family Small Craft Mods	WR	NSWC, Crane, IN	0.231	0.092	1Q02							Cont.	Cont.	
Family Small Craft Mods	WR	Fallbrook, CA				0.080	2Q03					Cont.	Cont.	
Family Small Craft Mods	WR	Carderock, MD				0.025	1Q03					Cont.	Cont.	
Fire Spt Mods	WR	MCOTEA, Quantico, VA	0.025			0.063	2Q03					Cont.	Cont.	
Inf Wpn Mods	WR	MCOTEA, Quantico, VA	0.070	0.010	Various	0.060	2Q03	0.067	2Q04	0.099	2Q05	Cont.	Cont.	
Inf Wpn Mods	WR	MCCDC, Quantico, VA	0.170	0.065	Various	0.050	2Q03	0.050	2Q04	0.085	2Q05	Cont.	Cont.	
MBC	WR	TBD				0.460	2Q03					Cont.	Cont.	
M1A1 Firepower	MIPR	ARDEC, Rock Island, IL	0.050	0.045	1Q02	0.025	2Q03					Cont.	Cont.	
M1A1 Firepower	WR	MCOTEA, Quantico, VA	0.100			0.927	2Q03					Cont.	Cont.	
M1A1 Mods	MIPR	Yuma Proving Grds, Yuma, AZ		0.090	1Q02							Cont.	Cont.	
Nt Vision Mods	WR	MCOTEA, Quantico, VA	0.075	0.025	2Q01	0.025	2Q03	0.025	2Q04	0.025	2Q05	Cont.	Cont.	
TWS	WR	MCOTEA, Quantico, VA	0.050	0.012	Various							Cont.	Cont.	
TLDHS	WR	NSWC, Dahlgren, VA	0.596	0.085	1Q02							Cont.	Cont.	
TLDHS	WR	MCOTEA, Quantico, VA	0.369	0.075	2Q02							Cont.	Cont.	
Subtotal T&E			1.918	0.617		2.258		0.142		0.209		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 COST	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT		SEE BELOW												
AN/GVS-5 REPLACEMENT	RCP	BAEST, Stafford, VA		0.095	2Q02	0.100	1Q03					Cont.	Cont.	
Fam Artillery Munitions	WR	MCSC, Quantico, VA		0.12	1Q02							Cont.	Cont.	
Fam Artillery Munitions	MIPR	TACOM, Rock Island, IL		0.006	3Q02							Cont.	Cont.	
Fire Supt Mods	WR	MCSC, Quantico, VA	0.582	0.149	1Q02	0.080	1Q03					Cont.	Cont.	
Fire Supt Mods	WR	Marine Det, Ft Sill, OK		0.032	1Q02							Cont.	Cont.	
Fire Supt Mods	WR	Various		0.027	Various							Cont.	Cont.	
Inf Wpns Mods	RCP	ALS, Inc, Dumfries, VA	0.273									Cont.	Cont.	
MBC	RCP	BAEST, Stafford, VA				0.260	1Q03					Cont.	Cont.	
M1A1 MOD KIT	RCP	BAEST, Inc, Dumfries, VA	0.011			0.120	1Q03					Cont.	Cont.	
M1A1 Firepower	RCP	BAEST, Stafford, VA	0.011	0.069	2Q02	0.185	2Q03					Cont.	Cont.	
Underwater Recon (URC)	RCP	BAEST, Stafford, VA				0.396	2Q03					Cont.	Cont.	
Fam of Raid and Recon	WR	MCSC, Quantico, VA										Cont.	Cont.	
TLDHS	RCP	BAEST, Stafford, VA	0.013	0.005	Various							Cont.	Cont.	
Subtotal Management			0.890	0.503		1.141		0.000		0.000		Cont.	Cont.	
Remarks:														
Total Cost				13.475		14.245		2.946		3.112		Cont.	Cont.	

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
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

THERMAL WEAPON SIGHT (TWS)



Program Funding Summary

(APPN, BLI#, NOMEN)

(U) RDT&E,N

(U) PMC, BLI# 493000 Night Vision Equip

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N	0.040	0.056	0.056	0.056	0.000	0.000	0.000	0.000	0.000	0.208
(U) PMC, BLI# 493000 Night Vision Equip	17.923	18.341	19.111	13.924	0.000	0.000	0.000	0.000	0.000	69.299

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7 Operational Sys Dev	PROGRAM ELEMENT NUMBER AND NAME 0206623M Marine Corps Ground Combat Arms Systems					C2086 Marine Enhancement Program (MEP)				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	2.199	2.335	2.632	2.669	2.627	2.673	2.753	2.806	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
(U) 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.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.185	0.722	0.873	0.853						
RDT&E Articles Qty										
Explore NDI equipment that will improve the combat effectiveness and enhance safety and survivability of the Individual Marine.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.355	0.844	0.864	0.898						
RDT&E Articles Qty										
Explore clothing and individual equipment NDI categories.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.659	0.769	0.895	0.918						
RDT&E Articles Qty										
Explore ground weapons, communications and command and control equipment NDI categories.										
(U) Total \$	2.199	2.335	2.632	2.669						

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME									
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat Arms Systems					C2086 Marine Enhancement Program (MEP)				
(U) Project Change Summary:	FY2002	FY2003	FY2004	FY2005						
(U) FY 2003 President's Budget:	2.532	2.392	2.708	2.747						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.007	-0.057	-0.076	-0.078						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	-0.301									
(U) SBIR/STTR Transfer	-0.025									
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	2.199	2.335	2.632	2.669						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in funding is due to realignment of programs within the Marine Corps during POM04.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009 To Compl	Total Cost	
(U) PMC (BLI #221100) MEP	2.487	7.977	6.898	4.036	3.837	3.828	3.954	4.027	Continuing	Continuing
(U) Related RDT&E: PE 0604713A (Combat Feeding, Clothing and Equipment)										
(U) D. ACQUISITION STRATEGY: NDI/COTS										

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EXHIBIT R-2a, RDT&E Project Justification				DATE:
APPROPRIATION/BUDGET ACTIVITY				February 2003
RDT&E, N /BA-7 Operational Sys Dev		PROGRAM ELEMENT NUMBER AND NAME		
		0206623M Marine Corps Ground Combat Arms Systems		C2086 Marine Enhancement Program (MEP)
(U) E. MAJOR PERFORMERS:				
<u>Performer</u>	<u>Effort</u>	<u>FY</u>	<u>Award Date</u>	<u>\$ Amt</u>
USA, SBCCOM, Natick Mass	Product Development	FY02	Dec-01	151
USA, SBCCOM, Natick Mass	DT&E	FY02	Mar-02	290
USA, SBCCOM, Natick Mass	Product Development	FY03	Dec-02	71
USA, SBCCOM, Natick Mass	DT&E	FY03	Mar-03	290
NSWC, Crane Indiana	Product Development	FY03	Dec-02	90
NSWC, Crane Indiana	DT&E	FY03	Dec-02	249
NAWC, Pax River, Maryland	Product Development	FY03	Dec-02	63
NAWC, Pax River, Maryland	DT&E	FY03	Dec-02	276
USA, SBCCOM, Natick Mass	Product Development	FY04	Dec-03	142
USA, SBCCOM, Natick Mass	DT&E	FY04	Jan-03	299
USA, SBCCOM, Natick Mass	Product Development	FY05	Dec-04	143
USA, SBCCOM, Natick Mass	DT&E	FY05	Dec-04	308
NSWC, Crane Indiana	Product Development	FY05	Dec-04	97
NSWC, Crane Indiana	DT&E	FY05	Dec-04	347
NAWC, Pax River, Maryland	Product Development	FY05	Dec-04	72
NAWC, Pax River, Maryland	DT&E	FY05	Dec-04	373

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification								DATE:		
								February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems				C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	1.663	1.087	3.741	3.976	7.223	7.526	9.097	10.138	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>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. 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 the 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.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.178	0.770	1.039	1.062						
RDT&E Articles Qty										
<p>Initial Issue: Exploration of new commercial technologies that can 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 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.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.181	0.000	0.875	1.373						
RDT&E Articles Qty										
<p>Family of Field Medical Equipment: Development of new Authorized Dental and Medical Allowance Lists (AMALs and ADALs) for new technology insertion and to significantly reduce the weight and cube size to enhance support of the operational forces and comply with expeditionary maneuver warfare.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.050	0.125	0.718	0.533						
RDT&E Articles Qty										
<p>Family of Field Medical Equipment: Testing of Commercial-off-the-shelf/Non-developmental item (COTS/NDI), medical equipment for the enroute care to evaluate functionality of the patient transportation.</p>										

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Development	0206623M Marine Corps Ground Combat/Supporting Arms Systems		C2503 FAMILY OF COMBAT EQUIPMENT SUPPORT AND SERVICES		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.254	0.000	0.600	0.500	
RDT&E Articles Qty					
Family of Field Medical Equipment: Explore available technology to ascertain the human/medical effects of the Thermobaric Warfare threat on operational forces.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.119	0.436	0.435	
RDT&E Articles Qty					
Family of Field Medical Equipment: Minimization of the Forward Resuscitative Surgery System to support transportation into one V-22B Osprey.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.073	0.073	0.073	
RDT&E Articles Qty					
Family of Shelters and Shelter Equipment: Design and engineering to increase capability, reduce weight, cost and cube of soft wall shelters. Explore and test new technologies to insert into the Marine Corps shelter programs.					
(U) Total \$	0.000	1.663	1.087	3.741	3.976
(U) PROJECT CHANGE SUMMARY					
	FY2002	FY2003	FY2004	FY2005	
(U) FY 2003 President's Budget:	1.284	1.113	1.139	1.162	
(U) Adjustments from the President's Budget:					
(U) Congressional/OSD Program Reductions	-0.004	-0.026	-0.091	-0.092	
(U) Congressional Rescissions					
(U) Congressional Increases					
(U) Reprogrammings	0.394		2.693	2.906	
(U) SBIR/STTR Transfer	-0.011				
(U) Minor Affordability Adjustment					
(U) FY 2004 President's Budget:	1.663	1.087	3.741	3.976	
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 2003				
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:										
Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PMC Line (BLI#652200) Field Med Equip	12.531	10.236	1.975	6.044	2.438	3.184	3.186	3.257	Cont	Cont
** FY 02/FY 03 Forward Resuscitative Surgery System & Digital Radiography are the procurement programs contained within PMC Field Medical Equipment associated with Initial Issue.										
(U) Related RDT&E: Not Applicable.										
(U) D. ACQUISITION STRATEGY:										
INITIAL ISSUE: Items are all non-ACAT programs and utilize various acquisition strategies. Initial Issue programs leverage heavily on current developments and technology in commercial industry. As a result, 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 Initial Issue R&D 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. Field Medical acquisition strategy is to modify non-developmental items (NDI) and adopt Commercial-Off-The-Shelf (COTS) items. Various strategies are utilized.										
(U) E. MAJOR PERFORMERS:										
INITIAL ISSUE: U.S. Army Natick Research, Development and Engineering Center, Natick, Mass.										
SHELTERS: TBD based on current technology being pursued in FY-03-FY05.										
FAMILY OF FIELD MEDICAL EQUIPMENT: TBD base on current technology being pursued in FY04-FY05.										
(U) SCHEDULE PROFILE: Not Applicable.										

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT						PROJECT NUMBER AND NAME					
RDT&E, N /BA 7 Operational Sys Development			0206623M Marine Corps Ground Combat/Supporting Arms Systems						C2503 Initial Issue					
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development/Tech Insertion	MIPR	USASSCOM Natick, MA	2.156	0.811	1Q/02	0.522	1Q/03	0.553	1Q/04	0.717	1Q/05	Cont.	Cont.	
Development/Tech Insertion	FFP	TBD						1.439	2Q/04	1.263	2Q/05	Cont.	Cont.	
Subtotal Product Dev			2.156	0.811		0.522		1.992		1.980		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Test & Eval	MIPR	USASSCOM Natick, MA	0.500	0.439	3Q/02	0.260	2Q/03	0.269	2Q/04	0.359	2Q/05	Cont.	Cont.	
Field User Evaluations	WR	FMF	0.342	0.283	2Q/02	0.142	2Q/03	1.300	2Q/04	1.452	2Q/05	0.000	3.519	
Subtotal T&E			0.842	0.722		0.402		1.569		1.811		Cont.	Cont.	
Remarks:														
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Eng Suppt	FFP/O	QUANTICO, VA	0.207	0.068	1Q/02	0.039	1Q/03	0.051	1Q/04	0.064	1Q/05	Cont.	Cont.	
Travel	WR	MCSC	0.040	0.062	1Q/02	0.041	1Q/03	0.046	1Q/04	0.038	1Q/05	Cont.	Cont.	
Labor	WR	MCSC				0.083	1Q/03	0.083	1Q/04	0.083	1Q/05			
Subtotal Management			0.247	0.130		0.163		0.180		0.185		Cont.	Cont.	
Remarks:														
Total Cost				1.663		1.087		3.741		3.976		Cont.	Cont.	

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N/BA-7 Operational Sys Development	26623M Marine Corps Ground Combat/Supt Arms				C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	9.990	11.624	6.943	3.038	0.019	0.000	0.000	0.000	0.000	31.614
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
HIMARS is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System Family of Munitions (MFOM). The system includes two Resupply Vehicles (w/ Materials Handling Equipment (MHE) Crane) and two Resupply Trailers, and the MFOM. HIMARS will provide the Fleet Marine Force with 24 hour ground-based, responsive General Support/General Support Reinforcing/Reinforcing (GS/GSR/R) indirect fires which accurately engage targets at long range (45+km) with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore. HIMARS is a significant improvement over currently fielded ground fire support systems. During a 24 hour period the system will be expected to conduct multiple moves and multiple fire missions. HIMARS will satisfy the Marine Corps requirement for an indirect fire system that is responsive, maneuverable, and is capable of engaging targets at long range.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	4.116	3.828	0.837	1.053						
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 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	2.570	1.935	1.954	0.175						
RDT&E Articles Qty										
Develop Support Equipment, Army program office support, contractor provided logistics support										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.404	2.686	2.803	0.830						
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 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.900	3.175	1.349	0.980						
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 \$	9.990	11.624	6.943	3.038						

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Development	26623M Marine Corps Ground Combat/Supt Arms	C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)								
PROJECT CHANGE SUMMARY										
	FY2002	FY2003	FY2004	FY2005						
(U) FY 2003 President's Budget:	10.614	11.922	7.207	3.137						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions	-0.029	-0.298	-0.264	-0.131						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings				0.032						
(U) SBIR/STTR Transfer										
(U) Minor Affordability Adjustment	-0.595									
(U) FY 2004 President's Budget:	9.990	11.624	6.943	3.038						
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. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC, 205001,EIFGSWS (HIMARS)	0.000	7.706	17.954	16.387	137.294	190.522	0.000	0.000	CONT	369.863
(U) PMC, 304001,HIMARS ROCKETS	0.000	0.000	0.000	1.329	32.812	55.050	69.348	54.510	CONT	213.049
(U) Related RDT&E: Not Applicable.										
(U) D. ACQUISITION STRATEGY:										
USMC HIMARS is procuring the Army rocket launcher, the current / future MFOM and developing an Medium Tactical Vehicle Replacement (MTVR)-based Resupply System (truck(s) with associated trailer(s)). USMC 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. USMC Resupply System requirements are unique. Accordingly, the USMC is an integrator and must ensure the required warfighting capability is fielded to the USMC 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 USMC is establishing the training and support methodologies that will result in associated skill sets required within the Marine Corps.										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Development	PROGRAM ELEMENT NUMBER AND NAME 26623M Marine Corps Ground Combat/Supt Arms	PROJECT NUMBER AND NAME C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)
<p>(U) E. MAJOR PERFORMERS:</p> <p>FY-03-Lockheed Martin Missile, Dallas, TX. Modifications to Launcher FEB 03</p> <p>FY-03-Lockheed Martin Missile, Dallas, TX. Guided Multiple Launch Rocket System Development JAN 03</p> <p>FY-03- Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing OCT 02</p> <p>FY-03-Lockheed Martin Missile, Dallas, TX Develop and provide Launcher training, Contract Award Oct 02</p> <p>FY-03-Lockheed Martin Missile, Dallas, TX Contractor Logisitics Support, Contract Award Oct 02</p> <p>FY-04-Lockheed Martin Missile, Dallas, TX. Modifications to Launcher JAN 04</p> <p>FY-04-Lockheed Martin Missile, Dallas, TX. Guided Multiple Launch Rocket System Development JAN 04</p> <p>FY-04- Lockheed Martin Missile, Dallas, TX Systems Engineering Support for Development and testing OCT 03</p> <p>FY-04-Lockheed Martin Missile, Dallas, TX Develop and provide Launcher training, Contract Award Oct 03</p> <p>FY-04-Lockheed Martin Missile, Dallas, TX Contractor Logisitics Support, Contract Award Oct 03</p>		

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA-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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	SS/CPAF	Lockheed Martin, Dallas, TX	10.003	1.840	06/02	0.852	02/03	0.437	01/04	0.703	01/05	0.000	13.835	13.835
Systems Engineering	FFP	GA Tech Rsch Inst., Huntsville, AL				0.100	10/02					0.000	0.100	0.100
Primary Hardware Dev	FFP	TACOM, Warren, MI	0.000	0.070	03/02							0.000	0.070	0.070
Ancillary Hardware Dev	SS/CPAF	Lockheed Martin, Dallas, TX	0.300	0.400	11/01	0.400	01/03	0.100	01/04			0.000	1.200	1.200
Primary Hardware Dev	SS/CPAF	Oshkosh Truck Corp, Oshkosh,WI	2.054	1.252	11/01	1.050	10/02					0.000	4.356	
Systems Engineering	WR	NSWC-Carderock,MD	0.028	0.062	10/01	0.062	10/02					0.000	0.152	
Systems Engineering	WR	NSWC-Dahlgren, VA	0.311	0.387	10/01	0.271	10/02	0.100	10/03	0.150	10/04	0.000	1.219	
Systems Engineering	WR	NSWC-Earle, NJ				0.250	12/02					0.000	0.250	
Systems Engineering	FFP	John J. McMullen Assocs,Pittsb.,PA	0.129	0.000								0.000	0.129	
Systems Engineering	CPAF	Lockheed Martin, Dallas, TX		0.000		0.700	01/03	0.200	10/03	0.200	10/04	0.000	1.100	
Systems Engineering	WR	SPAWAR, Charleston, SC		0.060	12/01	0.071	10/02					0.000	0.131	
Systems Engineering	FFP	NAVSEA, Wash., DC		0.045	05/02									
Systems Engineering	MIPR	TARDEC, Detroit, MI		0.000		0.072	10/02					0.000	0.072	
Subtotal Product Dev			12.825	4.116		3.828		0.837		1.053		0.000	22.659	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Support Equip	WR	MARCORSYSCOM,Quantico, VA	0.699	0.000	10/02	0.300	10/02					0.000	0.999	0.999
Dev Support Equip	WR	MCCDC, Quantico, VA	0.945	0.000				0.100	10/03			0.000	1.045	1.045
Dev Support Equip	WR	NSWC_Carderock, MD		0.000		0.104	10/02	0.100	10/03			0.000	0.204	0.204
Program Support	MIPR	US Army-MSL,Huntsville, AL	0.450	0.545	11/02	0.095	10/02	0.100	10/03			0.000	1.190	1.190
Launcher Training	FFP	Lockheed Martin, Dallas TX	0.974	0.287	12/01	0.186	12/02	0.329	10/03			0.000	1.776	
Integ Logistics Support	FFP	BAE Systems, Stafford, VA	0.368	0.000		0.250	10/02	0.225	10/03	0.175	10/04	0.000	1.018	
Integ Logistics Support	CPAF	Lockheed Martin, Dallas TX		1.606	06/02	0.850	10/02	1.000	01/04				3.456	
Integ Logistics Support	WR	Logistics Base-Albany, GA		0.027	05/02	0.100	02/03						0.127	
Integ Logistics Support	FFP	Oshkosh Truck Corp, Oshkosh,WI				0.050	02/03	0.100	10/03				0.150	
Integ Logistics Support	FFP	SAIC, McLean, VA		0.105	05/02									
Subtotal Support			3.436	2.570		1.935		1.954		0.175		0.000	10.070	
Remarks:														

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Exhibit R-3 Cost Analysis							DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA-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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Test & Eval	WR	NSWC-Dahlgren, VA		0.216	12/02	1.055	10/02					0.000	1.271	
Dev Test & Eval	FFP	KTR Spt TMI, Wash., DC		0.190	12/01							0.000	0.190	0.190
Dev Test & Eval	WR	Redstone Tech Test Ctr,Huntsville,AL		0.043	10/01	0.301	01/03	0.250	10/03	0.100	10/04	0.000	0.694	0.694
Dev Test & Eval	FFP	AMRDEC, Huntsville, VA		0.546	11/01							0.000	0.546	0.546
Dev Test & Eval	WR	Logistics Base, Albany, GA		0.162	07/02									
Dev Test & Eval	MIPR	TACOM, Detroit, MI		0.085	03/02									
Dev Test & Eval	WR	Aberdeen Proving Grd,Aberdeen,MD	0.063	0.000		0.943	10/02	0.250	10/03	0.100	10/04	0.000	1.356	
Dev Test & Eval	WR	NSWC-Carderock, MD		0.000		0.068	10/02	0.100	10/03			0.000	0.168	0.168
Operational Test & Eval	WR	MCOTEA, Quantico, VA		0.136	03/02	0.140	10/02	0.402	10/03	0.300	10/04	0.000	0.978	0.978
Operational Test & Eval	MIPR	MARFORRES, New Orleans, LA		0.026	11/01	0.050	10/02	0.351	10/03	0.100	10/04	0.000	0.527	
Operational Test & Eval	WR	OT Test Conduct, Ft. Sill, OK		0.000		0.129	10/02	1.450	10/03	0.230	10/04	0.000	1.809	
													0.000	0.000
Subtotal T&E			0.063	1.404		2.686		2.803		0.830		0.000	7.786	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Mngmnt	WR	MCSC, Quantico, VA	0.116	0.685	10/02	1.246	10/02						2.047	2.047
Program Mngmnt	MIPR	US ARMY Huntsville, AL	0.050	0.116	11/01	0.600	10/02	0.200	10/03	0.300	10/04	0.000	1.266	1.266
Program Mngmnt	MIPR	TRNG, Fort Sill, OK	0.010	0.040	12/01	0.129	10/02	0.149	10/03				0.328	
Program Mngmnt	FFP	BAE Systems, Stafford, VA	0.092	1.035	10/01	1.200	10/02	1.000	10/03	0.680	10/04		4.007	
Program Mngmnt	FFP	WBS-IMS		0.024	05/02									
													0.000	
Subtotal Management			0.268	1.900		3.175		1.349		0.980		0.000	7.672	
Remarks:														
Total Cost				9.990		11.624		6.943		3.038		0.019	31.614	

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Supt Arms	PROJECT NUMBER AND NAME C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)

Fiscal Year	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09												
Quarter	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
MS A																				
Mat Launcher Delivery		♦																		
MS B			♦																	
US Army/USMC DT																				
USMC OA		♦	♦	♦																
MS C/LRIP Decision				♦																
RSV/RST System Demo			♦																	
LRIP GMLRS Decision				♦																
LRIP GMLRS				♦	♦	♦	♦													
LRIP Launcher Delivery					♦															
USMC OT					♦	♦	♦													
Interim Capability						♦	♦	♦	♦											
FRP										♦										
IOC																				♦
FOC																				

<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) 026623M, RDT&E,N	9.990	11.624	6.943	3.038	0.019	0.000	0.000	0.000	0.000	31.614
(U) PMC, 205001, Expeditionary Indirect Fire Ground Support Weapons System (EIFGSWS) (HIMARS)	0.000	7.706	17.954	16.387	137.294	190.522	0.000	0.000	0.000	369.863
(U) PMC, 304001, HIMARS ROCKETS	0.000	0.000	0.000	1.329	32.812	55.050	69.348	54.510	CONT	213.049

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Exhibit R-4/4a Schedule Profile/Detail						DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N /BA-7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supt Arms				C2928 HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)			
HIMARS SCHEDULE DETAIL		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Maturation Launcher Delivery		4Q							
Milestone B			1Q						
US Army/ USMC Developmental Testing		-----	----2Q						
USMC Operational Assesment		4Q-----	-----	----2Q					
Milestone C/ Low Rate Initial Production Decision			4Q						
US Army/USMC Developmental Testing			2Q						
Resupply Vehicle/Resupply Trailer System Demonstration			2Q						
LRIP Guided Multiple Launch Rocket System Decision			4Q						
LRIP GMLRS				1Q----	-----	-----4Q			
LRIP Launcher Delivery				3Q					
USMC Operational Testing				4Q-----	---1Q				
Interim Capability					2Q---	-----	-----3Q		
Full Rate Production Decision						1Q			
Initial Operational Capability							3Q		
Full Operational Capability								3Q	

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems					C3098 Fire Support Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	11.224	15.828	10.232	14.047	14.156	9.081	Cont	Cont
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 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.276	0.285						
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. Funding for this program in FY02 and FY03 was provided under Project C1901 within this PE.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.144	1.756						
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 for the Meteorological Measuring System (MMS) and develop Electronic Meteorological Theodolite (EMT) capability . Funding for this program in FY02 and FY03 was provided under Project C1901 within this PE.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.731	1.130						
RDT&E Articles Qty										
Fire Support Mods - 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.										

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME	
RDT&E, N/BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems			C3098 Fire Support Systems	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.698	4.765	
RDT&E Articles Qty					
<p>Mortar Ballistic Computer (MBC): Integration effort of Government-Furnished Equipment (GFE) software with Commercial Off-The-Shelf (COTS)/Non-Developmental Item (NDI) hardware platform. Prepare for and conduct combined Developmental Testing (DT) and Operational Testing to include Live Fire User Evaluation. Conduct Interim Progress Review (IPR). Prepare for Milestone C decision. Funding for this program in FY03 was provided under Project C1901 within this PE.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.949	0.000	
RDT&E Articles Qty					
<p>AN/GVS-5 Replacement (AEROS): Engineering and programmatic support as well as performing an Operational Test and Evaluation (OT&E) on the AEROS system. The funding for the OT&E effort encompasses the test itself and all associated personnel and TAD costs to support the test. Funding for this program in FY02 and FY03 was provided under Project C1901 within this PE.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.360	
RDT&E Articles Qty					
<p>AN/GVS-5 Replacement (AEROS): 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 the Enhanced Target Acquisition and Location System (ETALS) in the AEROS. ETALS is a Science and Technology (S&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 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	3.605	0.000	
RDT&E Articles Qty					
<p>Expeditionary Fire Support System (EFSS): Program support. Conduct analyses, studies and life-cycle cost estimates.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	7.254	
RDT&E Articles Qty					
<p>Expeditionary Fire Support System (EFSS) - Short Term (ST) and Long Term (LT): Conduct comparative assessments of competing designs and conduct system design review to finalize system performance specification.</p>					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	2.821	0.278	
RDT&E Articles Qty					
<p>Improved Position Azimuth Determination System (IPADS): Program support, contractor design effort, and the procurement of systems for developmental testing and system integration. Development effort in support of the Milestone C decision.</p>					
(U) Total \$	0.000	0.000	11.224	15.828	

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EXHIBIT R-2a, RDT&E Project Justification					DATE:						
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME				
RDT&E, N/BA-7 Operational Sys Dev					0206623M Marine Corps Ground Combat/Supporting Arms Systems		C3098 Fire Support Systems				
(U) PROJECT CHANGE SUMMARY:					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>			
(U) FY 2003 President's Budget:					0.000	0.000	0.000	0.000			
(U) Adjustments from the President's Budget:											
(U) Congressional/OSD Program Reductions							-0.602	-0.653			
(U) Congressional Rescissions											
(U) Congressional Increases											
(U) Reprogrammings							11.826	16.481			
(U) SBIR/STTR Transfer											
(U) Minor Affordability Adjustment											
(U) FY 2004 President's Budget:					0.000	0.000	11.224	15.828			
CHANGE SUMMARY EXPLANATION:											
(U) Funding: This project was created due to the realignment of programs within the Marine Corps.											
(U) Schedule: Not Applicable.											
(U) Technical: Not Applicable.											
(U) C. OTHER PROGRAM FUNDING SUMMARY:											
	<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
	PMC BLI#493000 Night Vision Eq (AEROS)	0.000	0.000	0.000	15.860	19.957	20.684	1.310	0.000	0.000	57.811
	PMC BLI# 473300 Fire Supp Sys (IPADS)	0.000	0.000	0.000	12.668	0.310	0.000	0.000	0.000	0.000	12.978
	PMC BLI# 473300 FSS (Mortar Ballistic Computer)	0.000	0.000	0.000	0.000	3.490	1.938	0.000	0.000	0.000	5.428
	PMC BLI# 206400 Expeditionary Fire Support Sys	0.000	0.000	0.000	0.000	2.717	6.356	6.358	0.000	0.000	15.431
	PMC BLI# 220900 Mod Kits IWS (Fire Supp Mod Line)	0.000	0.993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.993
	PMC BLI# 206300 Mod Kits AFS (Fire Supp Mod Line)	0.000	0.000	2.089	2.472	2.601	4.242	4.342	4.447	Continuing	Continuing
	PMC BLI#646800 First Dest Transp (AEROS)	0.000	0.000	0.000	0.026	0.033	0.034	0.018	0.000	0.000	0.111
	PMC BLI# 220900 Mod Kits IWS (Theodolites)	0.000	1.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.162
	PMC BLI# 206300 Mod Kits AFS (PIAFS)	0.000	0.000	0.000	2.410	0.410	0.200	0.000	0.000	0.000	3.020
(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. Modification covers safety, reliability, and technology up-grades to meet 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:											

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Exhibit R-3 Cost Analysis											DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems				C3098 Fire Support Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
PRODUCT DEVELOPMENT			SEE BELOW												
AN/GVS-5 Replacement	RCP	MKI Woodbridge, VA	0.000					0.050	1Q04			Cont.	Cont.		
EFSS	RCP	TBD	0.000							1.950	TBD	Cont.	Cont.		
EFSS	VAR	TBD	0.000							0.776	TBD	Cont.	Cont.		
Fire Spt Mods	MIPR	USArmy CECOM, Ft Monmouth NJ	0.403									0.000	0.403		
Fire Spt Mods	RCP	Smith Industries, Grand Rapids, MI						0.400	1Q04	0.800	1Q05	Cont.	Cont.		
Fire Spt Mods - Fielded Sys Readiness	VAR	TBD						0.200	TBD	0.367	TBD	Cont.	Cont.		
IPADS	RCP	TBD						1.674	TBD			Cont.	Cont.		
MBC	VAR	VARIOUS	0.000					0.250		1.900		Cont.	Cont.		
Subtotal Product Dev			0.403	0.000		0.000		2.574		5.793		Cont.	Cont.		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
PROGRAM SUPPORT			SEE BELOW												
AN/GVS-5 Replacement	WR	MCSC, Quantico, VA	0.000					0.249	2Q04			Cont.	Cont.		
AN/GVS-5 Replacement	RCP	BAEST, Stafford, VA	0.000					0.450	1Q04	0.360	1Q05	Cont.	Cont.		
AN/GVS-5 Replacement	MIPR	Marine Det, Ft Sill, OK						0.015	1Q04			Cont.	Cont.		
EFSS	RCP	TBD	0.000					1.605	TBD	0.777	TBD	Cont.	Cont.		
EFSS	VAR	TBD								0.900	TBD	Cont.	Cont.		
Fam Artillery Munitions	WR/RCP	BAEST, Stafford, VA						0.054	1Q04	0.060	1Q05	Cont.	Cont.		
Fire Spt Mods	WR/RCP	BAEST, Stafford, VA	1.046					0.400	1Q04	0.400	1Q05	Cont.	Cont.		
Fire Spt Mods - Fielded Sys Readiness	VAR	TBD						0.161	TBD	0.253	TBD	Cont.	Cont.		
IPADS	WR	MCSC, Quantico, VA						0.157	2Q04			Cont.	Cont.		
MBC	RCP	BAEST, Stafford, VA	0.000					0.676	TBD	0.819	TBD	Cont.	Cont.		
Subtotal Support			1.046	0.000		0.000		3.767		3.569			8.382		
Remarks:															

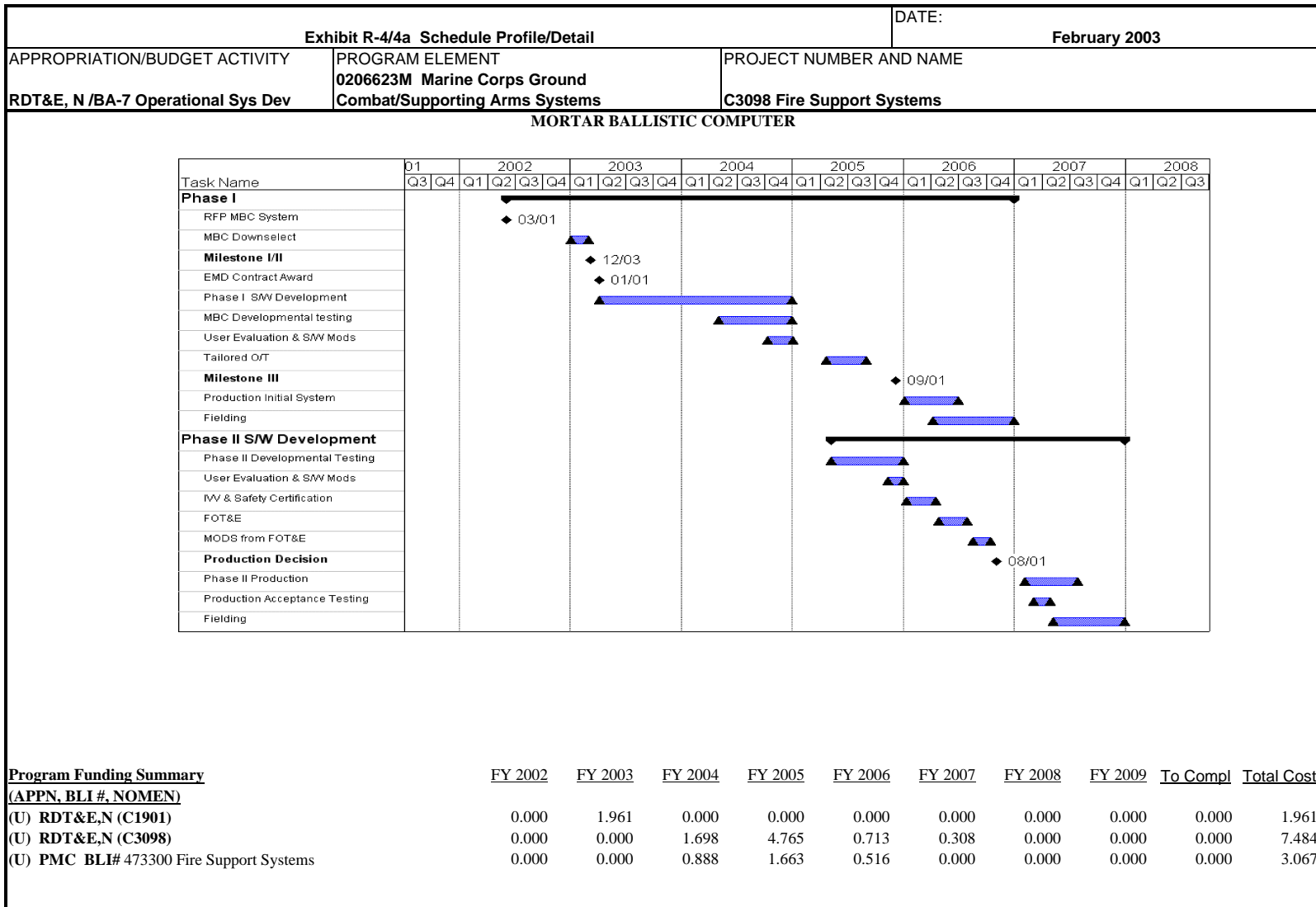
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Exhibit R-3 Cost Analysis											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems				C3098 Fire Support Systems							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E		SEE BELOW										Cont.	Cont.	
AN/GVS-5 Replacement	WR	MCOTEA, Quantico, VA	0.000					0.185	2Q04			Cont.	Cont.	
EFSS	VAR	TBD								0.951	TBD	Cont.	Cont.	
Fam Artillery Munitions	WR/RCP	NSWC, Crane, IN						0.222	2Q04	0.225	2Q05	Cont.	Cont.	
Fire Spt Mods	WR	MCOTEA, Quantico, VA	0.025							0.200	2Q05	Cont.	Cont.	
Fire Spt Mods - Fielded Sys Readiness	VAR	TBD						0.170	TBD	0.300	TBD	Cont.	Cont.	
IPADS	WR	MCOTEA, Quantico, VA						0.195	2Q04			Cont.	Cont.	
MBC	WR	VARIOUS	0.000					0.522	TBD	1.796	TBD	Cont.	Cont.	
Subtotal T&E			0.025	0.000		0.000		1.294		3.472		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MANAGEMENT		SEE BELOW										Cont.	Cont.	
EFSS	VAR	TBD						2.000	TBD	0.900	TBD	Cont.	Cont.	
EFSS	VAR	TBD								1.000	TBD	Cont.	Cont.	
Fire Supt Mods	WR	MCSC, Quantico, VA	0.582					0.344	2Q04	0.356	2Q05	Cont.	Cont.	
Fire Spt Mods - Fielded Sys Readiness	RCP	BAEST, Stafford, VA						0.200	1Q04	0.210	1Q05	Cont.	Cont.	
IPADS	WR	MCSC, Quantico, VA						0.795	2Q04	0.278	2Q05	Cont.	Cont.	
MBC	WR	MCSC, Quantico VA	0.000					0.250	TBD	0.250	TBD	Cont.	Cont.	
Subtotal Management			0.582	0.000		0.000		3.589		2.994		Cont.	Cont.	
Remarks:														
Total Cost			0.582	0.000		0.000		11.224		15.828		Cont.	Cont.	

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Exhibit R-4/4a Schedule Profile/Detail						DATE: February 2003															
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																	
AEROS PROGRAM AN/GVS-5 Replacement																					
Task Name	2002		2003		2004		2005		2006		2007		2008								
Market Research	Gtr 1	Gtr 2	Gtr 3	Gtr 4	Gtr 1	Gtr 2	Gtr 3	Gtr 4	Gtr 1	Gtr 2	Gtr 3	Gtr 4	Gtr 1	Gtr 2	Gtr 3						
Re-Work And Approval Of AEROS ORD	■																				
Milestone B			◆ 6/3																		
Issue Draft Request For Proposal (RFP)			◆ 7/1																		
Pre-Solicitation Conference			◆ 8/15																		
Issue Final RFP			◆ 10/1																		
Source Selection, Including User Evaluation			■																		
Award Firm, Fixed Price Contract With Production Options					◆ 5/26																
Vendor Lead Time To Produce Operational Test (OT) Articles				■																	
Operational Testing (OT)																					
Milestone C / Fielding Decision						◆ 7/1															
Exercise Production Option								◆ 10/4													
Vendor Lead Time To Start Production								■													
Production																					
Initial Operational Capability (IOC)										◆ 3/31											
Full Operational Capability (FOC)														◆ 6/30							
Program Funding Summary																					
(APPN, BLI #, NOMEN)												FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) RDT&E,N (C1901)												0.823	1.757	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.580
(U) RDT&E,N (C3098)												0.000	0.000	0.949	0.360	0.181	0.000	0.000	0.000	0.000	1.490
(U) PMC, BLI# 493000 Nt Vision Eq												0.000	0.000	0.000	15.860	19.957	20.684	1.310	0.000	0.000	57.811
(U) PMC, BLI# 646800 1st Destination Transport.												0.000	0.000	0.000	0.026	0.033	0.034	0.018	0.000	0.000	0.111
(U) PMC Spares, BLI# 700000 AEROS (GVS-5 Re)												0.000	0.000	0.000	0.754	0.922	0.937	0.000	0.000	0.000	2.613

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Exhibit R-4/4a Schedule Profile/Detail						DATE: February 2003			
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							
MBC SCHEDULE DETAIL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Phase I	2Q								
RFP Mortar Ballistic Computer (MBC)System	2Q								
MBC Down Select	4Q								
Milestone I/II		1Q							
EMD Contract Award		1Q							
Phase I Software (SW) Development		1Q							
MBC Developmental Testing			2Q						
User Evaluation & SW Mods			3Q						
Tailored Operational Testing (OT)				1Q					
Milestone III				4Q					
Production Initial System				4Q					
Fielding					1Q				
Phase II - SW Development				1Q					
Phase II Developmental Testing				1Q					
User Evaluation & SW Mods				4Q					
IW & Safety Certification					1Q				
FOT&E					2Q				
Mods from FOT&E					3Q				
Production Decision					4Q				
Phase II Production						1Q			
Production Acceptance Testing						1Q			
Fielding						2Q			

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Exhibit R-4/4a Schedule Profile/Detail													DATE: February 2003									
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														
IMPROVED POSITIONING AZIMUTH DETERMINING SYSTEM																						
ID	Task Name	2003			2004				2005				2006				2007					
		Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
1	Prepare Contract Documentation			■																		
2	RFP Release				■																	
3	Source Selection				■																	
4	Exercise EMD Contract Option					■																
5	Developmental Testing						■															
6	Fleet Evaluation							■														
7	Milestone C								■	10/6												
8	Exercise Contract Production Option								■													
9	Production									■	■											
10	IOC (I MEF)											■										

<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
(U) RDT&E,N (C3098)	0.000	0.000	2.821	0.278	0.011	0.000	0.000	0.000	0.000	3.110
(U) PMC BLI# 473300	0.000	0.000	0.000	12.668	0.310	0.000	0.000	0.000	0.000	12.978
(U) PMC Spares BLI# 700000 IPADS	0.000	0.000	0.000	0.143	0.516	0.000	0.000	0.000	0.000	0.659

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems					C4002 Reconnaissance & Amphibious Systems & Support Equipment				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	2.574	3.453	1.228	0.554	0.473	0.487	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
The Family of Raids 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 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.395	0.361						
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. Funding for this program in FY03 is provided under Project C1901 within this PE.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.244	0.249						
RDT&E Articles Qty										
Family of Small Craft: Conduct engineering analysis and exploration of enhancements. Integration testing for a new navigation suite. Marine Corps Programs Department (MCPD) Fallbrook support for fault analysis and fault isolation as needed. Past years' efforts have resulted in significant improvements to safety of the Riverine Assault Craft (RAC). Funding for this program in FY02 and FY03 is provided under Project C1901 within this PE.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.935	2.843						
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. Funding for this program in FY03 is provided under Project C1901 within this PE.										
(U) Total \$	0.000	0.000	0.000	2.574	3.453					

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206623M Marine Corps Ground Combat/Supporting Arms Systems					C4002 Reconnaissance & Amphibious Systems & Support Equipment				
(U) PROJECT CHANGE SUMMARY:										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>						
(U) FY 2003 President's Budget:	0.000	0.000	0.000	0.000						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions			-0.097	-0.101						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings			2.671	3.554						
(U) Small Business Innovation Research Transfer										
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	0.000	0.000	2.574	3.453						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change is due to the realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
PMC BLI #643400 Amphibious Raid Equipment	2.267	21.835	21.404	30.394	18.968	6.696	3.458	3.521	0.000	108.543
(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:										
Dec 03, Dec 04	TBD	Hardware Development								
Oct 03, Oct 04	Panama City, FL	Coastal Systems Station, system engineering in support of underwater reconnaissance								
Nov 03, Nov 04	Natick, MA	Natick Labs, system engineering								

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Exhibit R-3 Cost Analysis											DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 Operational Sys Dev			0206623M Marine Corps Ground Combat/Supporting Arms Systems					C4002 Reconnaissance & Amphibious Systems & Support Equipment							
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Hardware development	TBD	TBD						1.103	12/03	1.899	12/04	Cont.	Cont.		
Systems Engineering	WR	CSS, Panama City, FL						0.435	10/03	0.430	10/04	Cont.	Cont.		
Systems Engineering	WR	Natick Labs, Natick, MA						0.436	11/03	0.431	11/04	Cont.	Cont.		
Subtotal Product Development			0.000	0.000		0.000		1.974		2.760		Cont.	Cont.		
Remarks:															
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Integrated Logistics Support	RCP	BAE Inc, Stafford, VA						0.200	10/03	0.200	10/04	Cont.	Cont.		
Subtotal Support			0.000	0.000		0.000		0.200		0.200		Cont.	Cont.		
Remarks:															
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Testing/Eval	RCP	TBD						0.150	12/03	0.150	12/04	Cont.	Cont.		
Operational T&E	WR	MCOTE A, Quantico, VA						0.100	11/03	0.100	12/04	Cont.	Cont.		
Subtotal T&E			0.000	0.000		0.000		0.250		0.250		Cont.	Cont.		
Remarks:															
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Management	TBD	MARCORSYSCOM, Quantico, VA						0.150	12/03	0.243	12/04	Cont.	Cont.		
Subtotal Management				0.000		0.000		0.150		0.243		Cont.	Cont.		
Remarks:															
Total Cost			0.000	0.000		0.000		2.574		3.453		Cont.	Cont.		

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Exhibit R-4/4a Schedule Profile/Detail										DATE:									
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME													
RDT&E, N/BA-7 Operational Sys Dev		0206623M Marine Corps Ground Combat/Supporting Arms Systems				C4002 Reconnaissance & Amphibious Systems & Support Equipment													
		February 2003																	
ID	Task Name	2003		2004		2005		2006		2007		2008		2009		2010		2011	
		3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Underwater Reconnaissance Capability	[Redacted]																	
2	Program Initiation	[Redacted]																	
3		[Redacted]																	
4	Diver Propulsion Device	[Redacted]																	
5	Pre Milestone B	[Redacted]																	
6	Milestone B	[Redacted]																	
7	R&D	[Redacted]																	
8	Milestone C Decision	[Redacted]																	
9	PMC	[Redacted]																	
10	Production of 92 units	[Redacted]																	
11	Production of 72	[Redacted]																	
12		[Redacted]																	
13	Tactical Hydrographic Survey Equipment	[Redacted]																	
14	Pre-Milestone B	[Redacted]																	
15	Milestone B	[Redacted]																	
16	R&D	[Redacted]																	
17	Milestone C Decision	[Redacted]																	
18	Follow-on Operational Testing	[Redacted]																	
19	Production Decision	[Redacted]																	
20	Production	[Redacted]																	
21		[Redacted]																	
22	O&M, MC	[Redacted]																	

<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
<u>(U) RDT&E,N C4002 URC</u>	0.000	0.000	1.935	2.843	0.725	0.055	0	0	0.000	5.558
<u>(U) PMC, BLI# 643400 URC</u>	0.000	0.000	0.000	4.800	7.726	3.219	0	0	0.000	15.745

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Systems Development	PROGRAM ELEMENT NUMBER AND NAME 026623M Marine Corps Ground Combat/Support Arms Sys				PROJECT NUMBER AND NAME C9277 Target Location Designator					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	1.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.299
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>The Marine Corps Systems Command will develop and test the Naval Surface Fire Support (NSFS) capability within the Target Hand-Off System (THS), incorporate additional Close Air Support features, enhance system interoperability by accelerating level of Common Operating Environment from V to VII. Target Location Development Hand-off System (TLDHS) will provide increased functionality to interoperate between integrated systems and develop follow-on releases of THS software to maintain compatibility with follow-on fire support applications.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost		1.299								
RDT&E Articles Qty										
TLDHS: Develop, test and integrate systems.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost										
RDT&E Articles Qty										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost										
RDT&E Articles Qty										
(U) Total \$	0.000	1.299	0.000	0.000						

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N /BA-7 Operational Systems Development	026623M Marine Corps Ground Combat/Support Arms Sys				C9277 Target Location Designator						
	FY2002	FY2003	FY2004	FY2005							
(U) Project Change Summary											
(U) FY 2003 President's Budget:	0.000	0.000	0.000	0.000							
(U) Adjustments from the President's Budget:											
(U) Congressional/OSD Program Reductions		-0.031									
(U) Congressional Rescissions											
(U) Congressional Increases		1.330									
(U) Reprogrammings											
(U) SBIR/STTR Transfer											
(U) FY 2004 President's Budget:	0.000	1.299	0.000	0.000							
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. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>	
PMC BLI# 473300 TLDHS	3.584	34.134	28.444	0.000	0.000	0.000	0.000	0.000	0.000	66.162	
(U) Related RDT&E: Not Applicable.											
(U) D. ACQUISITION STRATEGY:											
(U) TLDHS: Funds applied to the ACS/Synetics, Incorporated contract for software development and system integration.											
(U) E. MAJOR PERFORMERS:											
FY 03 ACS/SYNETICS, King George, VA. Software development and integration.											
(U) SCHEDULE PROFILE:											

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	026623M Marine Corps Ground Combat/Supporting Arms Systems				C9278 Integrated Digital Camera Riflescope					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	1.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.464
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
The Marine Corps will assess the possibility of integrating a digital camera into a rifle scope. The purpose of this system will be to increase objectivity of user evaluations during testing of optic systems. The test evaluator will be able to "see" what the operator sees and determine if the operator assessment of the systems accurately reflects the capability offered by the optic or reflects the need for additional training in the use of the optic to complete an objective assessment.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost		1.464								
RDT&E Articles Qty										
Funding is in excess of what is required to accomplish this effort. The estimated cost to develop this effort is \$1K.										
(U) Total \$	0.000	1.464	0.000	0.000						

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <p align="right">February 2003</p>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	026623M Marine Corps Ground Combat/Supporting Arms Systems	C9278 Integrated Digital Camera Riflescope
(U) Project Change Summary	FY2002	FY2003
(U) FY 2003 President's Budget:	0.000	0.000
(U) Adjustments from the President's Budget:		
(U) Congressional/OSD Program Reductions		
(U) Congressional Rescissions		
(U) Congressional Increases		1.464
(U) Reprogrammings		
(U) SBIR/STTR Transfer		
(U) FY 2004 President's Budget:	0.000	1.464
CHANGE SUMMARY EXPLANATION:		
(U) Funding: See Above.		
(U) Schedule: Not Applicable.		
(U) Technical: Not Applicable.		
(U) C. OTHER PROGRAM FUNDING SUMMARY:		
Not applicable.		
(U) Related RDT&E:		
Not Applicable.		
(U) D. ACQUISITION STRATEGY:		
The funds appropriated are in excess of what is required to accomplish this effort. This is a minor development that can be accomplished by the manufacturer at an estimated \$1K.		
(U) E. MAJOR PERFORMERS:		
FY 03 TBD		
(U) SCHEDULE PROFILE:		
TBD		

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	026623M Marine Corps Ground Combat/Supporting Arms Systems				C9279 Body Armor Upgrade					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.975	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.975
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>This program tests body armor configuration in use by British Special Air Service (SAS) troops to demonstrate its effectiveness against blunt trauma, and specifically against backface deformation. When a bullet is defeated by body armor a high level of energy on the human body is known as blunt trauma. In many cases, blunt trauma can cause serious injury or even prove fatal. The body armor upgrade protects the wearer from the effects of blunt trauma by absorbing energy and distributing forces over a much larger area.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost		0.975								
RDT&E Articles Qty										
Develop, test and investigate Body Armor systems.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost										
RDT&E Articles Qty										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost										
RDT&E Articles Qty										
(U) Total \$	0.000	0.975	0.000	0.000						

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EXHIBIT R-2a, RDT&E Project Justification					DATE:										
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev					026623M Marine Corps Ground Combat/Supporting Arms Systems					C9279 Body Armor Upgrade					
(U) Project Change Summary					FY2002	FY2003	FY2004	FY2005							
(U) FY 2003 President's Budget:					0.000	0.000	0.000	0.000							
(U) Adjustments from the President's Budget:															
(U) Congressional /OSD Reductions										-0.025					
(U) Congressional Rescissions															
(U) Congressional Increases										1.000					
(U) Reprogrammings															
(U) SBIR/STTR Transfer															
(U) OSD Mark															
(U) FY 2004 President's Budget:					0.000	0.975	0.000	0.000							
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. & Name</u>		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>				
PE# 0206623M Project# C2503 Initial Issue		1.178	0.77	1.039	1.062	4.082	4.137	5.371	6.126	Continuing	Continuing				
(U) Related RDT&E: 1 0206623M C2503															
(U) D. ACQUISITION STRATEGY:															
Acquisition Strategy is to modify non-developmental items (NDI) and adopt Commercial-Off-The-Shelf (COTS) items.															
(U) E. MAJOR PERFORMERS:															
U.S. Army Natick Research, Development and Engineering Center, Natick, Mass.															
(U) SCHEDULE PROFILE:															
Not Applicable.															

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7 Operational Sys Dev			PROGRAM ELEMENT (PE) NAME AND NO. 026624M Marine Corps Combat Services Support							
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	7.718	20.516	19.723	10.132	8.363	6.649	3.530	3.314	Cont	Cont
C0076 Medium Tactical Vehicle Replacement (MTVR)	1.453	0.967	1.327	1.966	0.704	0.000	0.000	0.000	0.000	6.417
C0201 Logistical Vehicle System Replacement (LVSR)	0.000	6.764	8.972	6.146	5.176	4.424	0.397	0.173	0.000	32.052
C2316 Combat Service Support Engineering Equipment	5.510	10.004	6.746	0.495	0.514	0.532	0.543	0.553	0.000	24.897
C2509 Motor Transport Modernization	0.454	2.458	0.444	0.446	0.451	0.552	0.570	0.582	Cont	Cont
C2929 Testing Measuring Diagnostic Equip (TMDE) & SE	0.301	0.323	2.234	1.079	1.518	1.141	2.020	2.006	Cont	Cont
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

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N /BA-7 Operational Sys Dev

PROGRAM ELEMENT (PE) NAME AND NO.
026624M Marine Corps Combat Services Support

B. PROGRAM CHANGE SUMMARY

	FY2002	FY2003	FY2004	FY2005
(U) FY 2003 President's Budget:	8.408	21.041	11.052	6.753
(U) Adjustments from the President's Budget:				
(U) Congressional/OSD Program Reductions	-0.025	-0.525		-0.337
(U) Congressional Rescissions				
(U) Congressional Increases			4.873	
(U) Reprogrammings	-0.593		3.783	3.701
(U) SBIR/STTR Transfer	-0.072			
(U) Minor Affordability Adjustment			0.015	0.015
(U) FY 2004 President's Budget:	7.718	20.516	19.723	10.132

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 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N/BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C0076 Medium Tactical Vehicle Replacement (MTVR)					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	1.453	0.967	1.327	1.966	0.704	0.000	0.000	0.000	0.000	6.417
RDT&E Articles Qty			18							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
This project includes funding for the Medium Tactical Vehicle Replacement (MTVR) Program which will determine the replacement vehicle for the Medium 5-ton fleet. The MTVR Trailer program will replace the aging fleet of trailers with trailers that will match the MTVR's performance over its mission profile. The MTVR trailer will provide improvements in cross-country mobility, cargo capacity and types of cargo transported. The Family of Tactical Trailers (FTT) will develop the High Mobility Trailer (HMT) to support expanding Command Communications Control Computers and Intelligence (C4I) requirements.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.453	0.967	0.000	0.000						
RDT&E Articles Qty										
MTVR: Variant prototype development and Operational Testing.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.187	0.000						
RDT&E Articles Qty										
FTT: Development of tactical trailers.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.140	1.966						
RDT&E Articles Qty			18							
MTVR TRAILER: Development of the MTVR Trailers and Developmental Testing.										
(U) Total \$	1.453	0.967	1.327	1.966						

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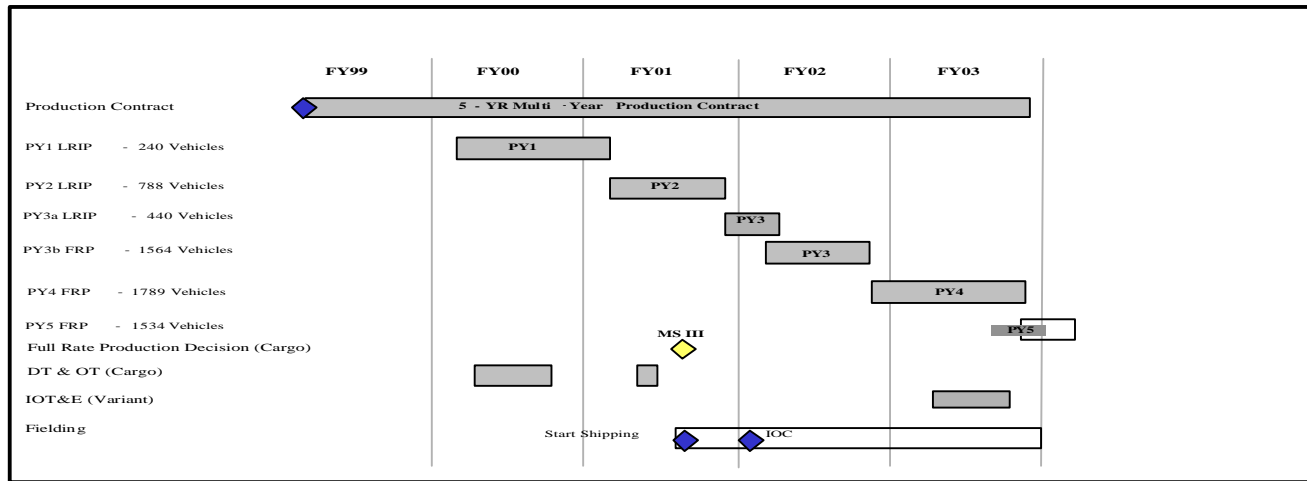
EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C0076 Medium Tactical Vehicle Replacement (MTVR)					
(U) Project Change Summary	FY2002	FY2003	FY 2004	FY 2005						
(U) FY2003 President's Budget	1.993	0.994	0.000	0.000						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Redu	-0.005	-0.027	-0.030	-0.042						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	-0.512		1.357	2.008						
(U) SBIR/STTR Transfer	-0.023									
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	1.453	0.967	1.327	1.966						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in FY 04 and FY05 is due to realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC Line (BLI# 509700) Fam of Tac Trlrs	0.000	0.000	0.000	2.470	12.616	25.018	29.761	21.099	Continuing	Continuing
(U) PMC Line (BLI# 508800) MTVR	291.890	338.315	4.611	0.000	0.000	0.000	0.000	0.000	0.000	1163.500
(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 Communication Systems									
(U) D. ACQUISITION STRATEGY:										
Acquisition Plan that addresses the total program fielding. The Contractor will deliver 5,666 vehicles on the base contract, with 2,502 vehicles included as options. There are four MTVR configurations, which include standard cargo, extra long wheel base cargo, dump and wrecker. The Acquisition Strategy includes Contractor Logistics Support (CLS) after fielding.										
MTVR Trailers: The MTVR trailer program will award a competitive contract to develop and produce the MTVR trailers. It is anticipated that the replacement for the M149 Potable Water Tank Trailer and M105 1 1/2 Ton Cargo Trailer will be new designs, while the M353 3 1/2 Ton General Purpose Trailer will be a remanufacture, maximizing the use of common components across the three platforms. The trailers will be designed for and tested with the MTVR in order to ensure compatibility as a system.										
Family of Tactical Trailers: The Family of Tactical Trailers will award a competitive contract to develop and produce the High Mobility Trailers (HMT).										
(U) E. MAJOR PERFORMERS:										
FY02 - Oshkosh Truck Corporation, Oshkosh, WI. Develop the MTVR variants (dump/wrecker) Feb 02.										
- Marine Corps Systems Command, Quantico, VA. Program Management Support, Oct 01.										
FY03 - MCOTEA, Quantico, VA. Test activity for the dump/wrecker variants, Dec 02.										
FY04-08 - TBD (Competitive contract)										

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Exhibit R-3 Cost Analysis											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Services Spt				C0076 Medium Tactical Veh Replacement (MTVR)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product development	RCP	MCSC, Quantico, VA	0.000	0.164	05/02			0.950	12/03	0.900	12/04	0.123	2.137	2.137
Product development	RCP	NSWC, Carderock, MD		0.355	02/02			0.190	12/03				0.545	0.545
Subtotal Product Dev			0.000	0.519				1.140		0.900		0.123	2.682	2.682
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Support														
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval	MIPR	Aberdeen Test Center, MD	0.000	0.106	01/02							0.000	0.106	0.106
Developmental Test & Eval	RCP	MCSC, Quantico, VA	0.000							0.958	01/05	0.000	0.958	0.958
Operational Test & Eval	RCP	MCSC, Quantico, VA				0.467	12/02					0.000	0.467	0.467
Developmental Test & Eval	WR/RCP	MCOTEA, Quantico, VA				0.500	11/02					0.000	0.500	0.500
Operational Test & Eval	WR/RCP	MCOTEA, Quantico, VA										0.486	0.500	0.500
Subtotal T&E			0.000	0.106		0.967				0.958		0.486	2.517	2.531
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Mngmnt	WR	MCSC Quantico, VA	0.331	0.828	10/01			0.131	12/03	0.108	10/04	0.095	1.493	1.493
Program Mngmnt Suppt	RCP	MCSC Quantico, VA						0.056	12/03			0.000	0.056	0.056
Subtotal Management			0.331	0.828				0.187		0.108		0.095	1.549	1.549
Remarks:														
Total Cost			0.331	1.453		0.967		1.327		1.966		0.704	6.748	6.762

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C0076 Medium Tactical Veh Replacement (MTVR)

Medium Tactical Vehicle Replacement Schedule

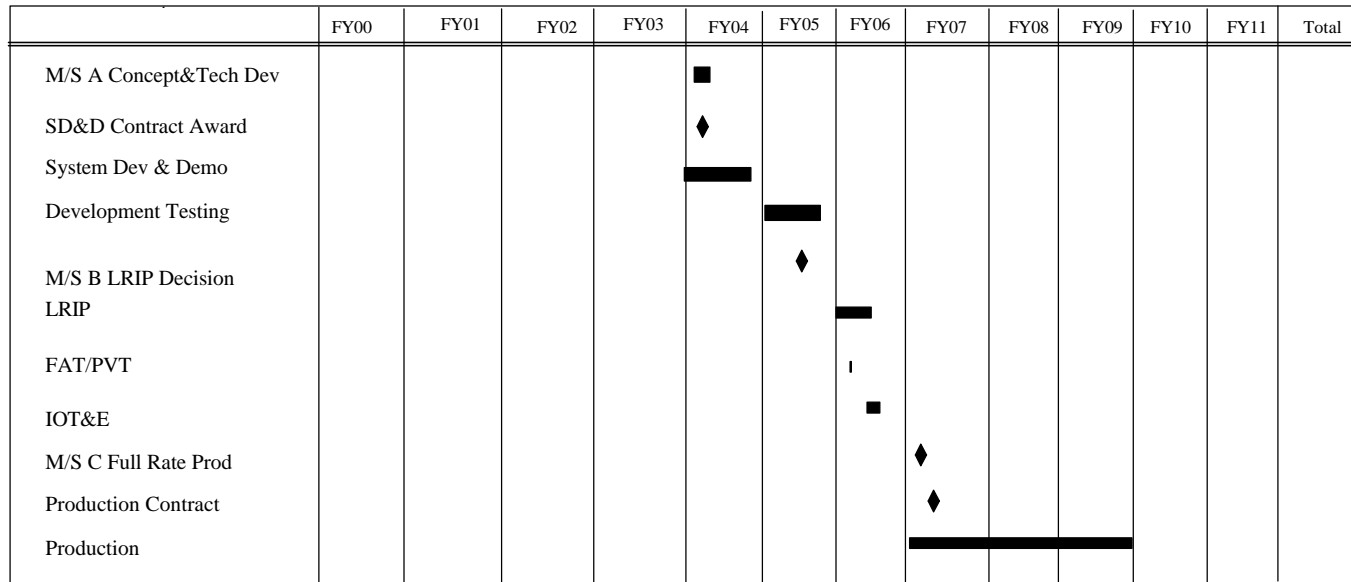


<u>Program Funding Summary</u> <u>(APPN, BLI #, NOMEN)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(U) RDT&E,N</u>	1.453	0.967	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.420
<u>(U) PMC, BLI# 508800 MTVR</u>	291.890	338.315	4.611	0.000	0.000	0.000	0.000	0.000	0.000	634.816

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Exhibit R-4/4a Schedule Profile/Detail			DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RD&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C0076 Medium Tactical Veh Replacement (MTVR)	

MTVR Trailer Program Schedule



<u>Program</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI</u>										
<u>(U) RD&E,N - MTVR Trailers</u>	0.000	0.000	1.140	1.966	0.704	0.000	0.000	0.000	0.000	3.810
<u>(U) RD&E,N - Family of Tactical Trailers</u>	0.000	0.000	0.187	0.000	0.000	0.000	0.000	0.000	0.000	0.187
<u>(U) PMC, BLI# 509700 Fam of Tact Trailers</u>	0.000	0.000	0.000	2.470	2.806	3.357	3.585	3.337	Continuing	Continuing
<u>(U) PMC, BLI# 509700 MTVR Trailers</u>	0.000	0.000	0.000	0.000	9.810	21.661	26.176	17.762	Continuing	Continuing

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C0201 Logistical Vehicle System Replacement (LVSR)					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	Cost to Complete	Total Program
Project Cost	0.000	6.764	8.972	6.146	5.176	4.424	0.397	0.173	0.000	32.052
RDT&E Articles Qty				6						
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
The Logistical Vehicle System Replacement (LVSR) program will determine the replacement vehicle for the Logistical Vehicle System (LVS). This vehicle will increase mobility, maintainability, and reliability for the heavy fleet, while increasing off-road payload. 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.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.415	0.000	0.000						
RDT&E Articles Qty										
LVSR: Modeling and Simulation.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.400	0.000	0.000						
RDT&E Articles Qty										
LVSR: Engineering and Technical support for base and variant development.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.000	0.451	0.534						
RDT&E Articles Qty										
LVSR: Source Selection and Contracting costs. Provide contractor support.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.230	0.253	0.080						
RDT&E Articles Qty										
LVSR: Program management and support.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.500	0.000	0.000						
RDT&E Articles Qty										
LVSR: Test plans.										

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME		
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support		C0201 Logistical Vehicle System Replacement (LVSR)		
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	2.219	0.000	0.000	
RDT&E Articles Qty					
LVSR: Forward financing in support of LVSR Prototype development in FY 04.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	7.870	3.917	
RDT&E Articles Qty				6	
LVSR: Obtain prototypes. Conduct system development and demonstration.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.256	
RDT&E Articles Qty					
LVSR: Initiate Developmental Test and Evaluation.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.243	0.193	
RDT&E Articles Qty					
FRC: Provide Contractor Support					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.155	0.268	
RDT&E Articles Qty					
FRC: Provide Program Management and support.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.513	
RDT&E Articles Qty					
FRC: Initiate system Development and Demonstration.					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.000	0.385	
RDT&E Articles Qty					
FRC: Initiate Operation Test and Evaluation.					
(U) Total \$	0.000	0.000	6.764	8.972	6.146

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C0201 Logistical Vehicle System Replacement (LVSR)					
(U) Project Change Summary	FY2002	FY2003	FY2004	FY2005						
(U) FY2003 President's Budget	0.000	8.949	9.950	4.964						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reductions		-0.185	-0.279	-0.211						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings		-2.000	-0.699	1.393						
(U) SBIR/STTR Transfer										
(U) Minor Affordability Adjustment										
(U) FY 2004 President's Budget:	0.000	6.764	8.972	6.146						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in funding for FY03, FY04 and FY05 is due to the realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) PMC Line (BLI# 509300) FlatRack	0.000	0.000	0.000	0.000	8.495	22.066	22.200	0.000	0.000	52.761
(U) PMC Line (BLI# 509300) LVSR	0.000	0.000	0.000	0.000	60.185	93.570	96.613	56.897	126.298	433.563
(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) consists of a common Front Power Unit (FPU) that can be coupled to one of a variety of powered Rear Body Units (RBUs) to form a complete system. These three systems are referred to as the cargo, fifth wheel, and wrecker.										
(U) E. MAJOR PERFORMERS:										
Jul '03	Nevada Automotive Test Center (NATC)	Modeling and Simulation								
Nov '02	Nevada Automotive Test Center (NATC)	Engineering Support								
Nov '02	Sverdrup	Program Support								
Jul '03	Nevada Automotive Test Center (NATC)	Complete Test Plans								

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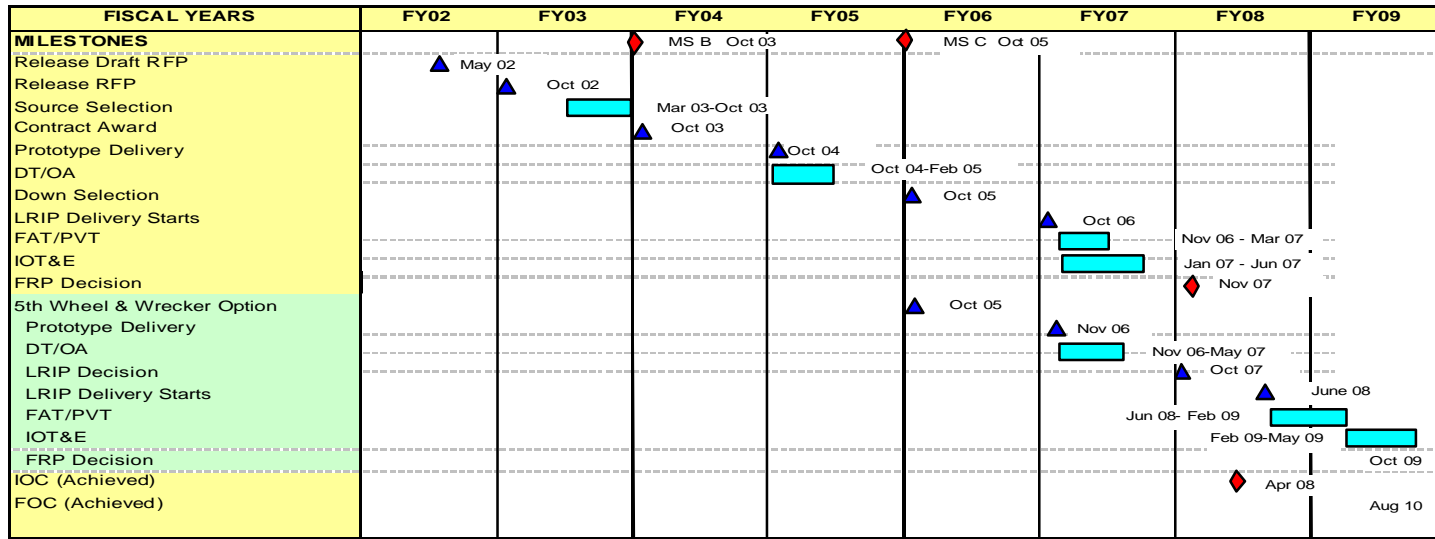
Exhibit R-3 Cost Analysis											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Services Spt				C0201 Logistical Vehicle System Replacement (LVSr)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Source Selection	RCP	MCSC Quantico, VA	0.000			1.000	07/03					0.000	1.000	1.000
Prototypes Dev Engineering	RCP	TBD	0.000			0.400	11/02	7.870	12/02	4.430	10/04	6.350	19.050	19.050
Modeling and Simulation	RCP	NATC Carson City, NV	0.000			1.415	07/03					0.000	1.415	1.415
Subtotal Product Dev			0.000			2.815		7.870		4.430		6.350	21.465	21.465
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Forward Finance Prototypes			0.000			2.219	01/03					1.500	3.719	3.719
Subtotal Support			0.000			2.219						1.500	3.719	3.719
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval	TBD	NATC Carson City, NV	0.000			0.500	11/02			0.256	03/05	0.500	1.256	1.256
Operational Test & Eval	TBD	NATC Carson City, NV	0.000							0.385	03/05	0.500	0.885	0.885
Subtotal T&E			0.000			0.500				0.641		1.000	2.141	2.141
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Suppt	RCP	Sverdrup, Dumfries, VA	0.000			0.451	11/02	0.694	10/03	0.727	10/04	1.054	2.926	2.926
Program Mngmnt Suppt	WR	MCSC Quantico, VA	0.000			0.779	11/02	0.408	10/03	0.348	10/04	0.812	2.347	2.347
Subtotal Management						1.230		1.102		1.075		1.866	5.273	5.273
Remarks:														
Total Cost				0.000		6.764		8.972		6.146		10.716	32.598	32.598

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Exhibit R-4/4a Schedule Profile/Detail DATE: February 2003

APPROPRIATION/BUDGET ACTIVITY PROGRAM ELEMENT PROJECT NUMBER AND NAME
RDT&E, N /BA 7 Operational Sys D0206624M Marine Corps Combat Services Spt C0201 Logistical Vehicle System Replacement (LVS
 Logistical Vehicle System Replacement

LVS



<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI#, NOMEN)</u>										
<u>(U) RDT&E,N (LVS</u>	0.000	6.764	8.574	4.787	5.000	4.424	0.397	0.173	0.000	30.119
<u>(U) PMC, BLI# 509300 LVS</u>	0.000	0.000	0.000	0.000	60.185	93.570	96.613	56.897	Continuing	Continuing
<u>(U) PMC, BLI# 509300 FLATRACK</u>	0.000	0.000	0.000	0.000	8.495	22.066	22.200	0.000	0.000	52.761

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Exhibit R-4/4a Schedule Profile/Detail						DATE: February 2003			
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 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Release RFP			1st qtr						
Source Selection			2nd qtr	1st qtr					
Contract Award				1st qtr					
Prototype Delivery					1st qtr				
DT/OA					1st qtr				
LRIP Delivery							1st qtr		
FAT							1st qtr		
IOT&E							1st qtr		
FRP Decision								1st qtr	
5th Wheel/Wrecker Option						1st qtr			
Prototype Delivery							1st qtr		
DT/OA							1st qtr		
LRIP Delivery								3rd qtr	
FAT								3rd qtr	
FRP Decision FY10									
FOC FY10									

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C2316 Combat Services Support Engineering Equipment					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	5.510	10.004	6.746	0.495	0.514	0.532	0.543	0.553	0.000	24.897
RDT&E Articles Qty		4								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>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.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.742	1.680	0.000	0.000						
RDT&E Articles Qty										
<p>ABV: Management support, travel, technical manuals and drawings. Support and management including obtaining safety certification from the Weapons Systems Safety Explosive Review Board (WSSERB).</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	1.400	0.000	0.000	0.000						
RDT&E Articles Qty										
<p>ABV: Developmental testing.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	2.368	7.210	0.000	0.000						
RDT&E Articles Qty										
<p>ABV: Integrated line charges, ground-marking system, weapons station, remote control kit & full width mine plow onto the modified M1 Tank Chassis. Build 3 LRIP vehicles for OT&E. One demonstrator will be used as a configuration management control vehicle for the development, tech manuals and drawings for the three LRIP vehicles.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.114	0.000	0.000						
RDT&E Articles Qty										
<p>ABV: Operational testing, live fire testing, and Reliability, Availability and Maintainability (RAM) testing of the ABV.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.340	0.000						
RDT&E Articles Qty										
<p>ABV: Conduct a Limited User Test and Operational Test & Evaluation.</p>										

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME							
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support		C2316 Combat Services Support Engineering Equipment							
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	5.952	0.000						
RDT&E Articles Qty										
<p>M1A1 Firepower Enhancement: Conduct comparative assessments of competing designs and conducted system design review to finalize system performance specification. Perform Final Integration and Prove out. Perform Engineering and Manufacturing Development (EMD) phase activities. Procure test articles, conduct developmental and operational test and evaluation, pre-production technical reviews/audits, and logistical support development/planning in planning for production. Funding for this effort in FY02 and FY03 is provided under Project C1901, PE 0206623M, MC Ground Combat/Support Arms Systems.</p>										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.454	0.495						
RDT&E Articles Qty										
<p>M1A1 Armor Mods: Continue joint participation and evaluation of prospective modifications including Component Enhancements, Advanced Fire Control Systems, Survivability Systems, Combat Identification, mobility and others. Funding for this effort in FY02 and FY03 is provided under Project C1901, PE 0206623M, MC Ground Combat/Support Arms Systems.</p>										
(U) Total \$	0.000	5.510	10.004	6.746	0.495					
(U) PROJECT CHANGE SUMMARY:										
	FY2002	FY2003	FY2004	FY2005						
(U) FY 2003 President's Budget:	5.842	10.259	0.299	0.227						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reduction:	-0.012			-0.039						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	-0.284	-0.255	6.447	0.307						
(U) SBIR/STTR Transfer	-0.036									
(U) FY 2004 President's Budget:	5.510	10.004	6.746	0.495						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in funding for FY04 and FY05 is due to the realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Compl	Total Cost
(U) PMC Line (BLI# 613300) ABV	0.000	0.000	0.000	4.634	47.901	47.957	0.000	0.000	0.000	100.492
(U) PMC (BLI#206300) Mod Kits (Tracked Veh)	1.277	3.229	2.774	3.873	3.950	4.029	4.109	4.191	Continuing	Continuing
(U) PMC (BLI#209500) M1A1 FEP	0.000	0.000	4.222	41.979	34.750	17.829	22.969	0.000	0.000	121.749
(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 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support	C2316 Combat Services Support Engineering Equipment
<p>(U) D. ACQUISITION STRATEGY:</p> <p>(U) The M1A1 MOD Program 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 requirements. M1A1 Firepower Enhancement - Competitively Awarded 2 Cost Plus Firm Fixed contracts to conduct parallel design, integration and demonstration of Non-Developmental Item (NDI) technology for the M1A1 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. M1A1 Mods 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.</p> <p>(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.</p> <p>(U) E. MAJOR PERFORMERS:</p> <p>FY02 - 09/02 TACOM/PM ABRAMS, Warren, MI-Integrate components onto the modified M1 Chassis to build the ABV Demonstrator</p> <p>FY03 - 05/03 TBD Competitive Contract to build three LRIP</p> <p>FY04 - 02/03 ATC, Aberdeen, MD-Test activity for the ABV during IOT&E</p>		

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Exhibit R-3 Cost Analysis								DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering -ABV	Various	Various	3.573	0.500	09/02	4.000	05/03					0.000	8.073	8.073
Systems Engineering -ABV	Various	Various	0.845	0.743	09/02	1.830	02/03					0.000	3.418	3.418
Systems Engineering -ABV	MIPR	NSWC, Crane, IN	0.120	0.225	09/02	0.480	02/03					0.000	0.825	0.825
Engineering/Design	MIPR	PM UGV		0.900	09/02	0.900	02/03					0.000	1.800	1.800
Prod Dev - M1A1 Firepower	RCP	DRS Tech., Inc., Torrance, CA						0.600	1Q/04			Cont.	Cont.	
Prod Dev - M1A1 Firepower	RCP	Raytheon, McKinney, TX						0.520	1Q/04			Cont.	Cont.	
PROD DEV - M1A1 Mods	RCP	Ctr Nav Anl, Alex., VA						0.057	1Q/04	0.080	1Q/05	Cont.	Cont.	
PROD DEV - M1A1 Mods	WR/RCP	Tacom, Warren, MI						0.090	1Q/04	0.165	1Q/05	Cont.	Cont.	
PROD DEV - M1A1 Mods	WR/RCP	Benet Labs, Albany NY						0.055	1Q/04	0.040	1Q/05	Cont.	Cont.	
Subtotal Product Dev			4.538	2.368		7.210		1.322		0.285		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support - ABV	RCP	BAE	0.884	0.600	09/02	0.600	12/02					0.301	2.385	2.385
Program Support - ABV	RCP	MCSC, Quantico, VA	0.511	0.502	09/02	0.280	12/02					0.225	1.518	1.518
Program Support - ABV	RCP	SVERDRUP		0.200	09/02							0.000	0.200	0.200
Program Support - ABV	MIPR	NAVFAC		0.440	09/02	0.800	12/02					0.000	1.240	1.240
Program Supp-M1A1 Mods	RCP	BAEST, Stafford, VA						0.051	1Q/04	0.035	1Q/05	Cont.	Cont.	
Program Supp-M1A1 Mods	WR	MCSC, Quantico, VA						0.081	1Q/04	0.065	1Q/05	Cont.	Cont.	
Program Supp-M1A1 FEP	MIPR	Tacom, ARDEC Warren, MI						0.200	1Q/04			Cont.	Cont.	
Program Supp- M1A1 FEP	RCP	MCSC, Quantico, VA						0.450	1Q/04			Cont.	Cont.	
Program Supp - M1A1 FEP	MIPR	NVESD, Fort Monmouth,NJ						0.300	1Q/04			Cont.	Cont.	
Subtotal Support			1.395	1.742		1.680		1.082		0.100		Cont.	Cont.	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E - ABV	MIPR	WES, Vicksburg, MS	0.295	0.700	09/02	0.314	02/03					0.000	1.309	1.309
DT&E - ABV	WR	MCOTEA, Quantico, VA			09/02	0.500	02/03					0.000	0.500	0.500
DT&E - ABV	MIPR	NSWC, Crane, IN	0.160	0.700	09/02	0.300	02/03					0.000	1.160	1.160
Engineering/Design	MIPR	PM UGV						0.340	TBD			0.000	0.340	0.340
M1A1 Firepower	WR	FMF						0.300	TBD			Cont.	Cont.	
M1A1 Firepower	TBD	TBD						1.250	TBD			Cont.	Cont.	
M1A1 Firepower	MIPR	APG, MD						0.932	1Q/04			Cont.	Cont.	
M1A1 Firepower	MIPR	YUMA, AZ						1.100	1Q/04			Cont.	Cont.	
M1A1 Firepower	NVESD	Fort Monmouth, NJ						0.300	1Q/04			Cont.	Cont.	
Subtotal T&E			0.455	1.400		1.114		4.222		0.000		Cont.	Cont.	
Remarks:														

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Exhibit R-3 Cost Analysis										DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /BA 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 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
M1A1 MOD KIT	RCP	BAEST, Inc, Stafford, VA						0.120	1Q/04	0.110	1Q/05	Cont.	Cont.	
M1A1 Firepower	MIPR	DRS, Techn., Inc., Torrance, CA						0.000	1Q/04			Cont.	Cont.	
Subtotal Management			0.000	0.000		0.000		0.120		0.110		Cont.	Cont.	
Remarks:														
Total Cost				5.510		10.004		6.746		0.495		Cont.	Cont.	

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Exhibit R-4/4a Schedule Profile Detail			DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C2316 Combat Services Support Engineering Equip	

ASSAULT BREACHER VEHICLE

Fiscal Year Quarter	00				01				02				03				04				05				06				07			
	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
Milestone 0	◆																															
System Development									■																							
System Testing/DT													■																			
Milestone B													◆																			
Build 3 LRIP													■																			
LUT																	■															
IOT&E																	■															
MS C/Full Rate Production																					◆				■							
Fielding Decision																									◆							
IOC																									◆							
FOC																									◆							

Program Funding Summary	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
<u>(U) RDT&E,N</u>	5.510	10.004	0.340	0.000	0.000	0.000	0.000	0.000	0.000	15.854
<u>(U) PMC, BLI# 613300 ABV</u>	0.000	0.000	0.000	4.634	47.901	47.957	0.000	0.000	0.000	100.492

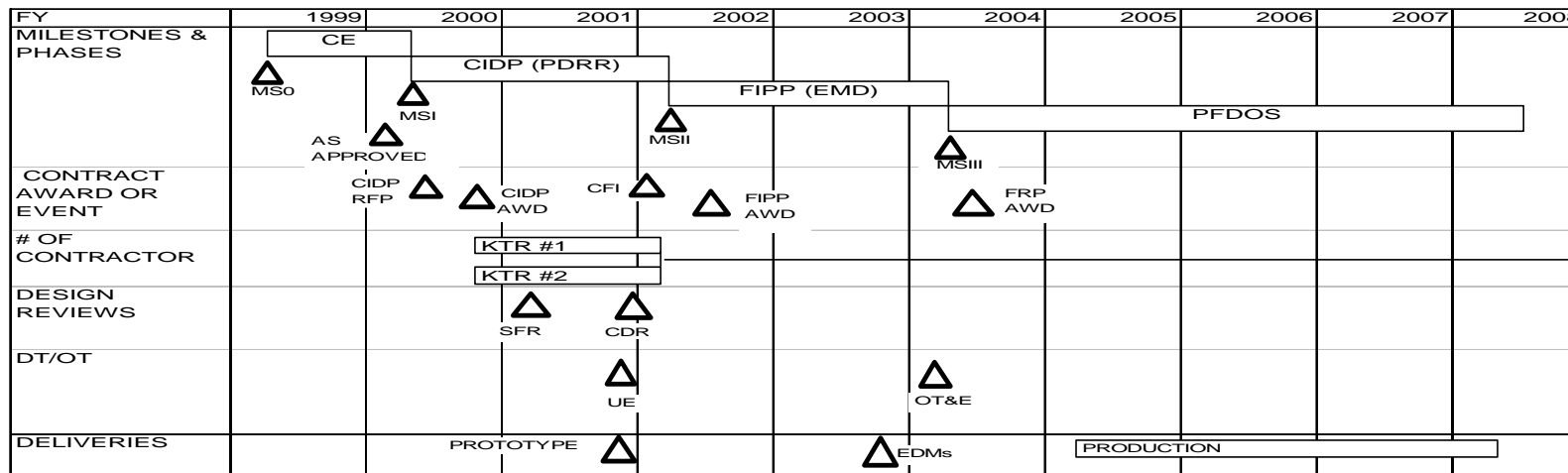
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Exhibit R-4/4a Schedule Profile Detail				DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME					
RDT&E, N /BA 7 Operational Sys Dev		0206624M Marine Corps Combat Services Spt		C2316 Combat Services Support Engineering Equip					
ABV SCHEDULE DETAIL		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			3rd Qtr						
Build 3 LRIP			3rd Qtr	1st Qtr					
Limited User Test				2nd Qtr					
IOT&E				3rd Qtr	1st Qtr				
Milestone C/Full Rate Production Decision					3rd Qtr				
Fielding Decision						2nd Qtr			
IOC						4th Qtr			
FOC							4th Qtr		

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Exhibit R-4/4a Schedule Profile Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C2316 Combat Services Support Engineering Equip

M1A1 FIREPOWER ENHANCEMENT PROGRAM (FEP)



<u>Program Funding Summary</u> <u>(APPN, BLI #, NOMEN)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N M1A1 FEP	0.000	0.000	5.952	0.000	0.000	0.000	0.000	0.000	0.000	5.952
(U) PMC BLI# 209500 M1A1 FEP	0.000	0.000	4.222	41.979	34.750	17.829	22.969	0.000	0.000	121.749

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support					C2509 Motor Transport Systems				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program
Project Cost	0.454	2.458	0.444	0.446	0.451	0.552	0.570	0.582	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
<p>The Marine Corps Tactical Transportation Program manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintained in the Marine Corps for development and testing in support of fleet Service Life Extension Program (SLEP) initiatives, vehicle quality deficiency resolutions, safety initiatives, environmental/state transportation mandated vehicle changes, and system component refresh modernization efforts. Given transportation asset operational availability declines at a steady rate over time, Service Life Extension Programs (SLEP), Fleet overhauls, and enhanced depot level modernization are essential in maintaining a viable transportation capability in the Marine Corps Operating Forces. This project line allows for a consolidated and prioritized approach to USMC modernization and SLEP of transportation assets. It provides a bridge for technology insertion and transition efforts to the Marine Corps from Advanced Technology Demonstrations/Advanced Concept Technology Demonstrations (ATDs and ACTDs), Warfighting Experimentation, and outputs from Industry/DoD and foreign cooperative res</p> <p>Motor Transportation Modernization program line specifically develops Marine Corps unique improvements/modernizations to fielded transportation systems and supports monitoring the commercial automotive industrial base for technology insertions to increase Reliability Availability and Maintainability-Durability (RAM-D), reduce total ownership costs, resolve unplanned safety hazards, and monitor/implement emerging state and federal transportation/environmental regulations as required. This is a sustained program line for "level of effort" programs. Funding will focus on streamlined acquisitions of Commercial-Off-the-Shelf/Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications/modernizations and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPs, or rapid COTS/NDI fielding for the Fleet Operating Forces.</p>										
(U) B. ACCOMPLISHMENTS/PLANNED:										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.047	0.172	0.080	0.085						
RDT&E Articles Qty										
MTM: Program management and travel in support of Transportation Systems modifications, COTS/NDI modernizations.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.209	0.386	0.364	0.361						
RDT&E Articles Qty										
MTM: Testing, integration, evaluation of Transportation Systems modifications.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.600	0.000	0.000						
RDT&E Articles Qty										
MTM: Developmental Testing/Performance Verification of Diesel powered Military Motorcycles.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	1.000	0.000	0.000						
RDT&E Articles Qty										
MTM: Design, fabricate and test prototype subsystems from Engineering Change Proposals (ECP) for the Interim Fast Attack Vehicle (IFAV).										

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME						
RDT&E, N/BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support		C2509 Motor Transport Systems						
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005					
Accomplishment/Effort Subtotal Cost	0.200	0.190	0.000	0.000					
RDT&E Articles Qty									
MTM: Perform Rollover Test on the High Mobility Multipurpose Wheeled Vehicle (HMMWV).									
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005					
Accomplishment/Effort Subtotal Cost	0.000	0.110	0.000	0.000					
RDT&E Articles Qty									
MTM: Develop modeling and simulation templates for the High Mobility Multipurpose Wheeled Vehicle (HMMWV) and IFAV.									
(U) Total \$	0.456	2.458	0.444	0.446					
(U) Project Change Summary	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>					
(U) FY 2003 President's Budget:	0.254	0.508	0.464	0.468					
(U) Adjustments from the President's Budget:									
(U) Congressional/OSD Program Reduction	-0.002	-0.050	-0.020	-0.022					
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings	0.208	2.000							
(U) SBIR/STTR Transfer	-0.006								
(U) Minor Affordability Adjustment									
(U) FY 2004 President's Budget:	0.454	2.458	0.444	0.446					
CHANGE SUMMARY EXPLANATION:									
(U) Funding: Change in funding in FY03 and FY04 is due to realignment of programs within the Marine Corps.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
(U) C. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009 To Compl	Total Cost
(U) PMC (BLI# 523000) < \$5M (MT-MOD)	1.193	2.137	2.895	2.908	3.009	3.065	3.120	3.175 Continuing	Continuing
(U) PMC (BLI# 509300) Flatrack	0.000	0.000	0.000	0.000	8.495	22.066	22.200	0.000 0.000	52.761
(U) PMC (BLI# 509300) LVSR	0.000	0.000	0.000	0.000	60.185	93.570	96.613	56.897 135.146	442.411
(U) Related RDT&E: Not Applicable.									
(U) D. ACQUISITION STRATEGY: The MTM program is a sustained program line for "level of effort" programs. Funding will focus on streamlined acquisitions of Commercial-Off-The-Shelf Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications/modernizations and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPS, or rapid COTS/NDI fielding for the Fleet Marine Forces (FMF).									
(U) E. MAJOR PERFORMERS:									
Nov'02	Hayes Diversified	Military Motorcycle Diesel Development & Verification							
Feb' 03	Advanced Vehicle Systems (AVS)	Design, fabricate and test prototype subsystems ECPs for the IFAV.							

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C2929 Testing Measuring Diagnostic Equip (TMDE) & SE					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.301	0.323	2.234	1.079	1.518	1.141	2.020	2.006	Cont	Cont
RDT&E Articles Qty										
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:										
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 communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators.										
The Marine Corps Family of Automatic Test Systems (ATS), provides automatic test program capability for use by technicians both in garrison and forward edge of battlefield. Specific work in area of interactive electronic tech manuals, condition/predictive based maintenance, embedded sensors, prognostics. The Automatic Test Systems/Third Echelon Test Sets (ATS/TETS), FY-04 effort is to provide research, evaluation and test of high powered laser devices.										
The Marine Corps Automatic Test Equipment (MCATE), provides development of sustainment technology for automatic test equipment used in organizational/intermediate maintenance facilities.										
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.108	0.119	0.123	0.127						
RDT&E Articles Qty										
APSCE: Research, evaluation, test and selection of alternative power source products for the APSCE suite of equipment.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.193	0.204	0.440	0.467						
RDT&E Articles Qty										
ATS: Development of new technology testing applications in support of emerging weapon systems.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.461	0.485						
RDT&E Articles Qty										
MCATE: Develop new technology for sustainment of current Marine Corps Automatic Test Equipment.										
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005						
Accomplishment/Effort Subtotal Cost	0.000	0.000	1.210	0.000						
RDT&E Articles Qty										
ATS/TETS: Develop high power laser testing technology.										
(U) Total \$	0.301	0.323	2.234	1.079						

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA-7 Operational Sys Dev	0206624M Marine Corps Combat Services Support				C2929 Testing Measuring Diagnostic Equip (TMDE) & SE					
	FY2002	FY2003	FY2004	FY2005						
(U) FY 2003 President's Budget:	0.319	0.331	0.339	1.094						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reduction	-0.002	-0.008	-0.052	-0.023						
(U) Congressional Rescissions										
(U) Congressional Increases										
(U) Reprogrammings	-0.009		1.932	-0.007						
(U) SBIR/STTR Transfer	-0.007									
(U) Minor Affordability Adjustment			0.015	0.015						
(U) FY 2004 President's Budget:	0.301	0.323	2.234	1.079						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: Change in funding for FY04 and FY05 is due to the realignment of programs within the Marine Corps.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	To Compl	Total Cost
(U) PMC Line (BLI# 462000) APSCE	0.025	4.515	0	0	0	0	0	0	0	4.74
(U) PMC Line (BLI# 636600) APSCE	0.000	0.000	4.715	4.820	3.538	3.924	0.000	0.000	Continuing	Continuing
(U) PMC Line (BLI# 440200) MCATE	0.000	0.000	1.111	2.020	2.344	2.286	2.381	2.421	Continuing	Continuing
(U) PMC Line (BLI# 440200) ATS/TETS	7.465	6.751	19.351	15.664	13.449	15.726	12.135	0.612	Continuing	Continuing
(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.										
(U) E. MAJOR PERFORMERS: ATEP, Albany, GA for the minor performances. All other performers to be determined at this time.										

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Exhibit R-3 Cost Analysis											DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME							
RDT&E, N /BA 7 Operational Sys Dev			0206624M Marine Corps Combat Services Spt					C2929 Testing Measuring Diagnostic Equip (TMDE) & SE							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Hardware	RCP	Mantech, Va		0.100	02/02							0	0.100	0.100	
Study & Hardware	RCP	TBD				0.150	12/02	1.200	03/04			Cont.	Cont.		
Hardware	RCP	TBD						0.625	03/04			Cont.	Cont.		
Hardware	RCP	TBD								0.700	03/05	Cont.	Cont.		
Hardware	RCP	Willitis Electronic Assembly		0.019	03/02								0.019	0.018	
Hardware	RCP	TBD				0.086	12/02	0.088	12/03	0.092	12/04	Cont.	Cont.		
Software Support	WR	ATEP, Ga		0.050	05/02	0.054	12/02	0.286	12/03	0.252	12/04	Cont.	Cont.		
Hardware	WR	NSWC, Ca		0.043								0.000	0.043	0.045	
Subtotal Product Dev			0.000	0.212		0.290		2.199		1.044		Cont	Cont		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Travel	WR	MCSC, Quantico		0.005	04/02	0.033	12/02	0.035	12/03	0.035	12/04	Cont.	Cont.		
Subtotal Support			0.000	0.005		0.033		0.035		0.035		Cont	Cont		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
EVAL TESTING	WR	CRANE, IN		0.084	06/02							0.000	0.084	0.094	
Subtotal T&E			0.000	0.084		0.000		0.000		0.000		0.000	0.084	0.094	
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		Cont	Cont		
Remarks:															
Total Cost				0.301		0.323		2.234		1.079		Cont	Cont		

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Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206624M Marine Corps Combat Services Spt	PROJECT NUMBER AND NAME C2929 Testing Measuring Diagnostic Equip (TMDE) & SE

ALTERNATE POWER SOURCES FOR COMMUNICATIONS EQUIPMENT

APSCE MILESTONE SCHEDULE					
PHASE	FY 99	FY 00	FY 01	FY 02	FY 03
MILESTONE 0	▲				
MILESTONE C				▲	
PRODUCTION CONTRACT AWARD					▲
PRODUCTION					▲
IOC					▲

<u>Program Funding Summary</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
<u>(APPN, BLI #, NOMEN)</u>										
<u>(U) RDT&E,N</u>	0.108	0.119	0.123	0.127	0.131	0.137	0.140	0.143	Continuing	Continuing
<u>(U) PMC, BLI# 462000 APSCE</u>	0.025	4.515	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.540
<u>(U) PMC, BLI# 636600 APSCE</u>	0.000	0.000	4.715	4.820	3.538	3.924	0.000	0.000	0.000	16.997

CLASSIFICATION: Unclassified

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0207161N-Tactical Air Intercept			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	17.856	1.909	2.322	4.110	9.411	7.928	2.518	1.264
E0457 AIM-9X	17.856	1.909	2.322	4.110	9.411	7.928	2.518	1.264
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X (Sidewinder) short range air-to-air missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracing 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). Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design.</p>								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0207161N-Tactical Air Intercept			PROJECT NUMBER AND NAME E0457-AIM-9X				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		17.856	1.909	2.322	4.110	9.411	7.928	2.518	1.264
RDT&E Articles Qty		10	13						
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X (Sidewinder) 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). Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design.</p>									

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207161N-Tactical Air Intercept	PROJECT NUMBER AND NAME E0457-AIM-9X
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.752	1.045		
RDT&E Articles Quantity	13			

Continue EMD efforts to include OT-IIB, including correction of issues identified during OT.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.104	0.864		0.165

Continue providing Government flight test support

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.322	3.945

Begin P3I efforts for AIM-9X fuse.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207161N-Tactical Air Intercept	PROJECT NUMBER AND NAME E0457-AIM-9X
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(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	16.257	1.957	0.716	1.142
Current BES/President's Budget	17.856	1.909	2.322	4.110
Total Adjustments	1.599	-0.048	1.606	2.968

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.012		
Congressional rescissions	-0.035			
SBIR/STTR Transfer				
Economic Assumptions	-0.050	-0.036	-0.059	-0.094
Reprogrammings	1.234			
Other Navy/OSD Adjustments	0.45		1.665	3.062
Congressional increases				
Subtotal	1.599	-0.048	1.606	2.968

(U) Schedule:

(U) Schedule: the OT-IIB completion date was extended to the fourth quarter of FY03 due to 1) A bit-false alarm issue with the control activation system (CAS) that has been resolved; 2) Stand-down of US Navy drones (QF-4) due to an accident in April - AIM-9X flight tests with drones resumed in January 2003.

(U) Technical:

(U) Technical: The control activation system BIT false alarm issue was resolved with minor hardware/software changes.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207161N-Tactical Air Intercept	PROJECT NUMBER AND NAME E0457-AIM-9X
-------------------------------------------------------------	--------------------------------------------------------------------	-----------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost*</u>
220900 AIM-9X Missile*	25.779	52.230	35.818	35.582	38.716	49.586	50.305	46.059	849.095	1181.469
231500 AIM-9M Mods	0.792	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.375
AIM-9X Spares	0.973	0.901	1.413	1.916	2.264	2.460	3.273	3.456	0.000	
AIM-9X Mods/Missile (Air Force)	33.197	54.148	69.072	52.706	55.277	53.806	54.49	55.764	714.461	

(U) RELATED AIR FORCE RDT&E:

Program Element: 0207161F	6.946	2.912	0.375	5.573	15.045	5.554	5.634	5.710
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* Includes \$1.7M Congressional add for AIM-7 Sparrow DSM-156 Test Set Upgrade.

(U) E. ACQUISITION STRATEGY:

After a full and open competition, a Cost Plus Incentive Fee/Award Fee contract was awarded to Hughes Missile System Company (now Raytheon Systems Corporation) (RSC) to complete missile system development and prepare for production. This Engineering and Manufacturing Development (EMD) contract includes three Fixed Price options for Low Rate Initial Production (LRIP) Lots I, II and III. The FY01 LRIP I option was exercised in Nov 2000, LRIP II option was exercised in Nov 2001 and LRIP III option was exercised in Nov 2002. The EMD contract and production options provide strong incentives for the contractor to control costs, achieve reliability performance and deliver on schedule.

The Navy Acquisition Executive will make the Full Rate Production (FRP) decision with advice from the Air Force Acquisition Executive subsequent to the successful completion of the associated exit criteria. FRP Lots 4 through 7 contracts will be Firm Fixed-Price (FFP). Rewards or penalties are provided depending on RSC's performance relative to the Procurement Price Commitment Curve (PPCC). A Service review of RSC's Lot 4 through 7 proposals relative to the PPCC will be held prior to award of those contracts.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0207161N-Tactical Air Intercept				E0457-AIM-9X					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCWD	26.097	0.335	11/02	0.335	11/03	0.561	11/04	2.177	29.505	
Developmental Test & Evaluation	WX	NAWCAD	4.683								4.683	
Operational Testing	WX	OPTEVFOR		1.368	02/03						1.368	
Subtotal T&E			30.780	1.703		0.335		0.561		2.177	35.556	
Remarks:												
Contractor Engineering Support	ID/IQ,T&M	Endmark, Arlington, Va	3.670								3.670	
Government Engineering Support	ID/IQ,T&M	MSTTm Arlington, Va	0.986								0.986	
Program Management Support	ID/IQ,T&M	NSM, Arlington, Va	1.440								1.440	
Travel	WX	PMA259 IPT	1.263	0.020	10/02	0.020	10/03	0.030	10/04		1.333	
Contractor Engineering Support	ID/IQ,T&M	Various	1.020	0.186	various	0.200	various	0.200	various	0.876	2.482	
SBIR Assessment												
Subtotal Management			8.379	0.206		0.220		0.230		0.876	9.911	
Remarks:												
Total Cost			264.773	1.909		2.322		4.110		19.815	292.929	
Remarks:												

R-1 SHOPPING LIST - Item No. 190

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 9)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																											DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																
RDT&E, N / BA-7										0207161N-Tactical AIM Missile										E0457-AIM-9X																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones							☆	☆	▲	△																										
							☆	☆	▲	△																										
									MS III	FPR Award																										
EDM Completion								△																												
AOTD P3I											—————																									
Test & Evaluation Milestones																																				
Developmental Test																																				
Operational Test																																				
Production Milestones																																				

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0207163N AMRAAM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	9.692	7.928	9.297	7.972	2.736	4.691	1.952	0.973
E0981 AMRAAM	9.692	7.928	9.297	7.972	2.736	4.691	1.952	0.973
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, simulation capability development, aircraft missile integration tasks, pre-planned product improvement (P3I) efforts, and procurement of hardware to support Navy test and evaluation tasks.</p>								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM			PROJECT NUMBER AND NAME E0981 AMRAAM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	9.692	7.928	9.297	7.972	2.736	4.691	1.952	0.973
RDT&E Articles Qty								
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, simulation capability development aircraft missile integration tasks, pre-planned product improvement (P3I) efforts, and procurement of hardware to support Navy test and evaluation tasks.</p>								

R-1 SHOPPING LIST - Item No.

191

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM	PROJECT NUMBER AND NAME E0981 AMRAAM

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.117	5.307	6.674	5.297
RDT&E Articles Quantity				

Continued system engineering activities in AMRAAM P3I Phase 3 EMD program which include conducting proof of Manufacturing (POM) testing of Phase 3 system hardware, developing, coding, and testing P3I Phase 3 software, and integrating hardware and software into missile test articles for use in ground and initial captive carriage flight testing. Initiate follow-on P3I engineering efforts in FY2004 to include GPS/Advanced Data Link/Kinematics improvements to meet remaining P3I ORD requirements. Continue systems engineering/aircraft integration activities in AMRAAM P3I program with emphasis on Navy unique compatibility requirements and aircraft integration/compatibility requirements. Above in consonance with USAF funding of \$51.221 in FY02, \$35.810 in FY03, \$31.273 in FY04, and \$32.875 in FY05.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.575	2.071	2.273	2.325
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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.550	0.350	0.350
RDT&E Articles Quantity				

Continue aircraft integration activities and test and evaluation for Navy unique requirements.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM	PROJECT NUMBER AND NAME E0981 AMRAAM			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		10.700	8.124	9.527	8.156
Current BES/ President's Budget		9.692	7.928	9.297	7.972
Total Adjustments		-1.008	-0.196	-0.230	-0.184
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.047		
Congressional rescissions		-0.023			
SBIR/STTR Transfer					
Economic Assumptions		-0.028	-0.149	-0.221	-0.177
Reprogrammings		-0.957			
Other Navy/OSD Adjustments				-0.009	-0.007
Congressional increases					
Subtotal		-1.008	-0.196	-0.230	-0.184
(U) Schedule:					
Not applicable.					
(U) Technical:					
Not applicable.					

R-1 SHOPPING LIST - Item No. 191

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0207163N AMRAAM	PROJECT NUMBER AND NAME E0981 AMRAAM
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(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
WPN/P1#6 \$	36.538	49.962	37.648	36.115	82.876	114.148	87.417	86.957	88.308	1,715.002
Quantity	55	100	53	46	101	150	140	150	87	2419
<u>Related RDT&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										

(U) E. ACQUISITION STRATEGY:

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 multi-year hardware pricing 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. Also included in the Lot 16 contract are pre-priced options for Lots 17 thru 21 (FY2003 thru FY2007).

R-1 SHOPPING LIST - Item No. 191

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0207163N AMRAAM			E0981 AMRAAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPAF	Raytheon, Tucson, AZ	26.082	4.414	11/02	5.579	11/03	4.406	11/04	1.514	41.995	41.995
Primary Hardware Development	WX	NAWC-AD Patuxent River MD		0.021	11/02	0.020	11/03	0.021	11/04	0.000	0.062	
Primary Hardware Development	WX	NAWC-WD Pt Mugu CA		0.072	11/02	0.070	11/03	0.072	11/04	0.000	0.214	
Primary Hardware Development	WX	NSWC Dahlgren VA		0.021	11/02	0.021	11/03	0.021	11/04	0.000	0.063	
Award Fees	SS/CPAF	Raytheon, Tucson, AZ	3.095	0.779	11/02	0.984	11/03	0.777	11/04	0.267	5.902	5.902
Prior Years Development/Acft Integ	Various	Various	19.650								19.650	
Subtotal Product Development			48.827	5.307		6.674		5.297		1.781	67.886	
Remarks: Prior year award fees were \$3.095 and are estimated to be approximately 15% of contract value for future years.												
Development Support	SS/FFP	JHU/APL Laurel MD		0.378	01/03	0.384	01/04	0.390	01/05	0.750	1.902	1.902
Development Support	RX	NSMA VA		0.875	12/02	0.900	12/03	0.926	12/04	1.050	3.751	
Development Support	WX	NAWC-WD Pt Mugu CA	8.577	0.051	10/02	0.050	10/03	0.050	10/04	0.000	8.728	
Subtotal Support			8.577	1.304		1.334		1.366		1.800	14.381	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0207163N AMRAAM			E0981 AMRAAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC WD Pt Mugu CA	0.956	0.100	11/02	0.350	11/03	0.350	11/04	4.600	6.356	
Developmental Test & Evaluation	MIPR	Raytheon, Tucson, AZ		0.450	12/02	0.000		0.000			0.450	
Subtotal T&E			0.956	0.550		0.350		0.350		4.600	6.806	
Remarks:												
Program Management Support	WX	NAWC WD Pax River MD	2.188	0.513	10/02	0.680	10/03	0.696	10/04	1.377	5.454	
Travel	MIPR	PMA-259 Eglin AFB FL	0.950	0.254	10/02	0.259	10/03	0.263	10/04	0.794	2.520	
Subtotal Management			3.138	0.767		0.939		0.959		2.171	7.974	
Remarks:												
Total Cost			61.498	7.928		9.297		7.972		10.352	97.047	
Remarks:												

R-1 SHOPPING LIST - Item No. 191

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 9)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RDT&E, N / BA-7								0207163N AMRAAM								E0981 AMRAAM																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Pre-Planned Product Improvement (P3I) Phase 3																																
EMD Completion																																
Test Readiness Reviews																																
Development Test Flight Test																																
IOC C7																																
Pre-Planned Product Improvement (P3I) Phase 4																																
EMD																																
SYSTEM DT/OT Start																																
Phase 4 SWUP																																
IOC																																
Production Milestones																																
Contract awards																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 191

UNCLASSIFIED

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 8 of 9)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	239.796	54.743	112.970	379.541	504.753	298.456	201.110	305.348	158.978	Continuing	Continuing
X0728 EHF SATCOM Terminals	92.823	10.846	47.445	50.449	56.509	17.234	10.307	10.500	10.690	Continuing	Continuing
X0731 Fleet Satellite Comm	88.590	9.486	0.653	0.585	1.468	1.497	1.779	1.813	1.847	Continuing	Continuing
X2472 Mobile User Segment	58.383	34.411	59.018	315.801	428.177	243.464	118.507	221.182	73.246	89.000	1,641.189
X9122 Advanced Wideband	0.000	0.000	5.854	12.706	18.599	36.261	70.517	71.853	73.195	Continuing	Continuing
											0.000
											0.000
Quantity of RDT&E Articles			4		12	4	12				32

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

(U) The Navy Extremely High Frequency (EHF) Satellite Communications (SATCOM) Program (NESP) provides for the development and production of terminals to provide anti-jam, low probability of intercept/detection communications capability for Command and Control of the fleet. NESP operates with Fleet Satellite (FLTSAT) EHF Packages (FEP), Ultra High Frequency (UHF) Follow On (UFO), and Milstar I/II Satellite Packages. The Milstar program is comprised of satellites, control stations, and aircraft, ship, and ground terminals to provide assured worldwide, secure, anti-jam, survivable communications for the National Command Authority, CINCs, and operational commanders. The Advanced EHF (AEHF) Operational Requirements Document (ORD) was validated by the Joint Requirements Oversight Council (JROC) on 22 Mar 1999. AEHF development cost estimates are included in the budget.

(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), Wideband Gapfiller Satellite (WGS) System, and the Advanced Wideband System (AWS) 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.

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)	
<p>(U) The Sensitive Compartmented Information (SCI) Networks implements the Integrated Special Intelligence Communications portion of the ADNS architecture to provide services for transfer of Special Intelligence (SI) information between ships and shore activities in support of joint and combined operations. SCI Networks has been combined into the SI communications architecture and 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 Joint Ultra High Frequency (UHF) Military Satellite Communications Network Integrated Control System (JMINI) will provide dynamic centralized control of joint 5kHz and 25kHz UHF military satellite communications (MILSATCOM) voice and data resources (channels and Time Division Multiple Access (TDMA)) time slots via a globally integrated system of four control stations to be located at each of the three Naval Computer and Telecommunications Area Master Station (NCTAMS) sites plus Naval Computer and Telecommunications Station (NCTS) Guam.</p> <p>(U) The Joint Tactical Radio System-Maritime (JTRS-M) will serve as the JMINI Control System Channel Controller and will provide tactical Joint interoperable UHF satellite communications per CJCSI 6251.01. JTRS-M/F will replace all non-compliant, mostly 1970's design radios and multiplexers with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. The JTRS-M/F will be evolutionary in development beginning with a modification of the Digital Modular Radio (DMR) to be compliant with JTRS hardware and software. When complete, the modified DMR (renamed as JTRS-M/F Block I) will meet narrowband requirements of the Navy tactical communications. Beginning in FY 2003, JTRS-M transfers to Program Element 0604280N, Project Number X3073.</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 expected to degrade below acceptable availability parameters by FY 2008 and will require replacement starting at that time. In addition, new user requirements have been identified and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrating Integrated Product Team (IIP) has developed an acquisition strategy to address the exponential growth of narrowband communications demands, as defined in the MUOS joint interest Operational Requirements Document (ORD). This program builds on state of the art technologies and commercial practices to develop a totally responsive joint warfighter system and provides for the development of the next generation DoD narrowband communications satellite constellation, the Mobile User Objective System (MUOS)</p> <p>(U) The Navy Advanced Wideband 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/Ka-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for the upgrade of an existing, operational system.</p>		

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	92.823	10.846	47.445	50.449	56.509	17.234	10.307	10.500	10.690	Continuing	Continuing
RDT&E Articles Qty			4		12						16

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

(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.

(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), Wideband Gapfiller Satellite (WGS) System, and the Advanced Wideband System (AWS) 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.

(U) The EHF Medium Data Rate (MDR) upgrade program is near development completion 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.

(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.

(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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION (continued):</p> <p>(U) Advanced EHF is the follow-on satellite communications system that will provide worldwide, secure, survivable satellite communications to U.S. and International Partners strategic and tactical forces during all levels of conflict. The AEHF 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 AEHF system will replenish and improve on the capabilities of the Milstar system. The Milstar system is projected to begin degrading by FY 2003. The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the ORD for the joint AEHF Satellite Communications System. The AEHF system will provide crosslinks within the AEHF constellation as well as between AEHF satellites and Milstar satellites in the backwards compatible mode. Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the AEHF ORD.</p> <p>(U) The Challenge Athena Program requires the following enhancements: (a) Satellite Doppler Buffer Fill Meter, which is a "gauge" on the GUI that indicates the current level of fill of the satellite Doppler buffer. The terminal operator will be able to determine if the buffer is close to an overflow/underflow condition. With this indicator, he can then better plan when to re-center it without losing critical communications; (b) Channel Interleave Option for MIL-STD-188-165 Modes, that allow the channel interleaver to be enabled without the additional bandspreading required for framing and Reed-Solomon FEC that provides handover and EMI protection; (c) Higher Data Rates to increase the maximum provided data rate of the MD-1030B(V) 9 Modem to 4.096 Mbps with QPSK (Quadrature Phase Shift Keying) modulation. Higher available data rates in the MD 1030B(V)9 modem will allow the customer to achieve its near term throughput needs without putting up additional carriers; and (d) Shore Handover Error Burst. The MD-1030B(V)9 modem maintains its Bit Count Integrity (BCI) both at ship and shore based installations through shipboard antenna handover events. In addition, the MD-1030B(V)9 achieves virtual error free performance for ship's received data.</p>		

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 4 of 39)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Milstar on Orbit test and checkout	0.306			
RDT&E Articles Quantity				
(U) Participated in Milstar on Orbit test and checkout of Milstar flight 5 and 6 (MST 8000). Continued to participate in joint interoperability communications with Army MDR Secure Mobile Antijam Reliable Tactical Terminal (SMART-T).				
	FY 02	FY 03	FY 04	FY 05
Upgraded MD-1030B(V)9 modem	0.100			
RDT&E Articles Quantity				
(U) Upgraded MD-1030B(V)9 modem for the commercial satellite C band/CWSP (Challenge Athena).				
	FY 02	FY 03	FY 04	FY 05
AN/WSC-6 WGS Terminal Upgrades	1.850	2.130	0.430	0.650
RDT&E Articles Quantity				
(U) FY02: Begin development of advanced SHF modems for Wideband Gapfiller Satellite system and AN/WSC-6 terminal upgrades. (U) FY03: Continue development of an advanced modem system and AN/WSC-6 Wideband Gapfiller system terminal upgrades and conduct follow on test and evaluation. (U) FY04: Developmental testing of advanced modem system and terminal upgrades. (U) FY05: Operational testing of advanced modem system and terminal upgrades.				
	FY 02	FY 03	FY 04	FY 05
TIP/NECC modifications	2.025			
RDT&E Articles Quantity				
(U) Development of TIP/NECC Increment 3 modifications.				

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
AEHF Development, First Phase	6.565	43.815	49.019	55.109
RDT&E Articles Quantity		4		12

(U) First phase of AEHF development for System Design and Development (SDD) for ship, shore and submarine platforms.

(U) **FY02:** Continued AEHF system engineering studies and analysis, performed terminal upgrade design and development, developed test procedures. Began development of terminal and satellite simulators and performed initial ground based testing.

(U) **FY03:** Continue engineering analysis and development of terminal and satellite simulators. Award contract for development of AEHF prototype terminal hardware and software. Hardware includes operator interface, Terminal Control Processor, Modem Control Processor, Antenna Pointing Unit and associated firmware. Software includes access control protocols, terminal Built In Testing (BIT)/BITE Adaptation Data Recorder, and LPI software. Develop a high-level test plan to ensure requirements are decomposed and the key modeling and analysis demonstrates acquisition, tracking, communications antenna checkout, antenna handover, motion, anti-jam, low probability of intercept, low probability of detection, link budgets, multiband/multimode feed/modem development, etc. Begin design and development of 4 AEHF prototypes (two ship, one sub, one shore).

(U) **FY04:** Complete development of satellite simulators. Continue hardware and software development under contract award and development of high-level test plan. Continue design and development of 4 AEHF prototypes.

(U) **FY05:** Complete AEHF prototype terminal hardware and software development under contract award. Complete design and development of 4 AEHF prototypes started in FY03. Begin design and development of Ka-band to integrate with AEHF prototypes. Begin production of 12 Engineering Development Models (EDM) for testing. Begin risk reduction phase necessary to demonstrate waveform interface compatibility testing between AEHF terminal and Lincoln Lab SATSIM and demonstrate payload-to-terminal on-orbit backward compatibility with existing Milstar constellation.

	FY 02	FY 03	FY 04	FY 05
EHF Polar		1.500	1.000	0.750
RDT&E Articles Quantity				

(U) EHF POLAR software development and systems engineering.

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		12.266	48.708		
Current BES/President's Budget		10.846	47.445	50.449	56.509
Total Adjustments		-1.420	-1.263		
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.108			
Section 8032: FFRDC		-0.047			
SBIR/STTR Transfer		-0.278			
JFK Battlegroup Force Interoperability Test (BFIT)		-0.027			
Task Force Web		-0.441			
Joint Mission Planning System Combat 1		-0.210			
Sec 313 Rev Economic Assumption		-0.026			
Economic Assumptions (SEC 8135)		-0.031	-0.273		
FY02 Federal Technology Transfer		-0.006			
Miscellaneous Navy Adjustments		-0.246			
Business Process Reform			-0.194		
IT Cost Growth			-0.089		
FY03 FFRDC Reduction			-0.090		
Miscellaneous Departmental Adjustments			-0.617		
Subtotal		-1.420	-1.263	0.000	0.000
(U) Schedule:					
SDD contract award slipped from 12/02 to 5/03. Required Acquisition Strategy Report (ASR) was approved June 2002. The Request for Proposal (RFP) could not be released until ASR was approved. The Request for Proposal was released in August 2002 and contract award expected in May 2003.					
(U) Technical:					
Not Applicable.					

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME X0728 EHF SATCOM Terminals				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
321500 - OPN Ship and Shore*	65.387	46.592	75.589	20.958	108.349	114.69	108.148	111.626	Continuing	Continuing
*Includes EHF terminal installation costs.										
(U) Related RDT&E:										
(U) PE 0303603F, Milstar										
(U) PE 0303601F, Air Force Satellite Communications										
(U) PE 0303142A, Army Extremely High Frequency Communications Terminal										
(U) E. ACQUISITION STRATEGY:										
(U) Navy Multiband Terminal (NMT) Concept Exploration contracts were awarded in FY01. Two System Development and Demonstration (SDD) contracts will be competitively awarded in FY 2003 for the development and demonstration of four prototype terminals and in FY 2005 for the development, demonstration and procurement of twelve Engineering Developmental Models (EDMs). Prototype testing for downselect will occur after 28 months with a production option scheduled for FY 2005.										

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N - Satellite Communications (Space)			X0728 EHF SATCOM Terminals						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD		28.739	12/02	42.320	12/03	47.929	12/04	Continuing	Continuing	
Ancillary Hardware Development	CPFF	Raytheon (Marlborough, MA)	55.396	2.867	10/02					Continuing	Continuing	
Aircraft Integration												0.000
Ship Integration	WR	NUWC (Newport, RI)		0.907	10/02					Continuing	Continuing	
Systems Engineering	WR	SSC SD (San Diego)	13.241							Continuing	Continuing	
Systems Engineering	WR	NUWC (Newport, RI)		2.092	10/02					Continuing	Continuing	
Systems Engineering	T&M	TCI (San Diego, CA)		1.604	10/02					Continuing	Continuing	
Systems Engineering	Various	Various	8.161							Continuing	Continuing	
Training Development	WR	TCI (San Diego, CA)		1.100	10/02					Continuing	Continuing	
GFE												0.000
Award Fees												0.000
Subtotal Product Development			76.798	37.308		42.320		47.929		Continuing	Continuing	
Remarks:												
Development Support	WR	SSC SD (San Diego, CA)	7.015	1.250	10/02	0.306	12/03	0.383	12/04	Continuing	Continuing	
Software Development	WR	SSC SD (San Diego, CA)		1.077	10/02	1.393	12/03	1.791	12/04	Continuing	Continuing	
Software Development	WR	NUWC (Newport, RI)	5.438	1.500	10/02	0.982	12/03	0.750	12/04	Continuing	Continuing	
Integrated Logistics Support	T&M	TCI (San Diego, CA)		1.353	10/02					Continuing	Continuing	
Technical Data												0.000
Studies & Analyses	WR	SSC SD (San Diego, CA)	5.116	1.371	10/02	5.018	12/03	5.006	12/04	Continuing	Continuing	
GFE												0.000
Award Fees												0.000
Subtotal Support			17.569	6.552		7.699		7.930		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N - Satellite Communications (Space)			X0728 EHF SATCOM Terminals						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC SD (San Diego, CA)	9.302	0.667	10/02	0.430	12/03			Continuing	Continuing	
Operational Test & Evaluation	WR	SSC SD (San Diego, CA)		0.114	10/02			0.650	12/04	Continuing	Continuing	
Live Fire Test & Evaluation												0.000
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			9.302	0.780		0.430		0.650		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	T&M	BAH (San Diego, CA)		0.400	10/02					Continuing	Continuing	
Government Engineering Support												0.000
Program Management Support	T&M	Various		2.355	10/02					Continuing	Continuing	
Travel				0.050	10/02					Continuing	Continuing	
Transportation												0.000
SBIR Assessment												0.000
Subtotal Management			0.000	2.805		0.000		0.000		Continuing	Continuing	
Remarks:												
Total Cost			103.669	47.445		50.449		56.509		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE: 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME X0731 Fleet Satellite Comm					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	88.590	9.486	0.653	0.585	1.468	1.497	1.779	1.813	1.847	Continuing	Continuing
RDT&E Articles Qty											0

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

(U) The Sensitive Compartmented Information (SCI) Networks implements the Integrated Special Intelligence Communications portion of the ADNS architecture to provide services for transfer of Special Intelligence (SI) information between ships and shore activities in support of joint and combined operations. SCI Networks has been combined into the SI communications architecture and 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.

(U) The Joint Ultra High Frequency (UHF) Military Satellite Communications Network Integrated Control System (JMINI) will provide dynamic centralized control of joint 5kHz and 25kHz UHF military satellite communications (MILSATCOM) voice and data resources (channels and Time Division Multiple Access (TDMA)) time slots via a globally integrated system of four control stations to be located at each of the three Naval Computer and Telecommunications Area Master Station (NCTAMS) sites plus Naval Computer and Telecommunications Station (NCTS) Guam.

(U) The Joint Tactical Radio System-Maritime (JTRS-M) will serve as the JMINI Control System Channel Controller and will provide tactical Joint interoperable UHF satellite communications per CJCSI 6251.01. JTRS-M/F will replace all non-compliant, mostly 1970's design radios and multiplexers with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. The JTRS-M/F will be evolutionary in development beginning with a modification of the Digital Modular Radio (DMR) to be compliant with JTRS hardware and software. When complete, the modified DMR (renamed as JTRS M/F Block I) will meet narrowband requirements of the Navy tactical communications. Beginning in FY 2003, JTRS-M transfers to Program Element 0604280N, Project Number X3073.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME PE: 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME X0731 Fleet Satellite Comm

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
DMR	8.791	(transfers to PE 0604280N Project Number X3073 in FY 03)		
RDT&E Articles Quantity				

Initiated modification of the Digital Modular Radio (DMR), identified as the Joint Tactical Radio System (JTRS) candidate radio, to be compliant with JTRS software architecture. Also, initiated development of contract package for JTRS-M/F Block II as the follow-on to the modified DMR.

These efforts will continue in Program Element 0604280N, Project Number X3073 JTRS-M/F beginning in FY 2003.

	FY 02	FY 03	FY 04	FY 05
JMINI NMS				0.822
RDT&E Articles Quantity				

Research of advanced Demand Assigned Multiple Access (DAMA) waveforms, Integrated Waveforms (IW), and modification of the JMINI CS system for compliance with Mobile User Objective System (MUOS) architecture

	FY 02	FY 03	FY 04	FY 05
SCI Networks	0.695	0.653	0.585	0.646
RDT&E Articles Quantity				

Continued integration and implementation of SCI Networks and associated Special Intelligence Communication capabilities. Development and testing of submarine upgrades, developmental testing of surface upgrades (DTIIIA), Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) of SCI Networks were accomplished during FY02. Continue DT&E and OT&E of submarine upgrade (DTIID and OTIIB), design, integration and testing (DTIIIB, DTIIIC, OTIIIA) of software and hardware for sub, surface, and shore. DTIID and OTIIB will support MSIIIB. DTIIIB, DTIIIC, and OTIIIA will support MS-IIIC.

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE: 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME X0731 Fleet Satellite Comm
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(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	4.595	0.669		
Current BES/President's Budget (PB 04)	9.486	0.653	0.585	1.468
Total Adjustments	4.891	-0.016	0.000	0.000

Summary of Adjustments

Sec 8123 Mgmt Reform Initiative	-0.041			
SBIR	-0.102			
Congressional Add JTRS Ver 2	6.000			
Joint Mission Planning System Combat 1 Program	-0.089			
Sec 313 Rev Econ Assumptions	-0.010			
Sec 8135 Econ Assumptions	-0.029	-0.004		
Miscellaneous Department Adjustments	-0.838	-0.008		
Sec 8135 Business Process Reform		-0.003		
Sec 8109 IT Cost Growth		-0.001		
Subtotal	4.891	-0.016		

(U) Schedule:

OT-IIB scheduled for 1Q/02 has been re-scheduled for two separate testing events: OT-IIIA for surface ships in 4Q/04 and OT-IIB for submarines in 1Q/04.

(U) Technical:

Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE: 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME X0731 Fleet Satellite Comm
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(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost
3050 – Comm Auto - SCI NETWORKS*	10.879	11.499	0.959	0.825	4.542	4.659	4.599	4.663	Continuing	Continuing
3215 – SATCOM - DMR	5.035	2.038							Continuing	7.073
3215 – SATCOM - JMINI-NMS	15.476	6.160	9.425	6.427					Continuing	37.488

*Includes terminal installation costs.

(U) E. ACQUISITION STRATEGY:

SCI-NETWORKS: Program is utilizing Cost Plus Fixed Fee contract vehicle. OPN SATCOM: Program is utilizing Cost Plus Fixed Fee and Cost Plus Incentive Fee contract vehicle.

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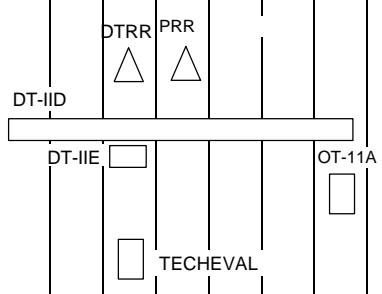
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE: 0303109N Satellite Communications (Space)			X0731 Fleet Satellite Comm						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PO	SSC SD	1.905								1.905	
Operational Test & Evaluation	MIPR	OPTEVFOR	0.238								0.238	
Operational Test & Evaluation	Var	Various	9.296								9.296	
Operational Test & Evaluation	PO	SSC CH	1.731								1.731	
Operational Test & Evaluation	CPAF	BAH	0.591								0.591	
Award Fees											0.000	
Subtotal T&E			13.761	0.000		0.000		0.000		0.000	13.761	
Remarks:												
Contractor Engineering Support	CPFF	CSC	3.588								3.588	
Contractor Engineering Support	CPFF	ACS	0.674								0.674	
Government Engineering Support	PO	NAVAIR	1.176								1.176	
Government Engineering Support	Var	Various	9.896								9.896	
Government Engineering Support	PO	SSC CH	0.300								0.300	
											0.000	
Subtotal Management			15.634	0.000		0.000		0.000		0.000	15.634	
Remarks:												
Total Cost			98.076	0.653		0.585		1.468		0.000	100.782	
Remarks:												

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EXHIBIT R4, Schedule Profile																									DATE: Febuary 2003							
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										PE: 0303109N Satellite Communications (Space)										X0731 Fleet Satellite Comm - DMR												
Fiscal year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Prototype Phase																																
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery 5XXSW Delivery																																
Test & Evaluation Milestones																																
Test Readiness Review																																
Development Test																																
Operational Test																																
Technical Evaluation																																
Production Milestones																																
LRIP I																																
LRIP II																																
FRP																																
Deliveries																																
LRIP II Delivery																																



R-1 SHOPPING LIST - Item No. 192

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

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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT PE: 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME X0731 Fleet Satellite Comm - DMR			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Developmental Test Readiness Review (DTRR)	3Q							
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)	4Q							
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)		3Q						
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)	3Q							
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery	1Q							
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								
Developmental Testing (DT-IID)	1Q continue	through 3Q						
Developmental Testing (DT-IIE)	3Q							
Software Delivery 5XXSW								

R-1 SHOPPING LIST - Item No.

192

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Exhibit R-4a, Schedule Detail

(Exhibit R-4a, page 21 of 39)

UNCLASSIFIED

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EXHIBIT R4, Schedule Profile																										DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-7										PE: 0303109N Satellite Communications (Space)										X0731 Fleet Satellite Comm - JMINI												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Prototype Phase																																
System Development																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones																																
System Upgrade Fielding																																

R-1 SHOPPING LIST - Item No. 192

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003											
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0303109N, Satellite Communications (Space)										PROJECT NUMBER AND NAME X0731, FLT SATCOM / SCI NETWORKS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones	MS IIIA Surface ▲								MS IIIB Submarine ▲				MS IIIC Surface/ Submarine ▲																							
Test & Evaluation Milestones					DT IIIA Lab Test for SW ↓				DT IIIB Lab Test				DT IID Techeval Sub ↓				DT IIIC ↓																			
Development Test					□				□				□				□																			
Operational Test									□				□																							
Production Milestones									OT IIB Submarine				OT IIIA																							
Deliveries																																				

R-1 SHOPPING LIST - Item No. 192

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME X2472 Mobile User Segment					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	58.383	34.411	59.018	315.801	428.177	243.464	118.507	221.182	73.246	89.000	1,641.189
RDT&E Articles Qty											0
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
<p>(U) This program provides for the development of the next generation DoD narrowband communications satellite constellation, the Mobile User Objective System (MUOS).</p> <p>(U) The current UHF Follow-On (UFO) constellation is expected to degrade below acceptable availability parameters and will require phased replacement by FY 2008. In addition, new user requirements have been identified and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrating Integrated Product Team (IIPT) has developed an acquisition strategy to address the exponential growth of narrowband communications demands, as defined in the MUOS joint interest Operational Requirements Document (ORD). This program builds on state of the art technologies and commercial practices to develop a comprehensive joint warfighter system.</p> <p>(U) This RDT&E effort supports the program objectives by assisting in identifying the most effective way to field a new system by FY 2008. Two Component Advanced Development (CAD) contracts were awarded in Q4 FY 2002. The CAD contracts will continue through FY 2003. In FY 2004, a single Risk Reduction & Design Development (RRDD) contract will be awarded after Key Decision Point (KDP) B in Q2 FY 2004.</p>											

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 26 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME X2472 Mobile User Segment

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	34.411	59.018	315.801	428.177
RDT&E Articles Quantity				

(U) FY02: Awarded MUOS CAD contracts and associated engineering tasks.

(U) FY03: Fully fund MUOS CAD contracts and associated system engineering tasks.

(U) FY04: Award MUOS Risk Reduction and Design Development (RRDD) contract and fund associated system engineering tasks.

(U) FY05: Continue funding for MUOS RRDD contract and associated system engineering tasks.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME X2472 Mobile User Segment			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		37.369	60.526		
Current BES/President's Budget		34.411	59.018	315.801	428.177
Total Adjustments		-2.958	-1.508		
Summary of Adjustments					
Management Reform Initiative (Sec 8123)		-0.330			
FFRDC		-0.006	-0.048		
FY2002 Miscellaneous Adjustments		-0.748			
Economic Assumptions (Sec 8135)		-0.098	-0.339		
Business Process Reform (Sec 8100)			-0.242		
IT Cost Growth (Sec 8109)			-0.111		
Federal Technology Transfer		-0.018			
Revised Economic Assumptions (Sec 313 P.L 107-206)		-0.079			
MUOS (SBIR)		-0.958			
BTR (.376 for retest of JFK BFIT and .345 for IT/IO and space operational efforts		-0.721			
Miscellaneous Department Adjustments			-0.768		
Subtotal		-2.958	-1.508	0.000	0.000
(U) Schedule:					
MUOS Program Milestone A moved from 3rd Qtr 02 to 4th Qtr 02. Award of two MUOS CAD contracts moved from 3rd Qtr 02 to 4th Qtr 02. (X2472).					
(U) Technical:					
Not Applicable					

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME X2472 Mobile User Segment				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
2433 - Fleet Satellite Communications Follow-on				362.255	482.791	496.402	571.773	550.375	2198.6	4662.2
 (U) E. ACQUISITION STRATEGY: *										
<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 will be awarded in early FY 2004 with production option in FY 2005 and first launch in FY 2008.</p>										
 (U) F. MAJOR PERFORMERS: **										
N/A										

R-1 SHOPPING LIST - Item No. 192

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N Satellite Communications (Space)			X2472 Mobile User Segment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MUOS Contracts and Demos	COM/FFP		57.139	50.064	1Q	307.000	2Q	415.739	1Q	726.548	1,556.490	1,336.239
UFO Digital Receiver	FFP		18.200								18.200	18.200
AoA for MUOS	MIPR		2.782								2.782	
Government Studies	VAR		0.711								0.711	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			78.832	50.064		307.000		415.739		726.548	1,578.183	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support			0.301	0.215				0.260		0.396	1.172	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.301	0.215		0.000		0.260		0.396	1.172	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N Satellite Communications (Space)			X2472 Mobile User Segment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Contractor Engineering Support	VAR		8.010	4.585		4.000		6.920		10.484	33.999	
Government Engineering Support	VAR		1.400	0.506		1.000		1.210		1.833	5.949	
Program Management Support	VAR		4.251	3.248		3.600		3.848		5.528	20.475	
Travel				0.400		0.201		0.200		0.450	1.251	
Transportation											0.000	
Subtotal Management			13.661	8.739		8.801		12.178		18.295	61.674	
Remarks:												
Total Cost			92.794	59.018		315.801		428.177		745.239	1,641.029	
Remarks:												

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 31 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)								PROJECT NUMBER AND NAME X2472 - Mobile User Segment																						
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009													
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4										
Acquisition Milestones				MS A ▲								KDP-B ▲																														
System Development							SRR ▲																																			
Launch																																										
Ground Systems																																										
Test & Evaluation Milestones																																										
Development Test								ES ◇																																		
Operational Test																																										
Production Milestones																																										
LRIP I																																										
LRIP II																																										
FRP																																										
Deliveries																																										

R-1 SHOPPING LIST - Item No. 192

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

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&BA-7	PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME X2472 Mobile User Segment			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A	4Q							
Component Advanced Development (CAD)	4Q	1Q-4Q						
Early Operational Assessment (EOA)			1Q					
System Requirements Review		2Q						
Evaluation Strategy (ES)		1Q						
System Design Review (SDR)			1Q					
Key Decision Point B			2Q					
Preliminary Design Review (PDR)			4Q					
Test and Evaluation Master Plan (TEMP)		4Q						
Developmental Testing (DT)/Operational Testing (OT-1)			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q	
Key Decision Point C				4Q				
Critical Design Review (CDR)				4Q				
Operational Assessment (OA-I)				2Q				
Test and Evaluation Master Plan (TEMP) Update				3Q				
Risk Reduction and Design Development (RRDD)			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q
Production & Development (P&D)				4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Launch 1 (M1)							3Q	
Ground System (1)							3Q	
Mission Readiness Review (MRR)							1Q	
IOC							4Q	
Launch 2 (M2)								3Q
Ground System (2)								3Q
Operational Assessment (OA-II)							1Q	
Test and Evaluation Master Plan (TEMP) Update							1Q	
Operational Test Readiness Review (OTRR) for MOT&E							3Q	
Developmental Testing (DT-IIA) (On-Orbit)							2Q	
Multi-Service Operational Testing & Evaluation ((OPEVAL) (MOT&E)							3Q-4Q	
Follow-On Test Evaluation (FOT&E)								2Q-4Q

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME X9122 Advanced Wideband System					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	5.854	12.706	18.599	36.261	70.517	71.853	73.195	Continuing	Continuing
RDT&E Articles Qty						4	12				16

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

(U) The Navy Advanced Wideband 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/Ka-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X9122 Advanced Wideband System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
AWS Concept Development		5.854	12.706	18.599
RDT&E Articles Quantity				

(U) FY03: Begin development of wideband tactical, protected tactical, and broadcast terminals to operate with Advanced Wideband System (AWS). Begin development of strategic terminals that will operate with the protected satellites in mid-latitude and polar regions. Development will include concept exploration and systems engineering studies and analysis. These studies and analysis will determine optimum methods to implement software programmable, modular, reconfigurable, and upgradeable SATCOM terminals. They will also investigate multi-band feed and phased array options. Terminal modem concepts will also be explored. Risk areas will be explored and documented. Terminal designs will be explored to mitigate these risk areas.

(U) FY04: Continue concept exploration systems engineering studies and analysis. Build and test prototype systems components including the multiband feed assemblies, multiband Radio Frequency (RF) equipment, multiband antenna radome for Radar Cross Section reduction and RF transmissibility, and fast acting multi-antenna switching systems. FY 2004 goals are to validate component designs for migration to system level inclusion.

(U) FY05: Migrate component prototypes tested in FY 2004 into a system level design. Begin system level engineering process to determine optimal tradeoffs between cost and performance. Build prototypes of system level components (multi band antenna system, multi-band IF and RF generation systems) and test.

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME X9122 Advanced Wideband System			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	6.000		
Current BES/President's Budget		0.000	5.854	12.706	18.599
Total Adjustments		0.000	-0.146		
Summary of Adjustments					
Business Process Reform			-0.024		
Economic Assumptions			-0.034		
IT Cost Growth			-0.011		
Miscellaneous Department Adjustments			-0.077		
Subtotal		0.000	-0.146	0.000	0.000
(U) Schedule:					
Schedule profile has not yet been developed by the program office because the Acquisition Strategy Report (ASR) has not been drafted. The ASR is used as a basis for the schedule profile. For this reason, schedule profile exhibits are not included in this submit.					
(U) Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)			PROJECT NUMBER AND NAME X9122 Advanced Wideband System				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
321500 - OPN Ship and Shore*	NA	NA	NA	NA	NA	NA	25.400	95.000	312.932	433.332
 (U) E. ACQUISITION STRATEGY: *										
TBD until the system architecture is defined by the ongoing Transformational Communication Study.										
 (U) F. MAJOR PERFORMERS: **										

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N - Satellite Communications (Space)			X9122 Advanced Wideband System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	TBD	NA	0.000	NA	9.774	11/03	14.685	11/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	TBD	Various		1.112						Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.112		9.774		14.685		Continuing	Continuing	
Remarks:												
Development Support	TBD	Various		0.340		0.977		1.468		Continuing	Continuing	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	TBD	Various		3.420		0.977		1.468		Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	3.760		1.955		2.936		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303109N - Satellite Communications (Space)			X9122 Advanced Wideband System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
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	TBD	Various		0.894		0.977		0.979		Continuing	Continuing	
Travel				0.088						Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.982		0.977		0.979		Continuing	Continuing	
Remarks:												
Total Cost			0.000	5.854		12.706		18.599		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 192

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 39 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE 0303140N Information Systems Security Program (ISSP)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	130.541	26.447	23.665	18.404	19.190	18.203	21.849	22.248	22.656	Continuing	Continuing
X0734 Information Systems Security	130.541	24.037	15.035	16.107	16.642	15.591	18.692	19.045	19.404	Continuing	Continuing
R0734 Information Assurance	0.000	0.000	2.904	2.297	2.548	2.612	3.157	3.203	3.252	Continuing	Continuing
X2987 Intelligent Agent Security Module	0.000	2.410	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.410
X9280 KG-40A Modernization Program	0.000	0.000	1.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.283
X9281 Intelligent Agent Security Module	0.000	0.000	4.443	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.443
Quantity of RDT&E Articles											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
<p>(U) 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. 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 5200.28. 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 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 service critical to the effective performance of the Navy's mission.</p> <p>(U) The interconnectivity of Naval networks, attachment to the public information infrastructure, and their use in modern Naval and Joint war fighting means that the Naval Information Infrastructure (NII) is a higher value and more easily attainable 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 systems face advanced attacks involving malicious changes to critical information, changes to the functioning of critical systems, denial of service, and the destruction of systems and networks. Since many Navy information systems are based on commercially available technologies, an adversary often has access to the very technologies they want to exploit.</p> <p>(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, 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.</p>											

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0303140N Information Systems Security Program (ISSP)	
<p>(U) The Navy ISSP RDT&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&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. Modeling DOD and commercial information systems evolution (rather than being one-time developments), the ISSP RDT&E program must be predictive, adaptive, and technology coupled. The program develops frameworks, architectures, and products based on mission threats, information criticality, exploitation risks, risk management, and integrated Joint information system efforts.</p> <p>(U) All ISSP RDT&E efforts comply with the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) as implemented through Office of Management and Budget 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. During meetings held with OPNAV N64 in March 2001, the ISSP established a revised goal and objective set that resulted in the creation of the Mission Capability Teams (MCT). This resulted in reorganization of the ISSP budget structure which facilitates the continuance of ISSP RDT&E efforts.</p> <p>(U) The interconnection of USN and the NII requires all ISSP RDT&E activities to adopt a minimum standard of "best commercial IA practice." The ISSP RDT&E program examines commercial technologies to determine their fit within the USN architectures, provides feedback to vendors about what the Navy requires, and participates in the standards bodies themselves. When necessary to protect mission critical systems specified in Clinger/Cohen Act, the ISSP RDT&E develops or tailors commercial 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 of existing, operational systems.</p>		

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification										DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME X0734 Information Systems Security						
COST (\$ in Millions)			Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost			130.541	24.037	15.035	16.107	16.642	15.591	18.692	19.045	19.404	Continuing	Continuing
RDT&E Articles Qty													
<p>(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. The Network-Centric afloat war fighter must rely 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.</p> <p>(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 Maritime Cryptologic Architecture. ISSP RDT&E developed systems can provide the trigger for offensive warfare activities, such as those developed by the Naval Information Warfare Activity (NIWA).</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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, as either Multiple Security Level (MSL) or Multi-Level Security (MLS); (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).</p> <p>(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.</p>													

R-1 SHOPPING LIST - Item No. 193

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 3 of 46)

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
<p>(U) The ISSP RDT&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 misuse and network Intrusion Detection Systems (IDS).</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 develops 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.</p> <p>(U) The following describes several major ISSP technology areas:</p> <p>(U) Under the Navy Secure Voice (NSV) program, ISSP RDT&E assesses technology to provide high grade, secure tactical and strategic voice connectivity.</p> <p>(U) Under the Navy Security Management Infrastructure (SMI) program, ISSP RDT&E develops, evaluates, and applies new emerging technology and enhanced capabilities to the Electronic Key Management System (EKMS) 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 Navy distributed information systems (e.g., Information Technology for the 21st Century (IT-21), new total ship computing environments, and the Navy Marine Corp Intranet (NMCI). This portion of the ISSP supports delivery of network security engineering expertise needed to stand-up the NMCI and securely deploy IT-21 constituent systems such as Advanced Digital Network System (ADNS), Global Command and Control System - Maritime (GCCS-M) and Base Level Information Infrastructure (BLII). It includes activities to:</p> <ul style="list-style-type: none">• Ensure that USN IA systems and networks follow a consistent architecture and are protected against denial of service.• Ensure that all data within the USN Enterprise is protected in accordance with its classification and mission criticality.• Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event.• Enable dynamic throttling of services due to change in risk posture resulting from changing Information Operation Conditions (INFOCONs).• Defend against the unauthorized modification or disclosure of data sent outside enclave boundaries.• Provide a risk-managed means of selectively allowing essential information to flow across the enclave boundary.• Provide strong authentication of users sending or receiving information from outside their enclave.• Defend against the unauthorized use of a host or application.• Maintain configuration management of all hosts to track all patches and system configuration changes.• Ensure adequate defenses against subversive acts of trusted people and systems. both internal and external.		

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 4 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
<ul style="list-style-type: none">• Provide a cryptographic infrastructure that supports key, privilege and certificate management; and that enables positive identification of individuals utilizing network services.• Provide an intrusion detection, reporting, analysis, assessment, and response infrastructure that enables rapid detection and reaction to intrusions and other anomalous events, and that enables operational situation awareness. <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>		

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Network Security Mission Capability Team (MCT)	8.069	6.292	2.613	2.963
RDT&E Articles Quantity				

FY02 Accomplishments include:

\$1.562 - Continued developing and testing distributed IA solutions for Navy information systems. This included the examination and selection of next generation IA components required by the architectures which included firewalls, intrusion detection systems (including host-based systems), virtual private networking systems, public key based secure e-mail and web systems, operating systems and others as well as high assurance components for connection of Top Secret and Sensitive Compartmented Information (SCI) systems to lower level systems. Also examined, evaluated and demonstrated next generation network security appliances, specifically focusing on increasing performance rates to Optical Carrier Rate 12 (OC-12 = 622.08 Million Bits per Second (Mbps)) and greater. Continued to support the design of situational awareness and visualization capabilities to support active computer network defense and the development of a sensor grid with underlying data mining and correlation tools. Developed capability to remotely manage and securely control the configurations of network security components to implement changes in real time or near real time. Continued to prototype components at selected operational sites.

\$1.160- Worked toward the Defense Advanced Research Projects Agency (DARPA) sponsored Common Intrusion Detection Framework (CIDF) object model. Conducted experiments and prepared protection profiles for Fleet Enclave boundary with Intrusion Detection System (IDS) driven auto-responding security policy. Continued integration of USN deployed afloat and ashore network security systems into the Joint (Commander-in-Chief Space Command (CINCSpace), Joint Task Force – Computer Network Defense (JTF-CND)) IA common operating picture (IA-COP). Demonstrated the ability to share common IA enclave protection profiles definitions in response to Information Operations Condition (INFOCONs). Expanded activities of the Fleet Information Warfare Center (FIWC) IDS correlation process, Navy Component Task Force – Computer Network Defense, and the unification of the USN enterprise network operational status with the currently separate IA alarm status. Continued to explore IDS alternatives to existing USN deployed pattern-recognition-based intrusion detection systems. Other continuing tasks include: (1) expanding IDS requirements to address detection of both network misuse and intrusion, (2) market surveys of emerging agent and other sensor based IDS products focusing on CIDF Framework standards, (3) defining architectures that optimize IDS monitoring while minimizing sensor count, (4) mobile subscriber, forward deployed and shipboard IDS techniques and products, (5) native Asynchronous Transfer Mode (ATM), Signaling System Seven (SS7), sensors and alarm definitions, (6) workstation (personal) IDS techniques and products, and (7) build upon IDS capabilities included in existing commercial-off-the-shelf operating systems. Moreover, continued to work closely with the National Security Agency (NSA) and the Naval Information Warfare Activity (NIWA) to develop electronic infrastructure defense rules of engagement (ROE) that maximize the probability of protection mission success. Specific tasks included: (1) defining potential rules of engagement for automatic response to attack, (2) modeling and war gaming of auto-defend and manual-defend scenarios, (3) optimal selection of methods, (4) Command, Control, Computers, Communications, and Intelligence (C4I) support plan, (5) battle damage assessment plan, and (6) assessment modeling of impact to overall USN enterprise. Response capabilities included localized automatic and manual defensive and authorized active engagement to include the ability to quantitatively describe attack recovery (fratricide and hostile).

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 6 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security

\$1.740 - Continued the evolutionary development of security architectures for IA that include virtually all Navy distributed information system development programs. Ensured the architectures evolve to provide proper protection as technology, DOD missions, and the threat all evolve. Provided inputs to the major Navy and joint initiatives that are defining and building distributed systems including shipboard networks (IT-21), Navy Marine Corps Intranet (NMCI), the Joint Technical Architecture (JTA), Global Command and Control System – Maritime (GCCS-M), Global Command and Control System (GCCS), Defense Messaging System (DMS), Automated Digital Network System (ADNS), Base Level Infrastructure Improvement (BLII), and others. Included both defensive protections as well as intrusion monitoring in the architecture.

Continued IA engineering, product selection assistance, and certification and accreditation support to Navy information system developments such as shipboard networks IT-21, NMCI, JTA, GCCS-M, GCCS, DMS, ADNS, BLII new ship construction (e.g. (NSSN, LPD-17, SCN-21...), Maritime Cryptologic System for the 21st Century (MCS-21), and others. Ensured IA integration at the earliest stage possible in the development process. Focused on integration of the proper functions to ensure adherence to the common security architectures. Ensured that the security and performance of the tactical systems, including those operating at Top Secret and at Sensitive Compartmented Information (SCI), were consistent with Navy and DOD requirements.

\$0.967 - Prepared and tested lab model of a common criteria transition program that moved existing USN IA products and architectures to the newly required Common Criteria certified products and architectures, as published in March 2000 by the National Security Telecommunications and Information Systems Security Committee (NSTISSC), publication National Policy Governing the Acquisition of IA and IA-Enabled Information Technology Products" (NSTISSP No. 11).

\$0.436- Conducted unclassified wireless local area network (LAN) products program testing and prepared protection profile for shipboard, office, and limited field use. Tasks included: (1) vulnerability testing of several common products (such as specifically within USN architectures), (2) security issues related to distributed antenna distribution within command centers and large offices, (3) configuration guidance for general use of the Wired Equivalent Privacy (WEP) protocol, and (4) completing a protection profile for "Wireless Network devices (access points and clients) used on Unclassified Networks."

\$0.445 - Continued developing and updating IA standards and engineering guidance to ensure that they were consistent with the security architecture, the rapidly changing technology, and the evolving threat. Emphasized the paralleling of USN IA guidance to match the overall DoD Information Assurance Technical Framework (IATF). This included rapid guidance publication in response to Fleet-demanded new technologies which is usually several years prior to release of a CC protection profile. Worked closely with the Naval Postgraduate School to define a working set of IA metrics applicable to the USN enterprise. The goal was to work toward a Quality of IA value that is quantitative in nature, measurable, and optimizable. Tasks included: (1) defining current IA state vectors, (2) defining cost values, (3) defining reliability values, (4) defining availability values, and (5) defining the Quality of IA value as stochastic model, and enterprise implementation modeling and measurements.

\$0.484 - Prepared protection profile for current Fleet enclave and shipboard security architectures for IA that included virtually all Navy distributed information system development programs. Continued refining an overall USN-wide enclave boundary policy, expanding upon the OPNAV N64 USN firewall policy into a comprehensive mobile subscriber enclave IA plan. Ensured the architectures evolved to provide proper protection as technology, DOD missions, and the threat all evolved. Provided inputs to the major Navy and joint initiatives that are defining and building distributed systems including shipboard networks (IT-21), the Navy Marine Corps Intranet (NMCI), the Joint Technical Architecture, Maritime Cryptologic Architecture, and large development programs including Global Command and Control System – Maritime (GCCS-M), Global Command and Control System (GCCS), Defense Messaging System (DMS), Automated Digital Network System (ADNS), Base Level Infrastructure Improvement (BLII)and others. Specific tasks included: (1) technical requirements development, (2) architecture and campaign plan preparation, (3) policy framework documentation, (4) application to surface, subsurface, air, and first-ashore forces maintaining connectivity to shipboard and ashore networks, and (5) coordination with Fleet components.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security

\$1.275 - Conducted a detect-respond experiment as part of a Fleet Battle Experiment in support of the Joint Task Force – Computer Network Defense (JTF-CND) and the Navy Component Task Force – Computer Network defense (NCTF-CND). Worked closely with the National Security Agency and the Naval Information Warfare Activity, fielded a test model of the electronic infrastructure that implemented defense rules of engagement (ROE) that maximized the probability of protection mission success. Tasks included: (1) defining potential rules of engagement for automatic response to attack, (2) modeling and war gaming of auto-defend and manual-defend scenarios, (3) optimal selection of methods, (4) Command, Control, Computers, Communications, and Intelligence (C4I) support plan, (5) battle damage assessment plan, and (6) assessment modeling of impact to overall USN enterprise. Capabilities included localized automatic and manual defensive and authorized active engagements. Included the ability to quantitatively describe attack recovery (fratricide and hostile).

FY03 Plans include:

\$6.292- Continue to provide the broadest range of Information Assurance research across Joint, Fleet, and ashore networks. Applications include unclassified through TOP SECRET networks, while closely coordinating with TOP SECRET/SCI network requirements to ensure the broadest common solution. Provides robust design and evaluation for improved security product performance to accommodate higher speeds, more complicated architectures, and the ever-increasing threat. Focus becomes more and more on risk management approaches against state-sponsored network attack while preventing the nuisance disruption caused by the computer hacker community. Includes close work, design review, and operational testing with the Fleet CINCs to ensure that the IA infrastructure is available to enforce evolving critical infrastructure protection policies, including support for Fleet Battle Experiments and other short-reaction demonstrations.

Major emphasis includes early security design engineering of new ships, aircraft, and submarines to ensure that the reduced manning and greater operational dependency on networks. Provides for systems security engineering design, modeling, technical evaluations and designs, testing design and validation, and continuing COTS and GOTS evaluations and recommendations. Coordinates integration of secure design, testing, and products into new platforms and systems.

Design, modeling, and testing efforts are closely coordinated with the Joint Task Force – Computer Network Defense, the Defense Advanced Research Projects Agency, the new Commander, Naval Task Force – Navy Marine Corps Intranet, Commander, Naval Security Group Command, and the Fleet Information Warfare Center. Works design architectures and evaluation methods through the Information Assurance Technical Framework forum, the Internet Engineering Task Force, and other Information Assurance organizations.

For the first time, ISSP is applying IA engineering design, 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 Information Assurance appliances, software, and implementation techniques for policies such as IAVA requirements, INFOCON response, and USN firewall policy. This requires close engineering coordination with Information Operations activities, Exploit and Attack, to ensure coordination and fratricide prevention, network or RF path based. It includes engineering modeling and design of systems used in the isolation of network intrusion or attack from degradation caused by Electromagnetic Interference (EMI/RFI).

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
<p>FY04 Plans include: \$2.613- Continue to design, development and evaluation for improved security product performance to accommodate higher speeds, more complicated architectures, and the ever-increasing threat. Focusing on approaches and products against state-sponsored network attack while preventing the nuisance disruption caused by the computer hacker community. Includes product development and operational testing with the Fleet CINCs to ensure that the IA infrastructure is available to enforce evolving critical infrastructure protection policies, including support for Fleet Battle Experiments and other short-reaction demonstrations. Continue to provide security & test design, modeling, validation and integration engineering of network security COTS and GOTS into new ships, aircraft, submarines and systems.</p> <p>FY05 Plans include: \$2.963- Continue to provide the broadest range of Information Assurance research across Joint, Fleet, and ashore networks. Applications include unclassified through TOP SECRET networks, while closely coordinating with TOP SECRET/SCI network requirements to ensure the broadest common solution. Provides design and evaluation for improved security product performance to accommodate higher speeds, more complicated architectures, and the ever-increasing threat. Continue to provide security design engineering of new ships, aircraft, and submarines to ensure that the reduced manning and greater operational dependency on networks. Provides for systems security engineering design, modeling, technical evaluations and designs, testing design and validation, and continuing COTS and GOTS evaluations and recommendations. Coordinates integration of secure design, testing, and products into new platforms and systems. Continue to provide IA engineering design, 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 Information Assurance appliances, software, and implementation techniques for policies such as IAVA requirements, INFOCON response, and USN firewall policy.</p>		

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
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	FY 02	FY 03	FY 04	FY 05
Crypto MCT	10.983	3.837	4.996	4.060
RDT&E Articles Quantity				

FY02 Accomplishments include:

\$3.417- Continued development of a digital modular cryptographic design solution based on multi-channel, programmable technology. Entered certification and accreditation (C&A) cycle with the National Security Agency (NSA) for first item Multipurpose Cryptographic Unit (MCU) that will replace aging cryptographic equipment where the USN is either the sole or lead user. Expanded algorithm capability to Joint common legacy systems. Fully defined the first 4 interface specifications, and prepared specification and an RFP for release. Supported the Communications Security (COMSEC) equipment certification process, including the conduct of analyses required and the development of associated documentation. Also performed analysis and documentation required for software algorithm certification. These efforts were fully coordinated with the National Security Agency.

\$5.307 - Continued the development of Electronic Key Management System (EKMS) Phase IV for Tier 1, Tier 2, Tier 3 and to ensure compatibility with Tier 0. Continued to research and investigate new key management technologies. Demonstrated web-based technology and exchange capabilities. Demonstrated integration of certificate management and key management directory structures and workstation functions. Demonstrated prototype of the Navy Single Point Command, Control, and Keying (NSPC2K) design and solution for Navy platforms. Continued to support development of the DTD 2000, and continue to provide key management support for embedded cryptographic technology and cryptographic replacement efforts. Conducted laboratory assessments of the latest NSA and commercial-off-the-shelf key management technology and products. Provided systems security, Certification and Accreditation (C&A), engineering, and testing for key management components and systems.

\$0.760 - Conducted analysis for Data Transfer Device (KOV-21), Single Point Keying, Netted Re-keying and Modular KOK-22 development. Conducted Security Testing, engineering and integration analysis for EKMS.

\$0.967 - Continued the design, development, evaluation and application of class 4 and 5 public key and certificate management infrastructure technologies and systems to support DoD and DON initiatives, including integration with IT-21 and other new ship initiatives. Continued to work closely with the commercial developers and vendors, infused technology and requirements into the commercial products, and supported efforts to PKI-enable specific applications. Continued to evaluate, assess, integrate and demonstrate related technologies including smart card security tokens and Virtual Private Networks (VPNs).

\$0.242 - Began key management architecture for forward-deployed tactical and shipboard "lights-out" or minimal crew communications centers. The effort included architectures for platforms such as DD-21 and VA-Class submarines. The architectures and interfaces of systems such as Electronic Key Management System (EKMS), Public Key Management (PKI), and Certificate Management Infrastructure (CMI) were analyzed to determine how isolated automated systems could be used to handle electronic keying, authentication, and code confirmation tasks.

\$0.290 - Prepared protection profile and define key management architecture for secure wireless Ethernet Local Area Network (LAN).

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security

FY03 Plans include:

\$3.837- Provide cryptographic products, 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. Includes design, integration, and testing of new cryptographic modules, USN-unique and USN-lead-service high-assurance algorithm software development, module hotel support, and protocol and control interface functions. Provides engineering design evolution for the supporting key management infrastructure, including the Electronic Key management System (EKMS Phase IV for Tier 0,1,2,3), Defense Messaging System (DMS) specific products, the DOD Public Key Infrastructure (DOD-PKI), and additional Certificate Management Infrastructures (CMI). Includes design, evaluation, integration, and testing of key-related platforms, such as smart cards, and authentication mechanisms, such as biometric devices. Provides systems security engineering, test, evaluation, and development program support for organizations utilizing cryptographic equipments and associated keying systems. Provides continuous development coordination with the DoD PKI program office, the DON Smart Card office, the US Army biometrics program office, and the Information Systems Security Office at the National Security Agency. Provides specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Includes development, modeling, testing, and deployment evaluation 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 architectures. This year's efforts expand to cover increased support for embedded cryptographic products in DD(X) and JTRS.

FY04 Plans include:

\$4.996- Continue to provide cryptographic products, 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. Includes design, integration, and testing of new cryptographic modules, USN-unique and USN-lead-service high-assurance algorithm software development, module hotel support, and protocol and control interface functions. Provides continuous development coordination with the Information Systems Security Office at the National Security Agency. Provides specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Includes development, modeling, testing, and deployment evaluation 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 architectures. This year's efforts expanded to cover increased support for embedded cryptographic products in DD(X) and JTRS.

FY05 Plans Include:

\$4.060- Continue to provide cryptographic products, 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. Includes design, integration, and testing of new cryptographic modules, USN-unique and USN-lead-service high-assurance algorithm software development, module hotel support, and protocol and control interface functions. Provides continuous development coordination with the Information Systems Security Office at the National Security Agency. Provides specific design, testing, and evaluation assistance for new USN platforms and assists in defining embedded cryptographic product engineering requirements. Includes development, modeling, testing, and deployment evaluation 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 architectures. This year's efforts expanded to cover increased support for embedded cryptographic products in DD(X) and JTRS.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 11 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

	FY 02	FY 03	FY 04	FY 05
Information Assurance Readiness MCT	1.451	2.222	0.276	0.313
RDT&E Articles Quantity				

FY02 Accomplishments include:

\$0.484 - Continued vulnerability/threat assessments and development and systems integration of network countermeasures tools (NVACM) efforts.

\$0.580 - Began consolidating computing base and data store vulnerabilities program. Focused this year activities on securing delivery of tactical/command mobile code. Included the common DoD used forms of computer operating systems and mobile code. Tasks included: (1) expansion of techniques to other operating systems, including public and private operating systems, (2) trusted code delivery, (3) enclave mobile code repository, (4) database entry assurance, and (5) other emerging uses and users. Built configuration guidance for server-to-server trust relationships.

\$0.387 - Updated the methods and tools for the afloat Certification and Accreditation (C&A) red-team. Revised experimental model and analyzed network performance impacts. Formalized the experimental model based upon OPNAV red-team goals. Established firm statistical model for team data gathering. Tasks included: (1) experimental model, including statistical estimation moment minimum values, (2) defining statistical methods, including random selection regime, (3) population definition, (4) data collection method and common worksheet, and (5) statistical analysis framework.

FY03 Plans include:

\$2.222- 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. Involves work with all delivering USN systems to ensure secure networks before operational testing. C&A activities include networks, applications, sensors, and databases. Supports the Fleet Information Warfare Center (FIWC), the Naval Security Group Activity Pensacola, and the CTF-NMCI for continuing CNVA activities. Includes the development and maintenance of USN infrastructure security policy. Includes systems security engineering, testing, and evaluation supporting other organizations during development of the Systems Security Accreditation Agreement (SSAA) and supporting activities of the Certification Authorities and Designated Accreditation Authorities during the DoD Information Technology Security Certification and Accreditation Process (DITSCAP). Includes development of network countermeasures tools (NVACM), in close coordination with the Naval Information Warfare Activity. Supports development of validation methods, including tools provided to the USN RED TEAMS and NMCI contract SLA validation teams.

FY04 Plans include:

\$0.276- 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. Involves work with all delivering USN systems to ensure secure networks before operational testing. C&A activities include networks, applications, sensors, and databases. Supports the Fleet Information Warfare Center (FIWC), the Naval Security Group Activity Pensacola, and the CTF-NMCI for continuing CNVA activities. Includes the development and maintenance of USN infrastructure security policy.

FY05 Plans include:

\$0.313- 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.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

	FY 02	FY 03	FY 04	FY 05
Secure Voice MCT	2.268	1.946	0.828	0.939
RDT&E Articles Quantity				

FY02 Accomplishments include:

\$0.385 - Secure Telecommunication – Internet Protocol (IP) Gateway/Inter-Working Function (IWF). Finalized development efforts for the production release of a secure voice IWF capability between Telecommunication and IP systems. Conducted demonstrations of the Secure Telecommunication – IP Gateway IWF capabilities over operational commercial and Navy communication systems for test and evaluation purposes. Supported production readiness evaluation and environmental testing for new ship construction delivery. Finalized open system design requirements for the initial production specification release of SV-21 architecture.

\$0.479 - Tactical Secure Voice Internet Protocol Server IWF. Released Request for Proposal (RFP) for an Engineering Development Model (EDM) to support the design and integration of tactical shipboard secure voice systems into the SV-21 architecture. Conducted laboratory demonstrations of secure voice interoperation between tactical crypto equipment and Voice over IP (VoIP) conversion capability. Evaluated VoIP technologies within fleet battle experiments over Non-classified IP Routed Network (NIPRNET) and Secret IP Routed Network (SIPRNET) to determine mission critical throughput reliability and impacts on tactical enclave network configurations.

\$0.326 - Secure Voice over Wireless Technologies. From next generation secure voice studies conducted in FY 01, demonstrated and evaluate VoIP using the IEEE 802.11 standard for Wireless Ethernet Protocol (WEP). Conducted operational assessments on the applicability of digital cellular and hand-held satellite secure voice products within the Navy strategic and tactical communication environments.

\$0.498 - Advanced Secure Voice System Development. Continued the design, development and assessment of security solutions/capabilities for SV-21 architecture applicable to strategic and tactical communication integration. Conducted research on developing secure voice technologies and techniques for secure voice over government and commercial communications backbones, specifically addressing Asynchronous Transfer Mode (ATM) technology and voice over data network applications.

\$0.290 - Voice Processing and Biometric Access Consortia. Conducted exploratory research on digital voice processors and voice/speaker recognition technologies. Continued laboratory research on digital voice processing techniques to evaluate voice command and control communication suitability in tactical Navy operational environments. Developed and assessed digital voice-processing techniques for low data rate, multi-rate, and variable rate voice processing algorithms. Supported development of government and industry standards for digital voice processing technologies (e.g., Mixed Excitation Linear Prediction (MELP), in conjunction with joint cryptographic developments.

\$0.290 - Prepared protection profile and specifications for gateway to Secure Terminal Equipment (STE)/Secure Telephone Unit Third Generation (STU-III) Public Switched Telephone Network (PSTN) and Integrated Services Digital Network (ISDN) gateway keying system requirements. Established architecture for user keying and access.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

FY03 Plans include:
 \$1.946- Ensure information superiority through the use of encryption, authentication, and access control mechanisms over Navy mission essential voice circuits. This includes: (1) continued fielding of state of the art secure voice capabilities enabling secure point-to-point, netted, and conference connectivity, (2) ensuring interoperability with legacy secure voice systems, as well as interoperability with other services, agencies and coalition partners, (3) planning for future secure voice capabilities, both ashore and afloat, over tactical radio, data networks and telecommunications networks. Specific programs for FY03 include Secure Voice over Internet Protocol (SVoIP) Data Networks, Secure Voice Gateways and Inter-Working Functions (IWF), Tactical Radio Communication Security, Telecommunication Security, and finalizing efforts for Secure Voice for the 21st Century (SV-21) architectures.

FY 04 Plans Include:
 \$0.828- Continue to design, develop 21st Century Secure Voice Architecture including Secure Voice over Internet Protocol (SVoIP) Data Networks, Secure Voice Gateways and Inter-Working Functions (IWF), Tactical Radio Communication Security, Telecommunication Security, and finalizing efforts for Secure Voice for the 21st Century (SV-21) architectures.

FY05 Plans Include:
 \$0.939- Continue development and begin prototype integration of 21st Century Secure Voice Architecture including Secure Voice over Internet Protocol (SVoIP) Data Networks, Secure Voice Gateways and Inter-Working Functions (IWF), Tactical Radio Communication Security, Telecommunication Security, and finalizing efforts for Secure Voice for the 21st Century (SV-21) architectures.

	FY 02	FY 03	FY 04	FY 05
Multiple Security Level MCT	1.266	0.738	0.845	0.959
RDT&E Articles Quantity				

FY02 Accomplishments include:
 \$0.129 - Used current Navy INFOSEC/IA problems (including network security, multi-level security (MLS), public key infrastructure (PKI), tokens, biometrics, intrusion detection and reaction) as the basis for case studies, laboratory work and student thesis research efforts. Acted as a focal point within DoN for advanced education in INFOSEC/IA by creating new and innovative course materials addressing foundational issues in IA, INFOSEC and Computer Security (COMPUSEC). This effort reflects the cumulative and most recent developments from IA theory and practice.
 \$1.137 - Continued to design, develop, and prototype coalition interoperability and multi-level security solutions. Based the solutions on available multilevel security technologies as well as emerging architectural methods of providing interoperability across different security levels. Continued to examine multi-level aware applications and technologies.

FY03 Plans include:
 \$0.738- Continue to provides systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation. Solutions developed will address operator interface, computing and storage, peripherals, access control and credentials, local area networks appliances, wide area networks appliances, and unique IA sensors. Involves substantial efforts ensuring interoperability across commercial and government standards. Includes engineering of voice encoding standards ensuring interoperability between US and allied/coalition voice products. Includes integration of security requirements in the next generation Universal Mobile Telephone services, Generation 3.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security

FY04 Plans include:
 \$0.845-Continue to provides systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation to address emerging threats. Includes engineering of voice encoding standards ensuring interoperability between US and allied/coalition voice products. Continue to develop multi-level security architecture for data transfer services (i.e. E-mail, file sharing , collaboration at SEA for Network Operating Centers (NOC) and US/Coalition afloat platforms. Begin integration of MSL prototype architecture at NOC facilities. Includes integration of security requirements in the next generation Universal Mobile Telephone services, Generation 3.

FY05 Plans include:
 \$.959- Continue to provides systems security engineering development, testing, and evaluation for multi-level security solutions, including complicated evaluations involving allied and coalition participation. Continued to examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Continue to develop and integrate MSL prototype architecture at NOC facilities.

	FY 02	FY 03	FY 04	FY 05
Key Management Infrastructure MCT			4.912	5.551
RDT&E Articles Quantity				

FY04 Plans include:
 \$4.912- Serves 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. Provides engineering design evolution for the supporting key management infrastructure, including the Electronic Key management System (EKMS Phase IV for Tier 0,1,2,3), Defense Messaging System (DMS) specific products, the DOD Public Key Infrastructure (DOD-PKI), and additional Certificate Management Infrastructures (CMI). Includes design, evaluation, integration, and testing of key-related platforms, such as smart cards, and authentication mechanisms, such as biometric devices. Provides systems security engineering, test, evaluation, and development program support for organizations utilizing cryptographic equipments and associated keying systems. Specific projects include: (1) Afloat and OCONUS DoD Class 3/4 PKI, (2) Current Class 4 (X.509) PKI for Organizational Secure Messaging, (3) EKMS Common Tier 1 (CT1), (4) EKMS Tier 2/3, and (5) Key Management Infrastructure (KMI).

FY05 Plans include:
 \$5.551- 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. Provides engineering design evolution for the supporting key management infrastructure, including the Electronic Key management System (EKMS Phase IV for Tier 0,1,2,3), Defense Messaging System (DMS) specific products, the DOD Public Key Infrastructure (DOD-PKI), and additional Certificate Management Infrastructures (CMI). Includes design, evaluation, integration, and testing of key-related platforms, such as smart cards, and authentication mechanisms, such as biometric devices. Provides systems security engineering, test, evaluation, and development program support for organizations utilizing cryptographic equipments and associated keying systems. Specific projects include: (1) Afloat and OCONUS DoD Class 3/4 PKI, (2) Current Class 4 (X.509) PKI for Organizational Secure Messaging, (3) EKMS Common Tier 1 (CT1), (4) EKMS Tier 2/3, and (5) Key Management Infrastructure (KMI).

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security		
	FY 02	FY 03	FY 04	FY 05
Emerging Technology MCT			1.637	1.857
RDT&E Articles Quantity				

FY04 Plans include:
 \$1.637- Facilitates the transition and application of new technologies to Navy Information Assurance challenges. Emphasis will be placed on providing R&D support for programs that are identified by the product mission capability teams as their highest priorities, and on increasing the speed of delivery of useful information assurance capabilities to fleet users. Specific areas of focus will include 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, EC5G, TF WEB, Teleport, SCN and other transition opportunities.

FY05 Plans include:
 \$1.857- Continue to support the transition and application of new technologies to Navy Information Assurance challenges. Emphasis will be placed on providing R&D support for programs that are identified by the product mission capability teams as their highest priorities, and on increasing the speed of delivery of useful information assurance capabilities to fleet users. Specific areas of focus will include 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, EC5G, TF WEB, Teleport, SCN and other transition opportunities.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	20.942	15.453	0.000	0.000
Current BES/President's Budget	24.037	15.035	16.107	16.642
Total Adjustments	3.095	-0.418	16.107	16.642

Summary of Adjustments

EKMS Tier 1	3.486			
Section 8123: Management Reform Initiative	-0.216			
PBD-630 FFRDC	-0.022			
SBIR Assessment	-0.384			
Multi Functional Cryptologic System	2.600			
TFWeb BTR #02-15	-1.371			
JMPS and JC1 Program BTR #02-29	-0.425			
Re-test JFK Battle Group BFIT BTR #02-47	-0.002			
Sec. 313, PL 107-206: Revised Economic Assumptions	-0.049			
Section 8100: Business Process Reform		-0.062		
Section 8135: Economic Assumptions	-0.068	-0.112		
Section 8109: IT Cost Growth	0	-0.028		
FY02 Federal Technology Transfer	-0.012	0		
Section 8029, P.L. 107-248: FY03 FFRDC Reduction	0	-0.021		
Miscellaneous Navy Adjustments	-0.442	0		
Miscellaneous Department Adjustments		-0.195		
Subtotal	3.095	-0.418	0.000	0.000

(U) Schedule:

EKMS Tier 1 IOC has been delayed 3 months until 1st quarter FY03 and FOC until 4th quarter FY03.

(U) Technical:

N/A.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X0734 Information Systems Security
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 3415 Info Sys Security Program (ISSP)	97.267	86.517	81.938	90.816	114.940	123.850	119.337	118.336	Continued	Continued
OPN DERF	15.115									

(U) E. ACQUISITION STRATEGY: *

N/A.

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

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X0734 Information Systems Security						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	VIASAT, San Diego, CA	7.282							0.000	7.282	7.282
Primary Hardware Development	C/MIPR	MITRE, San Diego, CA	3.660	0.916	12/02	0.946	12/03	0.973	12/04	Continuing	Continuing	
Primary Hardware Development	C/CPAF	Motorola, Scottsdale, AZ	2.782	1.274	12/02	1.315	12/03	1.354	12/04	Continuing	Continuing	
Primary Hardware Development	C/VAR	Various	60.936	2.313	VAR	2.386	VAR	2.457	VAR	Continuing	Continuing	
Systems Engineering	C/VAR	Various	33.045	7.064	VAR	7.883	VAR	8.175	VAR	Continuing	Continuing	
Subtotal Product Development			107.705	11.567		12.530		12.959		Continuing	Continuing	
Remarks:												
Software Development	CPAF	SAIC, San Diego, CA	32.877							0.000	32.877	42.590
Software Development	C/WX	NRL, Washington D.C.		0.067	10/02	0.078	10/03	0.083	10/04	Continuing	Continuing	
Subtotal Support			32.877	0.067		0.078		0.083		Continuing	Continuing	
Remarks: SAIC target Value of contract includes other service's funding (ARMY RDT&E).												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X0734 Information Systems Security						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	Various	9.793	3.200	Various	3.302	Various	3.399	Various	Continuing	Continuing	Continuing
Subtotal T&E			9.793	3.200		3.302		3.399		Continuing	Continuing	
Remarks:												
Program Management Support	VAR	Various	4.203	0.201	Various	0.197	Various	0.201	Various	Continuing	Continuing	Continuing
Subtotal Management			4.203	0.201		0.197		0.201		Continuing	Continuing	
Remarks:												
Total Cost			154.578	15.035		16.107		16.642		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																									DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)										PROJECT NUMBER AND NAME X0734 Information Systems Security												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition * Milestones					EKMS Tier 1 IOC 				EKMS Tier 1 FOC 																							
Test & Evaluation Milestones																																
Development Test		EKMS Tier 1 GAT																														
Operational Test					EKMS Tier 1 19 Aug - 31 Oct 02																											
Production Milestones																																
Deliveries																																

* Note: EKMS Tier 1 IOC and FOC schedule slipped by 3 months.

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EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME R0734 Information Assurance						
COST (\$ in Millions)		Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		0.000	0.000	2.904	2.297	2.548	2.612	3.157	3.203	3.252	Continuing	Continuing
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The goal of the Navy Information Systems Security Program (ISSP) is to ensure the continued protection of navy and joint information and information systems from hostile exploitation and attack. ISSP activities address the triad of Defense Information Operations: protection, detection, and reaction. Evolving attack sensing (detection), warning, and response (reaction) responsibilities extend far beyond the traditional ISSP role in protection or Information Systems Security (INFOSEC). Focused on the highly mobile forward-deployed subscriber, the US Navy's adoption of Network-Centric Warfare (NCW) places demands upon the ISSP, as the number of users explodes and the criticality of their use escalates. Today, the ISSP protects an expanding core of services critical to the effective performance of the Navy's mission.</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 & 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, N64, and SPAWAR (PMW161) 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, operational systems.</p>												

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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	-------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME R0734 Information Assurance
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Software and Systems Research	0.000	2.904	2.297	2.548
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.

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME R0734 Information Assurance			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	2.983	0.000	0.000
Current BES/President's Budget		0.000	2.904	2.297	2.548
Total Adjustments		0.000	-0.079	2.297	2.548
Summary of Adjustments					
Section 8100: Business Process Reform			-0.012		
Section 8135: Economic Assumptions			-0.024		
Section 8109: IT Cost Growth			-0.005		
Miscellaneous Department Adjustment			-0.038		
Subtotal		0.000	-0.079	0.000	0.000
(U) Schedule: N/A.					
(U) Technical: N/A					

R-1 SHOPPING LIST - Item No. 193

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME R0734 Information Assurance					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 3415 Info Sys Security Program (ISSP) OPN DERF	97.267 15.115	86.517	81.938	90.816	114.940	123.850	119.337	118.336	Continued	Continued
(U) E. ACQUISITION STRATEGY: *										
N/A.										
* Not required for Budget Activities 1,2,3, and 6										

R-1 SHOPPING LIST - Item No. 193

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			R0734 Information Assurance						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Software Development	C/WX	NRL, Washington D.C.	0.000	2.904	10/02	2.297	10/03	2.548	10/04	Continuing	Continuing	
Subtotal Support			0.000	2.904		2.297		2.548		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			R0734 Information Assurance						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
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	2.904		2.297		2.548		Continuing	Continuing	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME X2987 Intelligent Agent Security Module					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	2.410	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.410
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional plus-up for Navy's Intelligent Agent Security Module (IASM). Continued research and development for Small Business Research Initiative (SBIR Phase 2) for a network wide Intrusion Detection System (IDS) (referred to as Naval Intelligent Agent Secure Module (NIASM)) which monitors existing sensors and devices to include Firewalls, Virtual Private Network (VPN) servers, and Information Decision Systems (IDS).</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>											

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 29 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X2987 Intelligent Agent Security Module
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	--------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Intelligent Agent Security Module (IASM)	2.410			
RDT&E Articles Quantity				

Congressional plus-up for Navy's Intelligent Agent Security Module (IASM). Continued research and development for Small Business Research Initiative (SBIR Phase 2) for a network wide Intrusion Detection System (IDS) (referred to as Naval Intelligent Agent Secure Module (NIASM)) which monitors existing sensors and devices to include Firewalls, Virtual Private Network (VPN) servers, and Information Decision Systems (IDS).

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X2987 Intelligent Agent Security Module			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		2.478			
Current BES/President's Budget		2.410			
Total Adjustments		-0.068	0.000	0.000	0.000
Summary of Adjustments					
Section 8135: Economic Assumptions		-0.007			
Miscellaneous Navy Adjustments		-0.061			
Subtotal					
		-0.068	0.000	0.000	0.000
(U) Schedule:					
N/A.					
(U) Technical:					
N/A.					

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME X2987 Intelligent Agent Security Module					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 3415 Info Sys Security Program (ISSP) OPN DERF	97.267 15.115	86.517	81.938	90.816	114.940	123.850	119.337	118.336	Continued	Continued
(U) E. ACQUISITION STRATEGY: *										
N/A.										
* Not required for Budget Activities 1,2,3, and 6										

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X2987 Intelligent Agent Security Module						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPAF	Promia, San Francisco, CA	2.309							Continuing	Continuing	2.316
Subtotal Product Development			2.309	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X2987 Intelligent Agent Security Module						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Program Management Support	C/WX	SSC-San Diego, CA	0.101								0.101	
Subtotal Management			0.101	0.000		0.000		0.000			0.101	
Remarks:												
Total Cost			2.410	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME X9280 KG-40A Modernization Program					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	1.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.283
RDT&E Articles Qty											0
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional plus-up for Navy's Cryptographic KG-40A Modernization/Replacement Program. Provides for the design and development of a integrated solution for Navy's KG-40A crypto device replacement. The Department of the Navy (DON) cryptographic equipment inventory system does not have sufficient quantities of KG-40A crypto devices to satisfy the current and future requirements for Navy, Marine Corps, Army, and Air Force programs, and Allied Interoperability initiatives. Because of obsolete parts, the existing components are no longer manufactured or supported by industry. There are insufficient assets available in inventory to support the unfulfilled requirements to provide for Crypto sustainment. The Congressional plus up will provide for the design and development of the best low cost solutions for replacing existing crypto devices. In addition, the proposed add will facilitate the development of next generation cryptos to replace aging legacy equipment and support the network centric communications architecture.</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>											

R-1 SHOPPING LIST - Item No. 193

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X9280 KG-40A Modernization Program
-------------------------------------------------------------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Cryptographic KG-40A Modernization	0.000	1.283	0.000	0.000
RDT&E Articles Quantity				

Congressional plus-up for Navy's Cryptographic KG-40A Modernization/Replacement Program. Provides for the design and development of a integrated solution for Navy's KG-40A crypto device replacement. The Department of the Navy (DON) cryptographic equipment inventory system does not have sufficient quantities of KG-40A crypto devices to satisfy the current and future requirements for Navy, Marine Corps, Army, and Air Force programs, and Allied Interoperability initiatives. Because of obsolete parts, the existing components are no longer manufactured or supported by industry. There are insufficient assets available in inventory to support the unfulfilled requirements to provide for Crypto sustainment. The Congressional plus up will provide for the design and development of the best low cost solutions for replacing existing crypto devices. In addition, the proposed add will facilitate the development of next generation cryptos to replace aging legacy equipment and support the network centric communications architecture.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	X9280 KG-40A Modernization Program			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	1.283	0.000	0.000
Total Adjustments		0.000	1.283	0.000	0.000
Summary of Adjustments					
Congressional Add KG-40 Modernization			1.300		
Miscellaneous Departmental Adjustment		0.000	-0.017		
Subtotal		0.000	1.283	0.000	0.000
(U) Schedule:					
N/A					
(U) Technical:					
N/A					

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME X9280 KG-40A Modernization Program			
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 3415 Info Sys Security Program (ISSP)	97.267	86.517	81.938	90.816	114.940	123.850	119.337	118.336	Continued	Continued
OPN DERF	15.115									
 (U) E. ACQUISITION STRATEGY: *										
<p>The Navy intends to hold an open competition and award of an RD contract to provided an integrated solution for the KG-40A replacement at the best value to the government (lowest development/per unit/risk) that can be obtained.</p>										
<p>* Not required for Budget Activities 1,2,3, and 6</p>										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program			X9280 KG-40A Modernization Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	C/CPAF	TBD		1.100	09/03						1.100	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.100		0.000		0.000		0.000	1.100	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-7			0303140N Information Systems Security Program				X9280 KG-40A Modernization Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
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	C/WX	SSC San Diego, CA		0.183	02/03						0.183	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.183		0.000		0.000		0.000	0.183	
Remarks:												
Total Cost			0.000	1.283		0.000		0.000		0.000	1.283	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)				PROJECT NUMBER AND NAME X9281 Intelligent Agent Security Module (IASM)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	4.443	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.443
RDT&E Articles Qty											0
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional plus-up for Navy's Intelligent Agent Security Module (IASM). Continued research and development for Small Business Research Initiative (SBIR Phase 2) for a network wide Intrusion Detection System (IDS) (referred to as Naval Intelligent Agent Secure Module (NIASM)) which monitors existing sensors and devices to include Firewalls, Virtual Private Network (VPN) servers, and Information Decision Systems (IDS).The IASM is intended to enhance network security by correlating information from multiple security products and deriving a concise, accurate assessment of malicious actions and unauthorized use. In addition the IASM will provide network administrators with recommended response actions in order to terminate attacks. The IASM is intended for deployment at tactical Network Operation Centers, Shipboard, and at the Fleet Information Warfare Center.</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-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)	PROJECT NUMBER AND NAME X9281 Intelligent Agent Security Module (IASM)

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Intelligent Agent Security Module (IASM)	0.000	4.443	0.000	0.000
RDT&E Articles Quantity				

Congressional plus-up for Navy's Intelligent Agent Security Module (IASM). Continued research and development for Small Business Research Initiative (SBIR Phase 2) for a network wide Intrusion Detection System (IDS) (referred to as Naval Intelligent Agent Secure Module (NIASM)) which monitors existing sensors and devices to include Firewalls, Virtual Private Network (VPN) servers, and Information Decision Systems (IDS). The IASM is intended to enhance network security by correlating information from multiple security products and deriving a concise, accurate assessment of malicious actions and unauthorized use. In addition the IASM will provide network administrators with recommended response actions in order to terminate attacks. The IASM is intended for deployment at tactical Network Operation Centers, Shipboard, and at the Fleet Information Warfare Center.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303140N Information Systems Security Program (ISSP)	X9281 Intelligent Agent Security Module (IASM)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	0.000	4.443	0.000	0.000
Total Adjustments	0.000	4.443	0.000	0.000
Summary of Adjustments				
Congressional Add IASM		4.500		
Miscellaneous Departmental Adjustment	0.000	-0.057		
Subtotal	0.000	4.443	0.000	0.000

(U) Schedule:
N/A

(U) Technical:
N/A

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303140N Information Systems Security Program (ISSP)			PROJECT NUMBER AND NAME X9281 Intelligent Agent Security Module (IASM)					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 3415 Info Sys Security Program (ISSP)	97.267	86.517	81.938	90.816	114.940	123.850	119.337	118.336	Continued	Continued
OPN DERF	15.115									
(U) E. ACQUISITION STRATEGY: *										
The Navy intends to continue IASM development on existing RD contract with Promia, Inc.										
* Not required for Budget Activities 1,2,3, and 6										

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X9281 Intelligent Agent Security Module (IASM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	C/CPAF	PROMIA, Inc.	0.000	3.943	09/03						3.943	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.943		0.000		0.000		0.000	3.943	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0303140N Information Systems Security Program (ISSP)			X9281 Intelligent Agent Security Module (IASM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC Charleston, SC	0.000	0.250	01/03						0.250	
Developmental Test & Evaluation	WX	SSC San Diego, CA	0.000	0.250	01/03						0.250	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.500		0.000		0.000		0.000	0.500	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	4.443		0.000		0.000		0.000	4.443	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification							DATE: FEBRUARY 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY				PROJECT NUMBER AND NAME K4021/COBRA JUDY REPLACEMENT (CRJ) SYSTEM ENGINEERING			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	50.858	69.369	81.000	57.500	50.000	51.100	52.200
RDT&E Articles Qty	0	0	0	0	0	0	0	0

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. (U) Mission Description

COBRA Judy 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. Current FY03 funding represents 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 that 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.

R-1 SHOPPING LIST - Item No.

200

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: FEBRUARY 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	PROJECT NUMBER AND NAME K4021/Cobra Judy Replacement System Engineering

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity	0	0	0	0

Accomplishments: AIR FORCE FUNDS TRANSFERRED FROM PE 031315F.

- Successfully completed Milestone A Defense Acquisition Board (DAB), establishing Cobra Judy Replacement as an ACAT-1D program.
- Established Cobra Judy Replacement Program Office within Navy PEO(IWS) / IWS 2.0 Radar Systems Directorate.
- Developed key draft acquisition documentation for Milestone B staffing.
- Initiated ship selection studies for appropriate, cost-effective platform.
- Air Force completed consolidation and transfer of Program Element funds / TOA to United States Navy .

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	25.797	27.000	10.000
RDT&E Articles Quantity	0	0	0	0

DESIGN AND RISK REDUCTION

Planned:

- Complete acquisition and contracting strategy for radars, ship, and integration.
- Award key contracts for S-band and X-band radars
- Complete critical designs for prime mission (X-band and S-band) radars

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	22.500	25.000
RDT&E Articles Quantity				

SHIPBUILDING / CONVERSION

Planned:

- Complete ship selection studies
- Contract for ship and integration
- Initiate ship construction

R-1 SHOPPING LIST - Item No. 200

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: FEBRUARY 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	PROJECT NUMBER AND NAME K4021/Cobra Judy Replacement System Engineering

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	18.666	14.319	6.480
RDT&E Articles Quantity	0	0	0	0

SYSTEM ENGINEERING

Planned:

- Requirements development and analysis
- Development of specifications
- Complete designs for non-prime mission equipment (C4I, data handling, classified mission equipment)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	6.395	5.550	5.520
RDT&E Articles Quantity	0	0	0	0

PROGRAM MANAGEMENT SUPPORT

Planned:

- Program planning, assessment of technical alternatives, risk identification and mitigation.
- Cost and schedule development and execution
- Complete milestone documentation in preparation for Milestones B/C
- Complete Milestones B/C

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	34.000
RDT&E Articles Quantity	0	0	0	0

RADAR SYSTEM PRODUCTION

Planned:

- Initiate radar production
- Begin radar system integration detail design

R-1 SHOPPING LIST - Item No. 200

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification			DATE: FEBRUARY 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	PROJECT NUMBER AND NAME K4021/Cobra Judy Replacement System Engineering			
C. (U) PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget: (FY04/05 Pres Controls)		0.000	50.858	69.369	81.000
Total Adjustments		0.000	50.858	69.369	81.000
Summary of Adjustments					
PROGAM TRANSFER		0.000	51.061	71.000	81.000
Economic Assumptions		0.000	-0.203	-1.631	
Subtotal		0.000	50.858	69.369	81.000
<p>Funding for the Cobra Judy Replacement Program was established via the Department of Defense funding adds in FY02. The Air Force (prior to transfer of program to Navy) was notified after submission of the President Budget Request (PBR).</p> <p>Schedule: Not Applicable.</p> <p>Technical: Not Applicable.</p>					

R-1 SHOPPING LIST - Item No. 200

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification		DATE: FEBRUARY 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305149N/COBRA JUDY	PROJECT NUMBER AND NAME K4021/Cobra Judy Replacement System Engineering

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u> Continuing	Total <u>Cost</u> Continuing
<p>Element Managers for additional details.</p>										

E. ACQUISITION STRATEGY:

(U) The preliminary 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. Shipbuilding/conversion and integration efforts will be competitively procured. Existing Navy radar contracts may be modified to include development of two mission radars, pending approval of the sole-source approach.

F. MAJOR PERFORMERS: N/A

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: FEBRUARY 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NUMBER AND NAME						
RDT&E, N / BA - 7			0305149N/COBRA JUDY			K4021/Cobra Judy Replacement System Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
Design and Risk Reduction	* TBD	* TBD	0.000	25.797	09/03	27.000	TBD	10.000	TBD	Continuing	Continuing	TBD
Shipbuilding / Conversion	TBD	Various (TBD)	0.000	0.000	N/A	22.500	TBD	25.000	TBD	Continuing	Continuing	TBD
System Engineering	WR/RCP	Various	0.000	10.402		14.319		6.480		Continuing	Continuing	N/A
	WR	NSWC DD		2.154								
	CPFF	JHU/APL		2.200	02/03							
	MIPR	MIT/LL		3.000	02/03							
	WR	SPAWAR		0.250								
	WR	NRL		0.225								
	WR	NSWC PHD		0.435								
Radar System Production	TBD	Various (TBD)	0.000	0.000	N/A	0.000	N/A	34.000	TBD	Continuing	Continuing	N/A
Test and Evaluation			0.000	0.000		0.000		0.000		Continuing	Continuing	
Subtotal Product Development			0.000	44.463		63.819		75.480		Continuing	Continuing	
Remarks: * Competetive procurement anticipated in FY03 post Milestones B/C.												
Support / Management Services	GSA	Technology Svcs Corp		0.800	02/03							0.800
	GSA	Computer Science Corp		2.150								2.150
	GSA	Systems Planning Anal		1.900								1.900
	GSA	BAE Systems		1.250								1.250
	CPFF	DTI		0.295	02/03							0.295
	TBD	Various				5.550		5.520				11.070
												0.000
Subtotal Support			0.000	6.395		5.550		5.520		0.000		17.465
Remarks: Increased FY03 Management Services Support due to Milestones B/C documentation preparation.												
Total Cost				50.858		69.369		81.000		Continuing	Continuing	

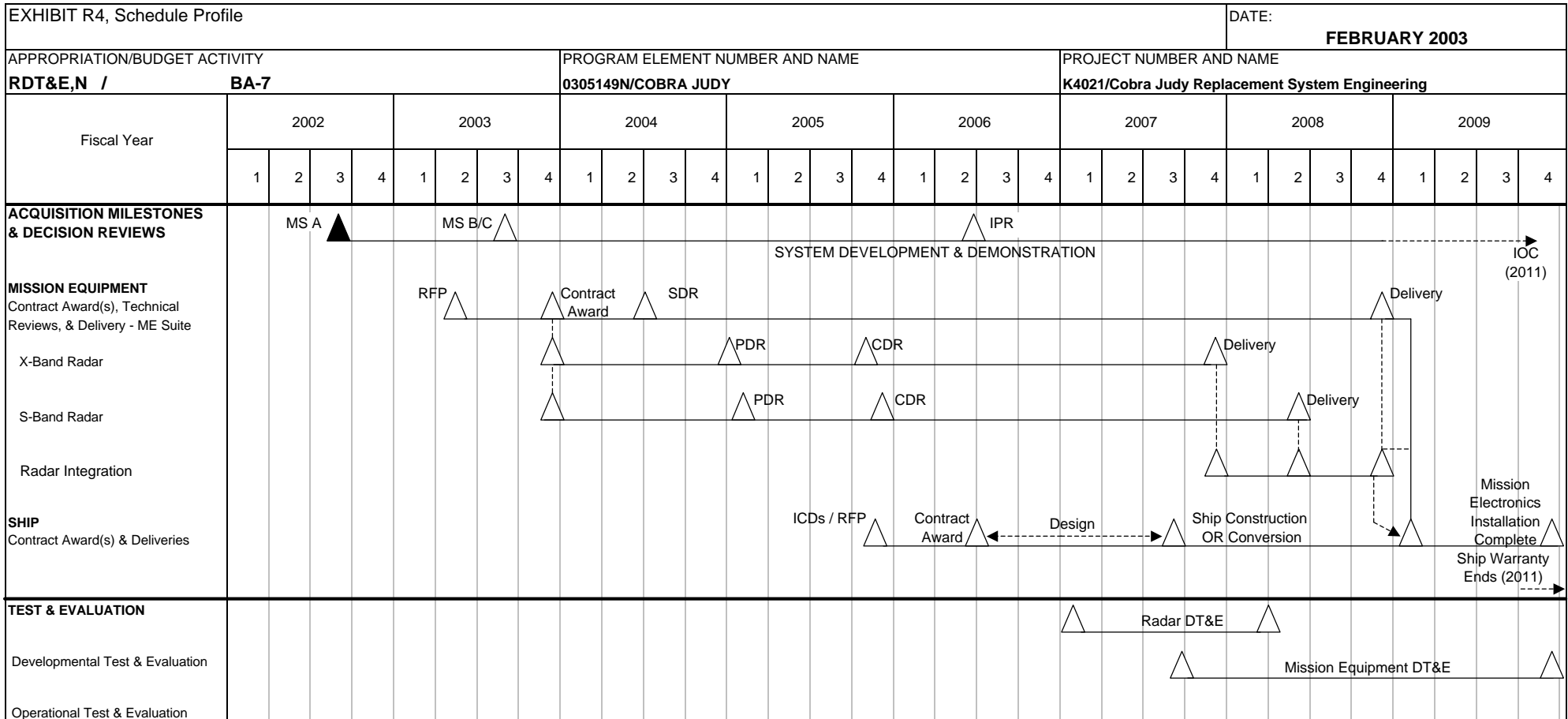
R-1 SHOPPING LIST - Item No. 200

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 8)

UNCLASSIFIED

CLASSIFICATION:



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

LEGEND			
CDR	Critical Design Review	MS	Milestone
DT&E	Developmental Test and Evaluation	PDR	Preliminary Design Review
ICD	Interface Control Document	RFP	Request for Proposal
IOC	Initial Operational Capability	SDR	System Design Review
IPR	Interim Progress Review		

R-1 SHOPPING LIST - Item No. 200

UNCLASSIFIED

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 7 of 8)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0305149N/COBRA JUDY				K4021/CRJ SYS ENGR			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
ACQUISITION MILESTONES & DECISION REVIEWS								
Milestone A (MS A)	3Q							
Milestones B/C (MS B/C)		3Q						
Interim Progress Review (IPR)					2Q			
System Development & Demonstration	3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
MISSION EQUIPMENT								
Request for Proposal (RFP)		2Q						
Contract Award(s)		4Q						
System Design Review (SDR)			2Q					
Delivery							4Q	
X-Band Radar								
Contract Award		4Q						
Preliminary Design Review (PDR)				1Q				
Critical Design Review (CDR)				4Q				
Delivery						4Q		
S-Band Radar								
Contract Award		4Q						
Preliminary Design Review (PDR)				1Q				
Critical Design Review (CDR)				4Q				
Delivery							2Q	
Radar Integration								
Delivery						4Q	2Q, 4Q	
SHIP								
Interface Control Documents (ICDs) / Request for Proposal (RFP)				4Q				
Contract Award					3Q			
Ship Design					3Q-4Q	1Q-3Q		
Ship Construction or Conversion						3Q		
Delivery								1Q
Mission Electronics Installaion Completion								4Q
TEST AND EVALUATION								
Radar Developmental Test & Evaluation (DT&E)						1Q-4Q	1Q	
Mission Equipment Developmental Test& Evaluation (DT&E)						3Q-4Q	1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 200

UNCLASSIFIED

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

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0305160N
PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program (Space)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R0524 Navy METOC Support (Space)								
	19,171							
X0524 Navy METOC Support (Space)								
	0	17,540	4,145	3,571	4,530	4,981	21,964	22,311
X1452 GEOSAT								
	1,722	1,784	821	900	928	1,122	1,144	1,165
X9282 Radiation Hardened Vector Processor System								
		2,927						
Total	20,893	22,251	4,966	4,471	5,458	6,103	23,108	23,476

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element supports Navy requirements in meteorological and oceanographic (METOC) remote sensors. These interests include commitments to satellite, sensor, and operational demonstration/development activities associated with four satellite programs: 1) the Joint Service Defense Meteorological Satellite Program (DMSP), 2) The WindSat/Coriolis satellite funded by Navy, the National Polar-orbiting Environmental Satellite System (NPOESS) System Program Office, and the DoD Space Test Program (STP), 3) the Navy Geodetic/Geophysical Satellite (GEOSAT) follow-on (GFO) program, funded entirely by Navy and 4) the Indian Ocean METOC Imager program jointly funded by DoD, NASA and NOAA. Navy provides the spacecraft and the STP provides the launch vehicle/launch services, in conjunction with a Navy/NASA/NOAA partnership. 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. Both the GEOSAT and Navy METOC Support(Space) projects fulfill Navy's obligation to develop Navy-unique, mission critical Space-based METOC technology. A Congressional Add for Radiation Hardened Vector Processor System is provided for FY03.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0305160N
PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program (Space)

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Submission:	22,294	19,801		
Adjustments from FY 2003 President's Budget:				
NWCF Adjustment				
SBIR Adjustment	-233			
Post Production				

Adjustments from FY 2003 President's Budget:				
Sec 313, PL 107-206 Revised Economic Assumption	-48			
BTR for Joint and Mission Planning Sys (JMPS) Combat One	-36			
Miscellaneous Department Adjustments	-934	-289		
Business Process Reform (SEC 8100)		-91		
Economic Assumptions (SEC 8135)	-61	-128		
IT Cost Growth (SEC 8109)		-42		
Miscellaneous Navy Adjustments	-89			
X9282 Radiation Hardened Vector Processor System		+3,000		
FY 2004 President's Budget Submission:	20,893	22,251	4,966	4,471

PROGRAM CHANGE SUMMARY EXPLANATION:

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0305160N
PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program (Space)

Schedule: As applicable
Technical: As applicable

UNCLASSIFIED

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

Exhibit R-2a

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC
Support (Space)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R0524 Navy METOC Support (Space)	19,171							
X0524 Navy METOC Support (Space)	0	17,540	4,145	3,571	4,530	4,981	21,964	22,311

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Meteorological and Oceanographic (METOC) Support (Space) project provides for future Navy-unique sensor development efforts (WindSat and the Indian Ocean METOC Imager (IOMI)) and Navy participation in DMSP Special Sensor Microwave/Imager (SSM/I) and Special Sensor Microwave Imager/Sounder (SSM/IS) calibration efforts, in support of the Fleet operational requirements. The project ensures Navy 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 (NOAA) Geostationary Operational Environmental Satellites (GOES). These efforts fulfill Navy unique requirements that are not funded within the DMSP and NPOESS 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 Navy participation as a voting member of the DMSP Configuration Control Board (CCB). Future funding plans respond to emerging Chief of Naval Operations requirements for Navy METOC data. Plans for FY 2002 and beyond address the requirement for high-resolution METOC imagery to ships, in particular the Indian Ocean and Arabian Gulf region.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY05
WindSat	11,001	14,530	3,101	2,843

Brief Description of Program Effort 1. WindSat, an initiative begun in 1997, is a partnered program that meets multiple Naval remote sensing requirements and provides a significant risk reduction for NPOESS, the converged Department of Commerce/National Oceanic and Atmospheric Administration/Department of Defense environmental satellite program. The Navy METOC Support (Space) project supports the Navy contribution to WindSat, which is fully funded via a formalized inter-agency agreement. The NPOESS Integrated Program Office has provided a portion of the funds for the WindSat sensor and the DOD Space Test Program (STP) is funding a portion of the satellite bus and providing the launch vehicle and launch services. WindSat launched in January 2003.

FY 2002 ACCOMPLISHMENTS:

- Completed WindSat sensor development.

R-1 Line Item 201

Page 4 of 16

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC
Support (Space)

- Began integration and testing with the Coriolis spacecraft.
- Continued development of algorithms and ground software for WindSat environmental data records.

FY 2003 PLANS:

- Ship WindSat flight payload to launch site for final integration with spacecraft and launch vehicle integration.
- Complete development and testing of algorithms and ground software for WindSat environmental data records.
- Support WindSat launch processing, launch operations, early orbit checkout and begin on-orbit calibration and validation.
- Provide engineering support for the evaluation of the Coriolis spacecraft and WindSat payload on-orbit performance and complete on-orbit calibration/validation of WindSat data.

FY 2004 PLANS:

- Support WindSat on-orbit payload to provide Fleet ocean wind speed and direction data.
- Perform data calibration and validation.

FY 2005 PLANS:

- Continue to support WindSat on-orbit payload to provide Fleet ocean wind speed and direction data.
- Perform data calibration and validation of environmental algorithms generated for Fleet use.

	FY 02	FY 03	FY 04	FY05
Indian Ocean METOC Imager	6,770	2,260	0	0

Brief Description of Program Effort 2. The Indian Ocean METOC Imager (IOMI) program will be executed cooperatively utilizing the NASA EO-3 New Millenium Program development of the Geostationary Imaging Fourier Transform Spectrometer (GIFTS) sensor. The partnership with NASA for the GIFTS, provides Navy funding to extend the lifetime of the sensor to support the Navy Indian Ocean requirement for temporal resolution with real-time high resolution environmental data directly to the fleet at sea in addition to providing sounding and imaging products to Fleet centers. Navy participation in the NASA GIFTS program extends the lifetime of the GIFTS sensor and thereby provides NOAA significant risk reduction and allows the opportunity to transition the GIFTS technology to future GOES operational capabilities. NOAA is participating in the partnership by developing the data products, providing calibration and validation of the data products and contributing the ground station during CONUS activities and check out period. This enhanced demonstration of an operational utility will promote a rapid

R-1 Line Item 201

Page 5 of 16

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC
Support (Space)

technology infusion into next generation Geostationary Operational Environmental Satellites (GOES) and allows Navy to have data sets in place to utilize the future NOAA/GOES capability. The DoD Space Test Program will provide the access to space, launch vehicle and launch services, under the ONR-STP Memorandum of Agreement. The IOMI program directly responds to the #1 priority, and two additional concerns, of the CINC's (2001 June) Top Five Maritime Concerns From Space and the Joint Typhoon Warning Center Mission Need Statement.

FY 2002 ACCOMPLISHMENTS:

- Supported the IOMI-GIFTS sensor development and spacecraft development trade studies.
- Successfully competed to obtain launch services for the IOMI-GIFTS payload from the DoD Space Test Program.
- Successfully completed sensor/mission Preliminary Design Review and Mission Confirmation Review.
- Identified secondary payloads to complete the mission sensor suite.

FY 2003 PLANS:

- Begin spacecraft and sensor development in support of IOMI-GIFTS project.
- Refine mission operations and ground segment development.
- Develop interfaces with STP Integrating Contractor for launch and launch services.

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC
Support (Space)

	FY02	FY03	FY04	FY05
Calibration and Validation Activities	1,400	750	959	642

The passive microwave instruments carried on Defense Meteorological Satellite Program (DMSP) and future National Polar-Orbiting Environmental Satellite Systems (NPOESS) provide global oceanic and atmospheric data of direct military operational relevance, including sea surface wind, sea ice, and precipitation; Geodetic/Geophysical Satellite (GEOSAT) altimeter data are used to observe significant wave height, ocean fronts and eddies, and internal acoustic structure. The calibration and validation (cal/val) activities provide for airborne sensor participation for data analysis, participation in the DMSP programs to support Navy required data and support for development of new METOC sensors.

FY 2002 ACCOMPLISHMENTS:

- Developed plan for SSM/I calibration and validation support pending launch of the DMSP satellite.
- Completed the integration, and begin flight testing of the Airborne Polarimetric Microwave Imaging Radiometer (APMIR) to use for cal/val of DMSP SSM/I and SSM/IS sensors and WindSat sensor.
- Began preparation for WindSat cal/val activities.

FY 2003 PLANS:

- Continue to monitor SSM/I performance and continue validation support effort associated with the DMSP SSM/IS.
- Conduct field experiments with APMIR to use for calibration/validation of DMSP SSM/I, SSM/IS sensors, and the WindSat sensor.

FY 2004 PLANS:

- Continue to monitor SSM/I performance and continue validation support effort associated with the DMSP SSM/IS and WindSat sensor.
- Conduct field experiments with APMIR to use for calibration/validation of DMSP SSM/I, SSM/IS sensors, and the WindSat sensor.

FY 2005 PLANS:

- Continue to monitor SSM/I performance and continue validation support effort associated with the DMSP SSM/IS and WindSat sensor.
- Conduct field experiments with APMIR to use for calibration/validation of DMSP SSM/I, SSM/IS sensors, and the WindSat sensor.

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC
Support (Space)

	FY02	FY03	FY04	FY05
Doppler Altimeter	0	0	85	86

Brief Description of Program Effort 3. Navy requirements for geodetic and oceanographic information have been met by space-borne altimeters collecting the necessary information to support its environmental predictions and enhance its warfighting capability. Navy applications of altimetry include use of altimeter data in coastal oceanography, in mapping mesoscale fronts and eddies, and, in using basin-scale data for generating eddy-resolving global ocean models. The length and time scales of these processes are too large for conventional in-the-water oceanographic instrumentation configurations to measure. Satellite altimetry is the only known method by which oceanographers can precisely measure sea surface topography. Traditional altimeters accuracy significantly degrades near land due to ground reflections. Doppler altimetry with on-board processing will allow the Navy to accurately measure the sea surface topography in the increasingly important littorals.

FY 2004 PLANS:

- Begin support of Doppler Altimeter program development and trade studies.

FY 2004 PLANS:

- Continue support of Doppler Altimeter program development and trade studies.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E: Not applicable

NON-NAVY RELATED RDT&E:

PE 0605864F	DoD Space Test Program (STP)
PE 0305160F	Defense Meteorological Satellite Program (SPACE)
PE SAT 809/00110 NASA 258-30	Science, Aeronautics, & Technology; Office of Earth Science Research and Technology
PE 0601103D	University Research Initiative

D. ACQUISITION STRATEGY: The 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. 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

R-1 Line Item 201

Page 8 of 16

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0305160N

Project Number: X0524

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite
(Space)

Project Title: Navy METOC

Support (Space)

supports the Navy requirements in the future. The IOMI-GIFTS sensor technology development provides risk reduction data and developmental technology which will transition to the Next Generation GOES sensors, the Advanced Baseline Sounder. These operational sensors, aboard the future GOES satellites, will provide the operational support to meet many of the Navy's METOC requirements.

E. MAJOR PERFORMERS:

N/A

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 305160N Project Number: X1452
PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program Project Title: GEO SAT
(Space)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
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X1452 GEOSAT	1,722	1,784	821	900	928	1,122	1,144	1,165
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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 warfare areas such as anti-submarine and undersea warfare. It also provides other agencies, such as National Oceanic and Atmospheric Administration and National Aeronautics and Space Administration with valuable inputs to studies involving Pacific Ocean temperature oscillations, global warming and climate change (El Nino, La Nina effects). Ocean topography data was previously provided by the Geodetic/Geophysical Satellite (GEOSAT) from 1985 until the satellite failed in January 1990. The GEOSAT Follow-On (GFO) satellite provides altimetry data until altimetry data becomes available from a future national environmental satellite system.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY05
GEOSAT	1,722	1,784	821	900

FY 2002 ACCOMPLISHMENTS:

- Funded on-orbit performance incentive.
- Developed improved ground station satellite data processing techniques.
- Continued to assess on-orbit system performance, conducted payload calibration/validation, and refined orbits and resolved performance anomalies.

FY 2003 PLANS:

- Continue to fund on-orbit performance incentive.
- Continue to develop improved ground station satellite data processing techniques.
- Continue to assess on-orbit system performance, conduct payload calibration/validation, refine orbits and resolve performance anomalies.

FY 2004 PLANS:

- Continue to develop improved ground station satellite data processing techniques.

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 305160N

Project Number: X1452

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: GEO SAT

- Continue to assess on-orbit system performance, conduct payload calibration/validation, refine orbits and resolve performance anomalies.

FY 2005 PLANS:

- Continue to develop improved ground station satellite data processing techniques.
- Continue to assess on-orbit system performance, conduct payload calibration/validation, refine orbits and resolve performance anomalies.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:
Not applicable.

NON-NAVY RELATED RDT&E:
Not applicable.

D. ACQUISITION STRATEGY: As Applicable

E. MAJOR PERFORMERS:

N/A

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 305160N

Project Number: X1452

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: GEO SAT

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
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X9282 Radiation Hardened Vector Processor System	0	2,927	0	0	0	0	0	0
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A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project will enable signal processing to be performed onboard a satellite via the NPOESS Preparatory Project (NPP). This effort provides a critical technology needed by ongoing Navy satellite programs and other satellite programs that the Navy uses for warfighting. The Radiation Hardened Vector Processor (RHVP) will enable signal processing to be performed onboard a satellite rather than on the ground, thereby significantly reducing the bandwidth requirements of the downlink and increasing the data that can be provided by satellite payload.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY05
Radiation Hardened Vector Processor System	0	2,927	0	0

FY 2003 Plan:

- Develop and complete Radiation Hardened Vector Processor.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:
Not applicable.

NON-NAVY RELATED RDT&E:
Not applicable.

F. ACQUISITION STRATEGY: As Applicable

R-1 Line Item 201
Page 12 of 16

UNCLASSIFIED

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 305160N

Project Number: X9282

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: Radiation
Hardened Vector Processor System

G. MAJOR PERFORMERS:

N/A

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3 Cost Analysis

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 305160N

Project Number: X0542

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: Navy METOC
Support (Space)

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-03 Cost	FY-03 Award Date	FY-04 Cost	FY-04 Award Date	FY-05 Cost	FY-05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Spacecraft Development	FF	Spectrum Astro, AZ	N/A	2.500	N/A	0.000	N/A	0.000	N/A		See Remark A	
Spacecraft Development	CP	TRW, Rondo Beach, Ca.	3.185	1.700	N/A	0.000	N/A	0.000	N/A	56.015	60.900	
Subtotal Spacecraft Development			3.185	4.200		0.000		0.000		56.015	63.400	
Remarks: Spacecraft Development includes both the WindSat (Spectrum Astro) and IOMI (TRW) Projects. The contract for the WindSat spacecraft is held by the DoD Space Test Program with Spectrum Astro; through FY03 Navy will provide ~\$14M for the spacecraft development. A. The FY03 increment completes the Navy obligation per the interagency MOA of the STP Spectrum Astro development. B. The IOMI (TRW) spacecraft development contract currently reflects phasing for a 2004 launch; the DoD STP has moved the launch date to 2006. The phasing costs of this development is funded through an interagency agreement with Navy & NASA and will be re-phased. Contract value is FY03 10M; FY04 33.9M; FY05 15M and FY06 2M.												
Windsat PM & Systems Engineering	CP	Various	62.471	11.400	N/A	0.000	N/A	0.000	N/A		73.871	
Iomi pm & System Engineering	CP	Various	3.754	0.0	N/A	0.000	N/A	0.000	N/A		3.754	
Data Calibration, Validation and APMIR	CP	Various	5.126	1.940	N/A	4.145	N/A	3.571	N/A		14.782	
Subtotal Support			71.351	13.340		4.145		3.571		0.000	92.407	
Total Cost			74.536	17.540	TBD	4.145	TBD	3.571	TBD	56.015	155.807	

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3 Cost Analysis

DATE: February 2003

Budget Activity 7

PROGRAM ELEMENT: 0305160N

Project Number: X1452

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: GFO SAT

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-03 Cost	FY-03 Award Date	FY-04 Cost	FY-04 Award Date	FY-05 Cost	FY-05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development	CP	Ball Aerospace	85.965	0.000	N/A	0.000	N/A	0.000	N/A		85.965	
Software Development	CP	Various	8.045	0.000	N/A	0.000	N/A	0.000	N/A		8.045	
Subtotal Product Development			94.010	0.000		0.000		0.000			94.010	
Remarks:												
Systems Engineering	CP	Ball Aerospace	1.082	1.126	N/A	0.563	N/A	0.664	N/A		3.435	
Systems Engineering	CP	Various	0.640	0.658	N/A	0.258	N/A	0.236	N/A		1.792	
Subtotal Support			1.722	1.784		0.821		0.900		0.000	5.227	
Remarks:												
Total Cost			92.732	1.784	TBD	0.821	TBD	0.900	TBD	0.000	5.227	

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3 Cost Analysis

DATE: February 2003

Budget Activity 7

PROGRAM ELEMENT: 0305160N

Project Number: X9282

PROGRAM ELEMENT TITLE: Defense Meteorological Satellite Program
(Space)

Project Title: Radiation
Hardened Vector Processor System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-03 Cost	FY-03 Award Date	FY-04 Cost	FY-04 Award Date	FY-05 Cost	FY-05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Development		Valley Technologies, Inc. Tamaqua, PA		2.927	FEB 2003						2.962	
Subtotal Product Development				2.927								
Remarks:												
Systems Engineering												
Systems Engineering												
Subtotal Support												
Remarks:												
Total Cost				2.962								

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE 0305188N - Joint C4ISR Battle Center (JBC)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	22.646	13.075	24.169	50.413	51.735	52.853	53.994	55.429	56.850	Continuing	Continuing
X2456 - Joint (C4ISR) Battle Center	22.646	13.075	8.333	8.637	8.950	9.161	9.375	9.469	9.646	Continuing	Continuing
X3011 - Joint Battle Management Command and Control				26.391	27.213	28.029	28.892	29.772	30.643	Continuing	Continuing
X3043 - Joint Interoperability and Integation		0.000	13.072	15.385	15.572	15.663	15.727	16.188	16.561	Continuing	Continuing
X9283 - Strategic Interoperability Initiative			2.764								2.764
Project Unit F Number/Title											0.000
Project Unit F Number/Title											0.000
Quantity of RDT&E Articles											0
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Battle Center (JBC) is the U.S. Joint Forces Command (JFCOM) and Chairman, Joint Chiefs of Staff (CJCS) facility for warfighter exploration and assessment of C4ISR capabilities. The Center provides the combatant commands, at the Joint Task Force (JTF) level, with a near-term joint assessment and experimental environment for the warfighter and technologist in support of Joint Vision 2020 (JV2020). It serves as the technical analysis and assessment agency for the Joint Requirement Operating Council (JROC) in determining C4ISR system "value-added" PRIOR to introduction to the Combat Commander's and in advance of system fielding in operational environments. The mission of the JBC is to provide rapid assessment of required C4ISR interoperability and warfighter utility, joint emerging C4ISR technology with new operational doctrine, and result in fielding C4ISR capabilities that meet the joint warfighter's needs. The Unified Command Plans 1999 and 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) directed Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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&I works closely with Combatant Commanders,/Services/Agencies (C/S/A) to ensure warfighting deficiencies are identified, develops synchronized Doctrine, Organizational, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) plans to ensure the warfighter has interoperable capabilities, and provides prioritized recommendations for Joint Requirement Oversight Council (JROC) endorsement. A USJFCOM JI&I transition fund supports the DOTMLPF synchronization plan concept allowing for rapid insertion of capabilities into the field while serving as a bridge until the next Service or Agency POM cycle. The purpose of the Strategic Interoperability Initiative (SII) is to improve interoperability in support of the Combatant Commanders by identifying and assessing proven government and commercial interoperability related standards, technologies, innovations, and processes. The objective is improving Joint Task Force (JTF) Command and Control (C2) interoperability and developing more effective approaches for defining interoperability, information management, and legacy requirements for future DoD and Homeland Security systems.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it provides rapid assessment of required C4ISR interoperability, as well as rapid insertion of capabilities across the DOTMLPF spectrum that meet the joint warfighter's need.</p>											

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, Page 1 of 39)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	22.646	13.075	8.333	8.637	8.950	9.161	9.375	9.469	9.646	Continuing	Continuing
RDT&E Articles Qty											0

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

The Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Battle Center (JBC) is the U.S. Joint Forces Command (JFCOM) and Chairman, Joint Chiefs of Staff (CJCS) facility for warfighter exploration and assessment of C4ISR capabilities. The Center provides the combatant commands, at the Joint Task Force (JTF) level, with a near-term joint assessment and experimental environment for the warfighter and technologist in support of Joint Vision 2020 (JV2020). It serves as the technical analysis and assessment agency for the Joint Requirement Operating Council (JROC) in determining C4ISR system "value-added" PRIOR to introduction to the Combat Commanders and in advance of system fielding in operational environments. The intent is for the JBC to be a forcing function for joint synchronization and a means to foster rapid, near-term insertion of C4ISR technology. The mission of the JBC is to provide rapid assessment of required C4ISR interoperability and warfighter utility, join emerging C4ISR technology with new operational doctrine, and result in fielding C4ISR capabilities that meet the joint warfighter's needs.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February-2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
CINC REQUIREMENTS OFFICE (CRO)	0.121			
RDT&E Articles Quantity				
<p>FY02: Combat Commander's Requirements Office (CRO): The JBC continued to identify the Combat Commander's C4ISR near-term requirements through the Combat Commanders' Requirements Office. The CRO collected C4ISR information from each of the Combat Commanders, coordinated the prioritization of the information into Combat Commanders C4ISR issue categories, and then worked with JBC project teams to identify and define projects. By integrating the JBC process with USJFCOM the Combat Commanders gained the additional assistance that was required to support those CINC requirements, especially those that the JBC could not address due to lack of resources or lack of near-term solutions. The CRO identified the operational problems applicable to the JTF and those areas where assistance by the JBC might be able to achieve a "forcing function" for operational enhancements leveraged by C4ISR improvements.</p>				
	FY 02	FY 03	FY 04	FY 05
JOINT OPERATIONAL ARCHITECTURE	0.346			
RDT&E Articles Quantity				
<p>FY02 Joint Operational Architecture: The focus of Joint Operational Architectures was for C4ISR support to the warfighter across the "Range of Military Operations." The objective was to describe the doctrinally based tasks and activities, operational elements, and the time phased information flows required to accomplish Joint military operations. The architectures were used to assess and analyze doctrine, Tactical Technical Procedures (TTPs), system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. These Operational Architectures provided the baseline to identify warfighter requirements, design and structure assessments, and generate functional metrics.</p>				
	FY 02	FY 03	FY 04	FY 05
SCIENCE AND TECHNOLOGY	0.173			
RDT&E Articles Quantity				
<p>FY02 Science & Technology (S&T): The Science and Technology (S&T) Group built and identified the technologies to be assessed and collected data which will be used in future technology selections.</p>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February-2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
FY02 C4ISR PROJECTS	3.290			
RDT&E Articles Quantity				

FY02 C4ISR Projects: Established by Chairman, Joint Chiefs of Staff at the request of the Combat Commander's during the 95-2 Combat Commander Conference, the mission of the JBC is to provide rapid assessment of required C4ISR interoperability and warfighter utility, join emerging C4ISR technology with new operational doctrine, resulting in fielding C4ISR capabilities that meet the joint warfighter's needs.

	FY 02	FY 03	FY 04	FY 05
FEDERATED BATTLE LAB (FBL)	2.534			
RDT&E Articles Quantity				

FY02 Federated Battle Lab (FBL): The FBL is a consortium of Joint and Service battle centers/laboratories formed to promote solutions to operational problems in CJTF environments. The JBC is recognized as the joint FBL hub by Combat Commanders, services, agencies and CJTFs. The JBC, as chairman of the consortium, coordinated efforts to capitalize on lessons learned in order to continue these effective and successful collaborative experiments in future years.

	FY 02	FY 03	FY 04	FY 05
COMBINED FEDERATED BATTLE LAB (CFBL)	0.965			
RDT&E Articles Quantity				

FY02 Combined Federated Battle Lab (CFBL): The CFBL is a consortium of nations and international organizations formed to evaluate combined C4ISR interoperability shortfalls, assess potential solutions through the utilization of agreed upon phased assessment procedures, report the results of those assessments, and make recommendations in order to foster improved combined CIS for the explicit purpose of promoting near-term concepts and acceptance of solutions. The CFBLNet is based on the JWID developed Combined Area Network (CWAN) concept as implemented in support of JWID '99-R execution period in July 1999. CFBLNet will span the US and connect to several allied sites. The CFBLNet supported the overarching CFBL concept and provide infrastructure to support applications, databases, and network services for participants in a collaborative RDT&E joint and/or combined environment.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February-2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
INTELLIGENCE FEDERATED BATTLE LAB (IFBL)	0.046			
RDT&E Articles Quantity				

FY02 Intelligence Federated Battle Lab (IFBL): It is envisioned that the IFBL will be a voluntary, JBC chaired, consortium linking the National/Service Intelligence Agencies and the Combat Commanders. It will provide upfront IC buy-in while mining the Services for Joint capabilities. The IFBL would provide inter-agency collaboration and joint leveraging of service dollars. It would provide a bridge between the NFIP and the TIARA (Tactical Intelligence and Related Activities) world and provide additional access to the Joint Battle Center for the expanded Intelligence Community. The IFBL proposed for in this initiative will provide unprecedented cross-Agency, cross-Combat Commanders and cross-Service collaboration during all phases of spiral technology development applicable to the Intelligence Community. In addition, Combat Commanders, Service and Agency participants in the IFBL will be able to expose their technology initiatives to FBL and CFBL participants in the overall quest for joint and multinational interoperability.

	FY 02	FY 03	FY 04	FY 05
JOINT C4ISR INTEGRATION FACILITY (JCIF)	0.699			
RDT&E Articles Quantity				

FY02 Joint C4ISR Integration Facility (JCIF): The Joint C4ISR Integration Facility (JCIF) is a subset of the larger JBC Lab. The JCIF is comprised of all the major C4I systems found at the JTF echelon, including the Combat Commander, CJTF, NAVFOR, ARFOR, AFFOR, MARFOR, JSOTF, JIC, and JCCC components. The systems include GCCS, GCCS I3, JDISS, GCCS-M, GCCS-M I3, GCCS-A, AFATDS, ASAS RWS, TBMCS, MSBL, SOF-IV, and JDIICS-D. The JCIF also contains several multi-level secure systems. All of these baseline systems allow introduction of other software or systems to test their integration and interoperability abilities. Each component is on a separate subnet, enabling simulation of physical separation at various bandwidths. The JCIF is normally operated on a U.S. SECRET local network interconnected to the SIPRNET, but can also be disconnected to operate in a closed, controlled environment.

	FY 02	FY 03	FY 04	FY 05
RECONFIGURABLE C4ISR LAB	0.077			
RDT&E Articles Quantity				

FY02 Reconfigurable C4ISR Lab: The JBC Lab provided a learning and experimentation environment to assess promising technology that will meet Combat Commander stated requirements. The Lab was a composite of the Defense Information Infrastructure, providing Solaris and NT platforms and networks as building blocks for a given assessment. Capabilities included WAN/LAN emulation, network services, collaboration tools, network management tools, data collection, and performance analysis. The Lab was able to provide communications at the unclassified U.S. SECRET, Coalition SECRET, NATO SECRET, and Special Compartmented Information (SCI) levels. Typically, projects use the lab to conduct assessments in a closed, controlled environment prior to including warfighters in a distributed event.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center
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(U) B. Accomplishments/Planned Program

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

FY02: USJFCOM JI&I executed Secretary of Defense and Chairman Joint Chiefs of staff efforts to define operational requirements and functional constructs for the Standing Joint Force Headquarters (SJFHQ) efforts associated with Millennium Challenge 02. These efforts will be utilized to support development of a SJFHQ prototype and submitted to the Department of Navy in support of Department of Defense goals.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.900			
RDT&E Articles Quantity				

FY02: USJFCOM JI&I executed Phase I of the Joint Requirement Oversight Council efforts to commence integration among ground maneuver elements between US Army and US Marine Corps battlefield capabilities. This effort included development of Concept of Operations, information exchange requirements, Tactics/Techniques/Procedures, technical interfaces, and associated test plans.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.524			
RDT&E Articles Quantity				

FY02: USJFCOM JI&I executed Phase I of the Joint Requirement Oversight Council efforts of initial Defense Collaborative Planning Tool Suite (DCTS) fielding to USCENTCOM, USPACOM, USEUCOM and USJFCOM in support of Operation Enduring Freedom and Operation Noble Eagle.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February-2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
CCs REQMTS ANALYSIS & CAPABILITY ASSESSMENTS		5.298	5.527	5.752
RDT&E Articles Quantity				

FY03-05 CCs Requirements Analysis and Capability Assessments: Analyze near-term requirements from all Combatant Commanders, identify current mature technology available to address these requirements, perform comprehensive assessment for joint ness, maturity, and warfighter utility. JBC projects are nominated to meet Combatant Commanders and Joint Force transformational requirements for the fiscal year. Those submitted to the Joint Staff for approval, and subsequently become the approved fiscal year program. A Combatant Commanders Planning Conference is coordinated and hosted by the JBC. This conference, in accordance with the Combatant Commander's requirements and with subsequent CJCS concurrence, will assist in prioritizing the following fiscal year's work.

	FY 02	FY 03	FY 04	FY 05
DOTMLP-F JROC RECOMMENDATIONS		0.575	0.598	0.615
RDT&E Articles Quantity				

FY03-05 (DOTMLP-F JROC Recommendations: Provide Doctrine, Organizational, Training, Material, Leadership, Personnel, and Facilities (DOTMLP) recommendations on fielding strategies for Joint Requirement Oversight Council (JROC) endorsement. Recommendations are based on results from technology assessments, which identify relevant Service programs, doctrinal impacts, training implications, personnel requirements, etc.

	FY 02	FY 03	FY 04	FY 05
JOINT CONCEPT DEVELOPMENT & EQUIP SUP		1.332	1.390	1.451
RDT&E Articles Quantity				

FY03-05 Joint Concept Development and Experimentation Support: Continue to support the Unified Vision series of experiments and preparation of Olympic Challenge and Pinnacle series of events. Provide support for Limited Objective Experiments and Multi-national experimentation efforts.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February-2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
FEDERATED JOINT C2 LABORATORIES		1.128	1.122	1.132
RDT&E Articles Quantity				

FY03-05 Federated Joint C2 Laboratories: The FJCL is a voluntary consortium of the JBC, the Service Battle Centers/Laboratories, Combatant Commanders, Agencies and other DoD organizations formed to promote near-term Joint C4ISR solutions to JTF operational needs/issues. The JBC, as chairman of the consortium, provides annual funding to support Service efforts through project experimentation/assessment. The CFBL is a consortium of nations and international organizations formed to evaluate combined C4ISR interoperability shortfalls, assess potential solutions through the utilization of agreed upon phased assessment procedures, report the results of those assessments, and make recommendations in order to foster improved combined CIS for the explicit purpose of promoting near-term concepts and acceptance of solutions.

R-1 SHOPPING LIST - Item No. 202

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center
-------------------------------------------------------------	-------------------------------------------------------------------------------	----------------------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 Pres Budget/President's Budget:	13.618	21.970	0.000	0.000
FY2004 Pres Budget	13.075	8.333	8.637	8.950
Total Adjustments	-0.543	-13.637	8.637	8.950

Summary of Adjustments

Sec. 8123: Management Reform Initiative	-0.120			
FFRDC reduction	-0.005			
FY 2002 SBIR Assessment	-0.353			
Breakout JI&I Funding to Project X3043		-13.336		
Sec. 313, PL 107-206: Revised Economic Assumption	-0.029			
Sec. 8100 Business Process Reform		-0.034		
Sec. 8135 Economic Assumptions	-0.036	-0.123		
Sec. 8109 IT Cost Growth		-0.016		
Sec. 8029 , P.L. 107-248 FFRDC reduction		-0.019		
Miscellaneous Department Adjustments		-0.109	8.637	8.950
Subtotal	-0.543	-13.637	8.637	8.950

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X2456 - Joint (C4ISR) Battle Center
-------------------------------------------------------------	-------------------------------------------------------------------------------	----------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										

(U) E. ACQUISITION STRATEGY: *

FY 2002-9. The JBC does not have a major contract for their RDT&E efforts. Equipments that are required to support our various projects are either bought from other service contracts and/or from the GSA schedule. Services are provided by other services and/or various vendors with expertise on a specific assessment we are accomplishing.

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

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February-2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X2456 - Joint (C4ISR) Battle Center						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Support Equip Acquisition	MIPR	GSA Schedule	1.850	0.630	Various	0.670	Various	0.672	Various	Continuing	Continuing	Continuing
Systems Engineering	C-CPFF	South Carolina Res	1.887							0.000	1.887	
Systems Engineering	C-CPFF	ODU	0.509	0.146	03/03	0.150	03/04	0.154	03/05	Continuing	Continuing	Continuing
Gov't Engineering Support	C-CPFF	General Dynamics	1.480	0.593	11/02	0.631	11/03	0.654	11/04	Continuing	Continuing	Continuing
Contractor Engineering Support	C-CPFF	SAIC	0.300							0.000	0.300	
Gov't Engineering Support	MIPR	Various DoD	3.247	0.580	Various	0.588	Various	0.601	Various	Continuing	Continuing	Continuing
Travel		Various DoD	0.103	0.075	Various	0.078	Various	0.083	Various	Continuing	Continuing	Continuing
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			9.376	2.024		2.117		2.164		Continuing	Continuing	
Remarks:												
Systems Engineering Support	C-CPFF	ODU	0.482	0.117	03/03	0.120	03/04	0.124	03/05	Continuing	Continuing	Continuing
Contractor Engineering Support	C-CPFF	General Dynamics	1.611	0.470	11/02	0.506	11/03	0.523	11/04	Continuing	Continuing	Continuing
Gov't Engineering Support	MIPR	Various DoD	3.165	0.720	Various	0.758	Various	0.775	Various	Continuing	Continuing	Continuing
Travel		Various DoD	0.054	0.057	Various	0.060	Various	0.065	Various	Continuing	Continuing	Continuing
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			5.312	1.364		1.444		1.487		Continuing	Continuing	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X2456 - Joint (C4ISR) Battle Center							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Dev Support Equip Acquisition	MIPR	GSA Schedule	4.245	1.304	Various	1.320	Various	1.326	Various	Continuing	Continuing	Continuing	
Systems Engineering	C-CPFF	ODU	1.407	0.260	03/03	0.263	03/04	0.266	03/05	Continuing	Continuing	Continuing	
Systems Engineering	C-CPFF	MITRE	0.410	0.150	11/02	0.165	11/03	0.175	11/04	Continuing	Continuing	Continuing	
Contractor Engineering Support	C-CPFF	General Dynamics	4.000	1.160	11/02	1.238	11/03	1.248	11/04	Continuing	Continuing	Continuing	
Gov't Engineering Support	MIPR	Various DoD	9.875	1.862	Various	1.875	Various	2.062	Various	Continuing	Continuing	Continuing	
Contractor Engineering Support	C-CPFF	Various	0.714								0.714		
Travel		Various DoD	0.382	0.209	Various	0.215	Various	0.222	Various	Continuing	Continuing	Continuing	
Subtotal T&E			21.033	4.945		5.076		5.299		Continuing	Continuing		
Remarks:													
Contractor Engineering Support											0.000		
Government Engineering Support											0.000		
Program Management Support											0.000		
Travel											0.000		
Transportation											0.000		
SBIR Assessment											0.000		
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Total Cost			35.721	8.333		8.637		8.950		Continuing	Continuing		
Remarks:													

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME X3011 - Joint Battle Management Command and Control					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost				26.391	27.213	28.029	28.892	29.772	30.643	Continuing	Continuing
RDT&E Articles Qty											0

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

The scope of the Joint Interoperability and Integration (JI&I) function has increased to include oversight and direction of Joint Battle Management Command and Control (BMC2) capabilities. This oversight will facilitate the improvement in organization, training and equipping of joint forces, as well as, improvement in system-to-system interoperability and connectivity.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
-------------------------------------------	-------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X3011 - Joint Battle Management Command and Control
-------------------------------------------------------------	-------------------------------------------------------------------------------	--------------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			26.391	27.213
RDT&E Articles Quantity				

FY04-05: The purpose of the Joint Battle Management Command and Control (BMC2) efforts are to promote the improvement in organization, training and equipping of joint forces, resulting in joint doctrine, concepts, and requirements, as well as, integration of architectures for BMC2 interoperability and connectivity. Oversight of this initiative by Joint Interoperability and Integration (JI&I) will promote stronger coordination of the Department of Defense Joint BMC2 efforts.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February-2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X3011 - Joint Battle Management Command and Control			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	0.000	26.391	27.213
Total Adjustments		0.000	0.000	26.391	27.213
Summary of Adjustments					
Program Adjustments				26.391	27.213
Subtotal		0.000	0.000	26.391	27.213
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February-2003																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME X3011 - Joint Battle Management Command and Control																									
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Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost																					
Not Applicable																															

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February-2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X3011 - Joint Battle Management Command and Control						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February-2003		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-7				0305188N - Joint Military Intelligence Program			X3011 - Joint Battle Management Command and Control					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Support						0.000		0.000				
Government Support	MIPR	Various DoD				26.391	Various	27.213	Various	Continuing	Continuing	
Contractor Support						0.000		0.000				
Contractor Support						0.000		0.000				
Travel						0.000		0.000				
Subtotal T&E			0.000	0.000		26.391		27.213		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												0.000
Government Engineering Support												0.000
Program Management Support												0.000
Travel												0.000
Transportation												0.000
SBIR Assessment												0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
Total Cost				0.000		26.391		27.213		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint Military Intelligence Program				PROJECT NUMBER AND NAME X3043 - Joint Interoperability and Integration					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost			13.072	15.385	15.572	15.663	15.727	16.188	16.561	Continuing	Continuing
RDT&E Articles Qty											0

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

The Unified Command Plan 2002 assigned Commander, USJFCOM with the mission as the Joint Force Integrator. Additionally, the Chairman Joint Chiefs of Staff (CJCS) directed Commander, USJFCOM as lead agent to transform the Armed Forces. In support of these two missions, USJFCOM Joint Interoperability and Integration (JI&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&I works closely with Combatant Commanders,/Services/Agencies (C/S/A) to ensure warfighting deficiencies are identified, develops synchronized Doctrine, Organizational, Training, Material, Leadership, Personnel, and Facilities (DOTMLPF) plans to ensure the warfighter has interoperable capabilities, and provides prioritized recommendations for Joint Requirement Oversight Council (JROC) endorsement. A USJFCOM JI&I transition fund supports the DOTMLPF synchronization plan concept allowing for rapid insertion of capabilities into the field while serving as a bridge until the next Service or Agency POM cycle. For future required capabilities critical to joint warfighting, USJFCOM JI&I is responsible to review and confirm all Department of Defense (DoD) Mission Need Statements (MNSs), Capstone Requirement Documents (CRDs), Operational Requirement Documents (ORDs), and C4I Support Plans (C4ISPs) for interoperability key performance parameters (IKPPs), information exchange requirements (IERs), and operational architecture views (OVs) in accordance with Department of Defense and Chairman Joint Chiefs of Staff directions and instructions.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X3043 - Joint Interoperability and Integration
-------------------------------------------------------------	-------------------------------------------------------------------------------	---------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

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

FY03: USJFCOM JI&I executed under project X2456 in fiscal year 2002 Phase I of the Joint Requirement Oversight Council efforts to commence integration among ground maneuver elements between US Army and US Marine Corps battlefield capabilities. This effort included development of Concept of Operations, information exchange requirements, Tactics/Techniques/Procedures, technical interfaces, and associated test plans. USJFCOM JI&I plans to finish execution of this initiative in Fiscal Year 2003 with validation of CONOPs, TTPs, and field testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.500		
RDT&E Articles Quantity				

FY03: USJFCOM JI&I executed under project X2456 in fiscal year 2002 Phase I of the Joint Requirement Oversight Council efforts of initial Defense Collaborative Planning Tool Suite (DCTS) fielding to USCENTCOM, USPACCOM, USEUCOM and USJFCOM in support of Operation Enduring Freedom and Operation Noble Eagle. USJFCOM JI&I plans to finish execution of this initiative in Fiscal Year 2003.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February-2003
-------------------------------------------	-------------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X3043 - Joint Interoperability and Integration
-------------------------------------------------------------	-------------------------------------------------------------------------------	---------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		9.072	15.385	15.572
RDT&E Articles Quantity				

FY03-05: USJFCOM JI&I plans to execute the Joint Requirement Oversight Council endorsed prioritized recommendations to address critical Joint Task Force (JTF) Command and Control (C2) legacy shortfalls as tasked by the Deputy Secretary of Defense. The recommendations resolve critical JTF interoperability and integration efforts associated with Command and Control (C2) between the Operational and Tactical Level of operations; Improvements in Situational Awareness (SA) between the Strategic, Operational, and Tactical Levels of war; Improvements in US Service integration of Intelligence, Surveillance, and Reconnaissance (ISR) assets utilized in Intelligence Preparation of the Battlefield (IPB) and Information Operations (IO); Improvements in Information Management (IM) exploitation at the Operational Level of war and protection against attack; Improvements in Information Assurance (IA) for coordination among and between Multi-National and Interagency efforts for on-going global operations; Enhancements to communications networks and infrastructure to support Combatant Commanders needs for on-going operations; and improvements to Joint Data Networks (JDN) to support Operational and Tactical Levels of war for both Homeland Defense and on-going global operations.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X3043 - Joint Interoperability and Integration			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	13.072	15.385	15.572
Total Adjustments		0.000	13.072	15.385	15.572
Summary of Adjustments					
Breakout JI&I Funding from Project X2456			13.336		
Sec. 8100 Business Process Reform			-0.053		
Sec. 8135 Economic Assumptions			-0.016		
Sec. 8109 IT Cost Growth			-0.025		
Miscellaneous Department Adjustments			-0.170	15.385	15.572
Subtotal		0.000	13.072	15.385	15.572
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

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Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost																					
Not Applicable																															
<p>* Not required for Budget Activities 1,2,3, and 6</p>																															

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February-2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X3043 - Joint Interoperability and Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February-2003		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-7				0305188N - Joint Military Intelligence Program			X3043 - Joint Interoperability and Integration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Support	C-CPFF	SAIC		1.950	10/02	2.900	10/03	3.170	10/04	Continuing	Continuing	Continuing
Government Support	MIPR	Various DoD		9.072	Various	9.835	Various	9.452	Various	Continuing	Continuing	Continuing
Contractor Support	C-CPFF	ODU		0.980	10/02	1.200	10/03	1.350	10/04	Continuing	Continuing	Continuing
Contractor Support	C-CPFF	GD/BAH		0.970	10/02	1.350	10/03	1.500	10/04	Continuing	Continuing	Continuing
Travel		Various DoD		0.100	Various	0.100	Various	0.100	Various	Continuing	Continuing	Continuing
											0.000	
Subtotal T&E			0.000	13.072		15.385		15.572		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost				13.072		15.385		15.572		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February-2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)				PROJECT NUMBER AND NAME X9283 - Strategic Interoperability Initiative					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost			2.764							0.000	2.764
RDT&E Articles Qty											0

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

The purpose of the Strategic Interoperability Initiative (SII) is to improve interoperability in support of the Combatant Commanders by identifying and assessing proven government and commercial interoperability related standards, technologies, innovations, and processes. The objective is improving Joint Task Force (JTF) Command and Control (C2) interoperability and developing more effective approaches for defining interoperability, information management, and legacy requirements for future DoD and Homeland Security systems.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February-2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X9283 - Strategic Interoperability Initiative

(U) B. Accomplishments/Planned Program

STRATEGIC INTEROPERABILITY INITIATIVE	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.764		
RDT&E Articles Quantity				

FY03 (\$2.764) The overarching interoperability process includes a consistent methodology to generate feasible, supportable solutions for Joint Requirements Oversight Council (JROC) consideration. By instituting a formal, requirements-driven process to gather, categorize, and summarize Combatant Commander issues, crosscutting interoperability issues can be more easily identified while meeting the needs of every Combatant Commander. A formal requirements process, coupled with engineering tools and an understanding of how emerging technologies can be used to solve interoperability problems, will allow feasible solutions to be fielded within a 12-18 month timeline. This process allows Combatant Commander needs to be identified, prioritized, and solved. Necessary for the success of this overarching interoperability process is a disciplined engineering methodology that assesses identified interoperability issues, prioritizes those issues, develops interoperability solutions, evaluates the solutions, and then supports fielding of the solutions. This project will demonstrate and benchmark the engineering processes, methodology, and tools necessary to effect end-to-end interoperability.

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February-2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)	PROJECT NUMBER AND NAME X9283 - Strategic Interoperability Initiative			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	2.764	0.000	0.000
Total Adjustments		0.000	2.764	0.000	0.000
Summary of Adjustments					
Strategic Interoperability Initiative			2.800		
Miscellaneous Department Adjustments			-0.036		
Subtotal		0.000	2.764	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February-2003																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305188N - Joint C4ISR Battle Center (JBC)			PROJECT NUMBER AND NAME X9283 - Strategic Interoperability Initiative																									
<p>(U) D. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;">To Complete</th> <th style="text-align: center; border-bottom: 1px solid black;">Total Cost</th> </tr> </thead> <tbody> <tr> <td colspan="11" style="padding: 10px;">Not Applicable</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) E. ACQUISITION STRATEGY: *</p> <p style="margin-left: 20px;">FY 2003. The JBC has a services contract to support the Strategic Interoperability Initiative efforts. Equipments that are required to support this effort are either bought from other service contracts and/or from the GSA schedule.</p> <p style="margin-top: 40px;">* Not required for Budget Activities 1,2,3, and 6</p>										Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost	Not Applicable										
Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost																					
Not Applicable																															

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February-2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X9283 - Strategic Interoperability Initiative						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Support Equip Acquisition	MIPR	GSA Schedule		0.036	Various						0.036	
Systems Engineering	C-CPFF	South Carolina Res		2.686	01/03						2.686	
Systems Engineering											0.000	
Gov't Engineering Support											0.000	
Contractor Engineering Support											0.000	
Gov't Engineering Support											0.000	
Travel		Various DoD		0.042	Various						0.042	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	2.764		0.000		0.000		0.000	2.764	
Remarks:												
Systems Engineering Support										0.000	0.000	
Contractor Engineering Support										0.000	0.000	
Gov't Engineering Support										0.000	0.000	
Travel										0.000	0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February-2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305188N - Joint C4ISR Battle Center (JBC)			X9283 - Strategic Interoperability Initiative						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev Support Equip Acquisition										0.000	0.000	
Systems Engineering										0.000	0.000	
Systems Engineering										0.000	0.000	
Contractor Engineering Support										0.000	0.000	
Gov't Engineering Support										0.000	0.000	
Contractor Engineering Support										0.000	0.000	
Travel										0.000	0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	2.764		0.000		0.000		0.000	2.764	
Remarks:												

R-1 SHOPPING LIST - Item No. 202

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						R-1 ITEM NOMENCLATURE 0305192N - JOINT MILITARY INTELLIGENCE PROGRAM					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	13.695	6.939	7.038	5.314	4.762	4.260	4.372	0.000	0.000	N/A	46.380
X2295 GCCS-I3	13.695	6.939	7.038	5.314	4.762	4.260	4.372	0.000	0.000	N/A	46.380
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: As directed in an Office of Secretary of Defense Intelligence Program Decision Memorandum (IPDM), Joint Military Intelligence Program (JMIP) funds, under Navy Executive Agency, were employed in FY01 to implement General Service (GENSER) Integrated Imagery and Intelligence (I3) mission applications into the Defense Information Systems Agency (DISA) Global Command and Control System (GCCS) in support of the joint community. GCCS-I3 provides Services and Agencies with a repository of C4I-related tools, services, and applications to minimize redundant development and maximize commonality and interoperability across the joint tactical intelligence community. This project is responsible for the development of interactive intelligence overlay integration, intelligence preparation of the battlefield, ground unit composition and decomposition, enemy intent and capability integration; terrain delimitation, trafficability and movement analysis; All Source Analysis System (ASAS) interface; weather data integration; collection status visualization; C2-to-Request for Information (RFI) integration; General Service (GENSER) and Sensitive Compartmented Information (SCI) synchronization and National Security Agency Technical Electronic Intelligence (NSA TECHELINT) data integration. It is expected that existing functionality within Army, Navy, Air Force and Marine Corps C4I systems will be leveraged to the maximum extent possible to meet these Joint requirements.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROGRAM				PROJECT NUMBER AND NAME X2295 - GCCS I3					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	13.695	6.939	7.038	5.314	4.762	4.260	4.372	0.000	0.000	N/A	46.380
RDT&E Articles Qty											0

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

As directed in an Office of Secretary of Defense Intelligence Program Decision Memorandum (IPDM), Joint Military Intelligence Program (JMIP) funds, under Navy Executive Agency, are to be employed in FY01 to implement GENSER Integrated Imagery and Intelligence (I3) mission applications into the Defense Information Systems Agency (DISA) Global Command and Control System (GCCS) in support of the joint community. GCCS-I3 provides Services and Agencies with a repository of C4I-related tools, services, and applications to minimize redundant development and maximize commonality and interoperability across the joint tactical intelligence community. This project is responsible for the development of interactive intelligence overlay integration, intelligence preparation of the battlefield, ground unit composition and decomposition, enemy intent and capability integration; terrain delimitation, trafficability and movement analysis; All Source Analysis System (ASAS) interface; weather data integration; collection status visualization; C2-to-Request for Information (RFI) integration; General Service (GENSER) and Sensitive Compartmented Information (SCI) synchronization and National Security Agency Technical Electronic Intelligence (NSA TECHELINT) data integration. It is expected that existing functionality within Army, Navy, Air Force and Marine Corps C4I systems will be leveraged to the maximum extent possible to meet these Joint requirements.

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 10)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROG.	PROJECT NUMBER AND NAME X2295 - GCCS I3
------------------------------------------------------------	---------------------------------------------------------------------------------	--------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.750	1.448	0.000	0.000
RDT&E Articles Quantity				

Continue to identify and integrate capability to construct a shared Operations-Intel View and analyze all dimensions (surface, sub-surface, endoatmospheric, exoatmospheric, electromagnetic, cyberspace, and human) of the battlespace, in order to determine an adversary's capability to operate in each and to visualize the battlespace and the full spectrum of adversary capabilities and potential courses of action (COA). These capabilities included receiving, displaying, and re-transmitting correlated information in the COP to support CINC and JTF ability to exercise command and control of forces. Migrate development of Intelligence and Imagery segments to meet Joint requirements (PC/NT) and DII COE.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.614	0.600	0.000	0.000
RDT&E Articles Quantity				

Develop a Multi Level Security version of GCCS I3 that will be interoperable across all domains, including an SCI version of GCCS. Develop and integrate tools for MIDB dissemination to and from allied forces from the US/national and theater levels down to the tactical customer. These tools will automate the process of coalition release of MIDB from the US/national theater level to coalition tactical units and will also automate the dissemination of MIDB updates from the coalition tactical level to the US theater/national level.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.990	0.976	0.575	0.555
RDT&E Articles Quantity				

Continue to develop an automated tool to assist analysts in creating local Doctrine, Event, and Situational Templates to use in the Intelligence Preparation of the Battlefield (IPB) process. Selectable and user defined options will result in maximum utility of the templates in conventional military operations and operations other than war. In FY04, the Joint Tactical Analysis Tool (JTAT) will provide an automated, structural terrain analysis tool leading to area delimitation and terrain evaluation based on integration of enemy doctrine, vehicle/equipment constraints and preferences, operational posture, and the natural and man-made terrain features. Selectable and user defined options will result in maximum utility of the templates in conventional military operations and operations other than war.

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROG.	PROJECT NUMBER AND NAME X2295 - GCCS I3
------------------------------------------------------------	---------------------------------------------------------------------------------	--------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.690	0.683	0.450	0.430
RDT&E Articles Quantity				

Continue to build capabilities within GCCS-I3 to exchange data with the UAV control system directly from the COP display. Provide the ability to obtain direct data receipt of Unmanned Aerial Vehicle (UAV) data (both Moving Target Indicator (MTI) and imagery), select inputs for payload control, and provide intelligence data to the control station to assist in the creation of flight planning routes for the auto-pilot UAV's.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.595	1.086	0.366	0.356
RDT&E Articles Quantity				

Continue to integrate Joint Targeting Toolbox (JTT) products into GCCS-I3, providing seamless capability to edit and view the targeting tables in combination with the Order of Battle (OOB) maintenance function performed in GCCS-I3. Provide a single set of interfaces (between JTT, the four Service C4I Systems and GCCS) for creation of target lists, selection of imagery, creation of task collection and plans. Provide means to share/disseminate electronic target folders, joint target lists, and no-strike lists to other command platforms. In FY03, funds in the amount of \$500K were transferred into the line specifically to augment this effort in support of joint development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	0.488	0.450	0.430
RDT&E Articles Quantity				

Continue to create a single imagery access and manipulation mechanism in GCCS-I3 to enable multiple targeting and mission planning systems to access local and remote imagery repositories such as the Imagery Product Library (IPL), through a common interface.

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROG.	PROJECT NUMBER AND NAME X2295 - GCCS I3
------------------------------------------------------------	---------------------------------------------------------------------------------	--------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.390	0.450	0.430
RDT&E Articles Quantity				

Continue to identify and integrate enhanced imagery analysis tools for integration into GCCS-I3 to enable users to tile on the JTT. Enable users to utilize the situational awareness display to search and display higher-quality imagery from other systems in order to support targeting-quality point mensuration capabilities.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	0.488	0.873	0.837
RDT&E Articles Quantity				

Continue to develop and integrate an auto-tracking mechanism into GCCS-I3 imagery tools to enable users to automatically display moving objects within a video clip for display on the map for correlation with other sensor data such as Joint Surveillance Target Attack Radar System (JSTARS).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	0.488	0.475	0.454
RDT&E Articles Quantity				

Continue to develop capabilities to disseminate imagery and intel products from national archives to users that require imagery but do not have the manning to support full-time imagery and intel database administrator/managers. Scale implementation of the database so that data can be managed on a smaller desktop environment to support lower life-cycle costs and increased productivity for low-end users.

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA7	PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROG.	PROJECT NUMBER AND NAME X2295 - GCCS I3
------------------------------------------------------------	---------------------------------------------------------------------------------	--------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.391	0.675	0.645
RDT&E Articles Quantity				

Continue to integrate an Intelligence Surveillance Reconnaissance (ISR) management tool to form the ISR Battle Management portion of an integrated collaborative collection capability. The ISR Battle Management tools will enable users to identify collection opportunities at the national and theater level and to overlay those on other assets to assist in the allocation of resources. Capability will allow users to receive feedback on status of requirements submitted to collection centers.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.000	0.625
RDT&E Articles Quantity				

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

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

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROGRAM	PROJECT NUMBER AND NAME X2295 - GCCS I3			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding (In millions)		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		7.179	6.709		
Current BES/President's Budget		6.939	7.038	5.314	4.762
Total Adjustments		-0.240	0.329	0.000	0.000
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.063			
Reprogrammed from PE 604231N X0521			0.500		
for Joint Targeting Toolbox (JTT)					
Sec.313, PL107-206, Revised Econ. Assumptions		-0.015			
Sec. 8100: Business Process Reform			-0.029		
Sec. 8135: Economic Assumptions		-0.020	-0.038		
Sec. 8109: IT Cost Growth			-0.013		
Miscellaneous Department Adjustments		-0.142	-0.091		
Subtotal		-0.240	0.329	0.000	0.000
(U) Schedule:					
N/A.					
(U) Technical:					
N/A.					

R-1 SHOPPING LIST - Item No. 203

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305192N - JOINT MILITARY INTELLIGENCE PROGRAM			PROJECT NUMBER AND NAME X2295 - GCCS I3					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
N/A.										
(U) E. ACQUISITION STRATEGY:										
N/A.										

R-1 SHOPPING LIST - Item No. 203

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305192N - JOINT MILITARY INTELLIGENCE PROGRAM			X2295 - GCCS I3						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VARIOUS	VARIOUS	15.765	5.281	11/02	4.283	11/03	3.834	11/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	4.869	1.757	11/02	1.031	11/03	0.928	11/04	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development	VARIOUS	VARIOUS	20.634	7.038		5.314		4.762		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305192N - JOINT MILITARY INTELLIGENCE PROGRAM			X2295 - GCCS I3						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost	VARIOUS	VARIOUS	20.634	7.038		5.314		4.762		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 203

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EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305204N Tactical Unmanned Aerial Vehicles			
COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	73.152	254.796	56.521	10.605	10.986	11.141	191.332	281.526
A2478 Tactical Control System	18.173	16.675	36.711	8.954	9.337	9.496	9.655	9.819
A2768 Fire Scout Vertical Takeoff & Landing UAV	47.751	38.631	4.000				180.000	270.000
A2910 Joint Technology Center/Sys Integ Lab	2.286	1.649	1.651	1.651	1.649	1.645	1.677	1.707
A3061 Global Hawk Maritime Demo System\1		189.350						
A4012 Pioneer Improvement Program		6.832	14.159					
A9113 VTOL UAV MPR Study	4.942							
A9155 NBC Payload		1.659						
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for the development of Tactical Unmanned Aerial Vehicle systems that provide warfighters with dedicated day/night Aerial Reconnaissance, Surveillance and Target Acquisition (RSTA) capabilities; and, intelligence, communications/data dissemination; electronic warfare; weather data collection to support combat operations; minefield detection; and nuclear/biological/chemical reconnaissance in limited adverse weather capabilities.</p> <p>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 RSTA and combat assessment. TCS provides connectivity to designated C4I systems and will interface with Navy Global Hawk Maritime Demonstration (GHMD) system, the Broad Area Maritime Surveillance (BAMS) High Altitude Endurance (HAE) UAV system, the Marine Corps Pioneer, and the Navy Predator from both afloat and ashore. TCS is being developed in concert with the development of UAV concept of operations (CONOPS) so as to ensure system functionality within operational requirements.</p> <p>Vertical Takeoff and Landing 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, including Line-of-sight tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay), without the use of manned aircraft or reliance on limited joint theater or national assets. The Fire Scout VTUAV will be used by the Fleet for experimentation, demonstrations, concept of operations development, and air wing training. The Fire Scout VTUAV air vehicle is designed for modular mission payloads, autonomous vertical launch and recovery, autonomous waypoint navigation, command override capability, and can operate from any/all air capable ships as well as confined area land bases. Interoperability is achieved through the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link. The FY 2004 program completes shipboard testing and integration.</p> <p>\1 Global Hawk Maritime Demonstration System budgeted in Program Element 0305205N, High Altitude Endurance UAV, in FY 2004 and out.</p> <p>* Includes the following Congressional adds: \$7.1M for Tactical Control System (\$4.1 million for JOTBS and \$3.0 million for TCS sensor data receipt from multiple UAVs), \$1 million for the Multiple Link Antenna System ACTD, \$1.7 million for Nuclear, Biological and Chemical UAV payloads, and \$14 million for Global Hawk BAMS, less Congressional undistributed reductions. \$1.0 million added for Miniaturized High Definition Camera is appropriately funded as a Science and Technology effort, and has been reclassified accordingly.</p>								

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-7	R-1 ITEM NOMENCLATURE 0305204N Tactical Unmanned Aerial Vehicles	
<p>JTC/SIL: 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>Global Hawk Maritime Demonstration (GHMD) System: The Secretary of the Navy directed acquisition of a Global Hawk Maritime Demonstration (GHMD) System to develop the Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) in support of maritime reconnaissance and strike support mission areas. The GHMD system will also serve as an enduring unmanned test bed that can be used to demonstrate advanced payloads, alternate sensors, autonomous decision aides, and command, control and communications systems for incorporation into future naval warfighting systems and cultural building for U.S. Navy (USN) High Altitude Endurance (HAE) Unmanned Aerial Vehicles (UAVs). The GHMD System will be designed to demonstrate CONOPS for a long-dwell, all weather, day/night, wide area maritime intelligence, surveillance and reconnaissance (ISR) and include communication/interfaces with other theater systems required to support Carrier Battle Group Commanders, Fleet Commanders, as well as joint tactical war fighters at various levels. The GHMD System will be a fully autonomous, high altitude, long endurance UAV that is directly responsive to theater tasking and designed to operate in low-to-moderate defensive threat environments. The GHMD System will consist of two RQ-4A Unmanned Aerial Vehicles (UAVs), an AN/MSQ-131 Ground segment which includes the mission control element (MCE) and the launch and recovery element (LRE); and radar, electro-optical/infrared (EO/IR), and Signals Intelligence (SIGINT) sensors optimized for the maritime environment. The USN will leverage the U.S. Air Force (USAF) low rate initial production (LRIP) and engineering and manufacturing ground station, communication suite, payload, sensor and data dissemination in support of the maritime surveillance requirements. This project continues in FY 2004-2009 in PE 0305205N, High Altitude Endurance UAV.</p> <p>Pioneer Product Improvement Program (PIP): The Pioneer UAV provides near real-time intelligence, reconnaissance, and surveillance, including video imagery for artillery , Naval Gunfire Support and battle damage assessment over land and sea for the Marine Corps. First deployed as a land-based system in 1986, Pioneer is configured to operate on LPD-4 class ships. The last Pioneer systems were procured in the Weapons Procurement, Navy appropriation and delivered in the early 1990's. The Pioneer PIP is a spiral development effort that will provide the upgrades necessary to ensure the long-term viability of Pioneer for the Marine Corps. The Pioneer PIP will develop Payloads, Ground Control Station upgrades, Launch and Recovery System Upgrades (including mobility enhancements), Tactical Data Link upgrades (including TCS), and Air Vehicle Upgrades (including auxiliary fuel, engine, and electrical power).</p> <p>VTOL UAV MPR Study: Vertical Take-off and Landing UAV Maritime Patrol and Reconnaissance Study is a Congressional add for the study of air vehicle configurations and sensor availability, mix and requirements to support long-dwell ISR missions in a maritime environment.</p> <p>Nuclear, Biological, Chemical (NBC) Payload: The NBC Payload is for a Miniature Detection Devices as part of the Naval UAV Payload effort to be used only for the continuation of an industry based research program for light weight low power Nuclear, Chemical and Biological (NBC) sensors and isotope identification techniques.</p>		

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 43)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A2478 Tactical Control System				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A2478 Tactical Control System		18.173	16.675	36.711	8.954	9.337	9.496	9.655	9.819
RDT&E Articles Qty									
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: *Includes the following Congressional adds: In FY 2003: \$7.1M for Tactical Control System (\$4.1 million for JOTBS and \$3.0 million for TCS sensor data receipt from multiple UAVs) and \$1.0M for the Multiple Link Antenna System ACTD, less Congressional undistributed reductions; in FY 2002: \$2.0 million for JOTBS, less Congressional undistributed reductions.</p> <p>The Tactical Control System (TCS) provides interoperability and commonality for mission planning, command and control, and C41 interfaces for Tactical and Medium Altitude Endurance (MAE) Unmanned Aerial Vehicles (UAVs) including the Army Shadow 200 Tactical UAV, the Navy/Marine Corps Fire Scout Vertical Takeoff and Landing (VTOL) Tactical UAV (VTUAV), Marine Pioneer UAV, Air Force Predator MAE UAV and the Broad Area Maritime Surveillance UAV. TCS will also provide a Level Five capability with the Navy Global Hawk.</p> <p>TCS provides a full range of scaleable UAV 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 two or more different UAV types for reconnaissance, surveillance, and combat assessment.</p> <p>TCS provides UAV command, control and processing from Ground Vehicles, Ships, and Fixed Locations. Beginning in FY04, TCS will focus development on a command and control capability for High Altitude Endurance (HAE) Air Vehicles aboard CVN/LHA/LHD and Tactical Support Centers (TSCs). In addition, this effort will investigate sharing processing assets with the Joint Service Imagery Processing System - Navy (JSIPS-N) Tactical Input Segment (TIS) component.</p> <p>TCS supports seamless integration into existing Service C4I architectures and interfaces with other manned and unmanned reconnaissance platforms and intelligence systems to provide information superiority through cross-cueing.</p> <p>TCS maximizes the use of commercial and government off-the shelf hardware and software whenever possible. TCS software is interoperable and is compliant with the OASD(C3I) Joint Technical Architecture (JTA) and Distributed Common Ground System (DCGS) standards.</p>									

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2478 Tactical Control System
-------------------------------------------------------------	-------------------------------------------------------------------------------	----------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	15.685	8.075	36.711	8.954
RDT&E Articles Quantity				

Continued TCS Block II development in FY2003, including validation and flight-testing of the Fire Scout VTUAV payload functions and TCDL command and control, adds PIONEER, and initiates development of TCS Block III for GHMD and BAMS UAV. Complete TCS Block II development in FY2004, and obtain flight clearance to control dissimilar vehicles from a single ground station running TCS software. Ground and flight-testing included. Completes design of multi-vehicle UAV control. Continued development of TCS Block III includes GHMD integration aboard CV/CVN and the P-3 Tactical Support Center. FY 2005 effort completes TCS Block III and upgrades the Marine Corps and Joint Forces Command Ground Stations to be able to receive GHMD Level 2 sensor data.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	1.500		
RDT&E Articles Quantity				

Continued General Test Support for Multiple Link Antenna System/Multi-function Self-Aligned Gate Array Technology (MLAS/MSAG) Advanced Concept Technology Demonstration (ACTD), including testing of tile technology and overall MLAS system at contractor and government facilities. Also includes test support at field and contractor facilities.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.988	4.100		
RDT&E Articles Quantity				

Develop for Joint Forces Command the capability to fly multiple dissimilar UAVs by initiating JOTBS enhancements.

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2478 Tactical Control System

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.000		
RDT&E Articles Quantity				

TCS modifications to receive sensor data from a variety of UAVs, including GHMD HAE UAV.

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

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

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2478 Tactical Control System																																																				
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;">(U) Funding:</th> <th style="text-align: right; padding: 5px;">FY 2002</th> <th style="text-align: right; padding: 5px;">FY 2003</th> <th style="text-align: right; padding: 5px;">FY 2004</th> <th style="text-align: right; padding: 5px;">FY 2005</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">FY 2003 President's Budget:</td> <td style="text-align: right; padding: 5px;">17.641</td> <td style="text-align: right; padding: 5px;">9.067</td> <td style="text-align: right; padding: 5px;">9.202</td> <td style="text-align: right; padding: 5px;">9.360</td> </tr> <tr> <td style="padding: 5px;">Current BES/President's Budget:</td> <td style="text-align: right; padding: 5px;">18.173</td> <td style="text-align: right; padding: 5px;">16.675</td> <td style="text-align: right; padding: 5px;">36.711</td> <td style="text-align: right; padding: 5px;">8.954</td> </tr> <tr> <td style="padding: 5px;">Total Adjustments</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">0.532</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">7.608</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">27.509</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">-0.406</td> </tr> <tr> <td colspan="5" style="padding: 5px 5px 5px 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding: 5px 5px 5px 20px;">Economic Assumptions</td> <td style="text-align: right; padding: 5px;">-0.049</td> <td style="text-align: right; padding: 5px;">-0.391</td> <td style="text-align: right; padding: 5px;">-0.959</td> <td style="text-align: right; padding: 5px;">-0.167</td> </tr> <tr> <td style="padding: 5px 5px 5px 20px;">Congressional Increases</td> <td></td> <td style="text-align: right; padding: 5px;">8.100</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px 5px 5px 20px;">Other Navy/ OSD Adjustments</td> <td style="text-align: right; padding: 5px;">0.614</td> <td></td> <td style="text-align: right; padding: 5px;">28.468</td> <td style="text-align: right; padding: 5px;">-0.239</td> </tr> <tr> <td style="padding: 5px 5px 5px 20px;">Congressional Undistributed Reductions</td> <td style="text-align: right; padding: 5px;">-0.033</td> <td style="text-align: right; padding: 5px;">-0.101</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px 5px 5px 20px;">Subtotal</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">0.532</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">7.608</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">27.509</td> <td style="text-align: right; padding: 5px; border-top: 1px solid black;">-0.406</td> </tr> </tbody> </table> <p style="padding: 10px 5px 5px 5px;">(U) Schedule: Not applicable</p> <p style="padding: 10px 5px 5px 5px;">(U) Technical: Not applicable</p> <p style="padding: 10px 5px 5px 5px;">(U) D. OTHER PROGRAM FUNDING SUMMARY: Not applicable</p> <p style="padding: 10px 5px 5px 5px;">(U) E. ACQUISITION STRATEGY:</p> <p style="padding: 10px 5px 5px 5px;">These acquisitions will be made by modifying the competitively awarded TCS contract, which Raytheon won 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>					(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005	FY 2003 President's Budget:	17.641	9.067	9.202	9.360	Current BES/President's Budget:	18.173	16.675	36.711	8.954	Total Adjustments	0.532	7.608	27.509	-0.406	Summary of Adjustments					Economic Assumptions	-0.049	-0.391	-0.959	-0.167	Congressional Increases		8.100			Other Navy/ OSD Adjustments	0.614		28.468	-0.239	Congressional Undistributed Reductions	-0.033	-0.101			Subtotal	0.532	7.608	27.509	-0.406
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																																		
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R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2478 Tactical Control System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Raytheon, Falls Church, VA	51.380	10.474	11/02	26.937	11/03	5.912	11/04	Continuing	Continuing	
Ancillary Hardware Development	WX	Various	5.761							Continuing	Continuing	
Systems Engineering	WX	NAWCAD, Pax River, MD	2.321							Continuing	Continuing	
Systems Engineering	WX	NSWC-Dahlgren, Va	4.634							Continuing	Continuing	
Training	WX	NSWC-IH, Indian Head, MD	5.584							Continuing	Continuing	
Award Fees	C/CPAF	Raytheon, Falls Church, VA	2.341	2.182	06/03	5.148	06/04	0.709	06/05	Continuing	Continuing	
Subtotal Product Development			72.021	12.656		32.085		6.621		Continuing	Continuing	
Remarks:												
Software Development	MIPR	JTC/SIL, Redstone, AL	3.800									
Integrated Logistics Support	WX	Various	1.460			0.170	11/03	0.200	11/04	Continuing	Continuing	
Technical Data	WX	NAWCAD, Pax River MD/Other	2.755			0.128	11/03	0.128	11/04	Continuing	Continuing	
Contractor Engineering Support	C/FFP	Various	0.100	0.181	03/03	1.829	12/03	0.510	12/04	Continuing	Continuing	
Government Engineering Support	WX	NAWCAD, Pax River, MD	0.300	2.268	11/02	1.138	11/03	0.680	11/04	Continuing	Continuing	
Subtotal Support			8.415	2.449		3.265		1.518		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2478 Tactical Control System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	MIPR	JITC, FT Huachuca, AZ	0.990			0.500	11/03	0.350	11/04	Continuing	Continuing	
Developmental Test & Evaluation	WX	CIRPAS, Monterey, CA	2.051			0.281	11/03	0.170	11/04	Continuing	Continuing	
Operational Test & Evaluation	WX, MIPR	Various	1.480							Continuing	Continuing	
Test Assets	WX	NSWC-Dahlgren, VA	1.000	1.500	12/02					Continuing	Continuing	
Subtotal T&E			5.521	1.500		0.781		0.520		Continuing	Continuing	
Remarks:												
Program Management Support	WX	Various	1.450		11/02	0.405	11/03	0.255	11/04	Continuing	Continuing	
Travel	WX	Various	1.422	0.070	11/02	0.175	11/03	0.040	11/04	Continuing	Continuing	
Subtotal Management			2.872	0.070		0.580		0.295		Continuing	Continuing	
Remarks:												
Total Cost			88.829	16.675		36.711		8.954		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																				DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&e, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles								PROJECT NUMBER AND NAME A2478 Tactical Control System																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
FDR: Fire Scout				▲																												
PDRs: JOTBS, Sensors & PIP							▲																									
CDRs: JOTBS, Sensors & PIP								▲																								
Block 1 Development	■																															
Block 2 Development	■																															
Fire Scout	■																															
PIP					■																											
JOTBS					■																											
Sensor Modification					■																											
Block 3 Development									■																							
TCS Multi-Platform Upgrades																	■															
Test & Evaluation Milestones																																
Block 1 DT	▲																															
DT/OT: PIP										▲	▲																					
Flight Test: GHMD																		▲	▲													

R-1 SHOPPING LIST - Item No. 204

Exhibit R-4a, Schedule Detail							Date:	
							February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E BA-7	0305204N Tactical Unmanned Aerial Vehicles				A2478 Tactical Control System			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Acquisition Milestones								
FDR: Fire Scout		1Q						
PDRs: JOTBS, Sensors & PIP		3Q						
CDRs: JOTBS, Sensors & PIP			1Q					
Block 1 Development (Shadow TUAV functionality)	1Q							
Block 2 Development (VTUAV/Predator/Pioneer functionality)	1Q-4Q	1Q-4Q	1Q-4Q					
Fire Scout	1Q-4Q	1Q-4Q						
PIP		2Q-4Q	1Q-4Q					
JOTBS		2Q-4Q	1Q-4Q					
Sensor Modification		2Q-4Q	1Q-4Q					
Block 3 Development		3Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
TCS Multi-Platform Upgrades					3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Test & Evaluation Milestones								
Block 1 DT	1Q							
DT/OT: PIP			2Q-4Q					
Flight Test: GHMD				3Q-4Q	1Q-2Q			

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A2768 Vertical Take-off Landing UAV				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A2768 Fire Scout Vertical Take-off & Landing UAV		47.751	38.631	4.000	0.000	0.000	0.000	180.000	270.000
RDT&E Articles Qty									
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Fire Scout Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (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 Fire Scout VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation, and battle management (including communications relay). In FY02 the Fire Scout VTUAV program was restructured to focus on technology development and demonstration. Production was concluded with the completion of Low-Rate Initial Production (LRIP) 1 and FY03 LRIP 2 funding was reallocated to complete the Engineering and Manufacturing Development (EMD) phase. Completion of the EMD phase (Less Operational Evaluation , ship integration and test) will provide a robust Fire Scout VTUAV for fleet use in experimentation, demonstrations, concept of operations development, and air wing training. The Fire Scout VTUAV was designed for launches and recovers vertically and can operate from any/all air capable ships as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery (afloat and ashore), autonomous waypoint navigation with command override capability, a heavy fuel engine and the ability to incorporate modular mission payloads. Interoperability is designed to be achieved through the use of the Tactical Control System (TCS) software in the ground control station, and the use of the Tactical Common Data Link (TCDL). The data from the Fire Scout VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence system, architecture and protocols.</p> <p>The Navy recognized that completion of the Fire Scout VTUAV EMD program and LRIP 1 system will provide benefits in several specific areas. These include: maturation of the TCS software; productionization of the TC DL; development of an advanced electro-optical/infrared/laser designator-rangefinder payload; and risk reduction for follow-on Naval UAV programs. As of December 2002, Fire Scout VTUAV had completed 35 months of a planned 42-month EMD program. Fabrication of a Developmental Test System is complete and flight-testing is underway. Fabrication of the LRIP 1 system is underway and will be completed in FY03. The FY 2004 program completes shipboard testing and integration.</p>									

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2768 Vertical Take-off Landing UAV
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	37.989	35.216	2.500	0.000
RDT&E Articles Quantity				

Continue Engineering and Manufacturing Development of the Fire Scout VTUAV system. FY04 funds complete the effort.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.865	0.207	0.000	0.000
RDT&E Articles Quantity				

ILS, technical data, and training system development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.135	1.558	0.750	0.000
RDT&E Articles Quantity				

Developmental testing of the Fire Scout VTUAV system.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2768 Vertical Take-off Landing UAV
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.762	1.650	0.750	0.000
RDT&E Articles Quantity				

Engineering management, program technical management, and management support for the Fire Scout VTUAV system. These include transportation of system assets, fleet introduction team and program office personnel travel, and contract support services.

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

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2768 Vertical Take-off Landing UAV			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:		47.795	43.602	0.000	0.000
Current BES/President's Budget:		47.751	38.631	4.000	0.000
Total Adjustments		-0.044	-4.971	4.000	0.000
Summary of Adjustments					
Other Navy/OSD Adjustments			-4.000	4.000	
Congressional Undistributed Reductions			-0.247		
Economic Assumptions		-0.132	-0.724		
Congressional Rescissions		-0.102			
Reprogrammings		0.190			
Subtotal		-0.044	-4.971	4.000	
(U) Schedule: Not applicable					
(U) Technical: Not applicable					
(U) D. OTHER PROGRAM FUNDING SUMMARY: Not applicable					
(U) E. ACQUISITION STRATEGY:					
Upon completion of EMD shipboard integration and testing, the Fire Scout VTUAV system will be moved to the Naval Strike and Air Warfare Center (NSAWC) for continued air wing training, Concept of Operations development, and demonstrations and experimentation at NAS Fallon, NV.					

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2768 Vertical Take-off Landing UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIFAF	NGC-Ryan, San Diego, CA	111.668	34.716	11/02	2.500	11/03				148.884	144.168
Ship Integration	PD	NAVSEA, Arlington, VA	3.466							Continuing	Continuing	
Ship Integration	WX	NSWC, Indian Head, MD	0.153							Continuing	Continuing	
Award Fees	C/CPIFAF	NGC-Ryan, San Diego, CA	4.456	0.500	04/03						4.956	4.956
Subtotal Product Development			119.743	35.216		2.500		0.000		Continuing	Continuing	157.459
Remarks:												
Integrated Logistics Support	WX	NAWC-AD, Lakehurst, NJ	1.379							Continuing	Continuing	
Integrated Logistics Support	WX	NAWC-AD, Pax River, MD	2.012	0.107	01/03					Continuing	Continuing	
Technical Data	WX	NSWC, Crane, IN	0.900							Continuing	Continuing	
Integrated Logistics Support	WX	NSWC, Indian Head,	4.025	0.100	01/03					Continuing	Continuing	
Subtotal Support			8.316	0.207		0.000		0.000		Continuing	Continuing	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2768 Vertical Take-off Landing UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-AD, Pax River, MD	3.112	1.558	11/02	0.750	11/03			Continuing	Continuing	
Operational Test & Evaluation	WX	Various	1.691							Continuing	Continuing	
Operational Test & Evaluation	WX	China Lake, CA	0.780							Continuing	Continuing	
Subtotal T&E			5.583	1.558		0.750		0.000		Continuing	Continuing	
Remarks:												
Program Management Support	C/FFP	Various	7.372	0.170	12/02	0.170	12/03			Continuing	Continuing	
Government Engineering Support	WX	NAWC-AD, Pax River, MD	7.388	1.400	11/02	0.560	11/03			Continuing	Continuing	
Travel	WX	Various	0.387	0.080	11/02	0.020	11/03			Continuing	Continuing	
Subtotal Management			15.147	1.650		0.750		0.000		Continuing	Continuing	
Remarks:												
Total Cost			148.789	38.631		4.000		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A2910 Joint Technology Center/Systems Integration Lab				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A2910 JTC/SIL		2.286	1.649	1.651	1.651	1.649	1.645	1.677	1.707
RDT&E Articles Qty									
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) was established in 1994 as a center of technical excellence to support all UAV programs within the services. The mission has subsequently expanded to include Service-specific and Joint ISR programs throughout DoD. The JTC/SIL provides a Government test bed for rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and C4I optimization.</p> <p>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 C4I optimization within warfighting exercises and experiments. It is the only simulation system used by the CINCs and Joint Services to support command and battle staff ISR training; there is no alternative available to satisfy those requirements.</p> <p>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 C4I optimization.</p> <p>MUSE is currently in use within all services and unified commands simulating PREDATOR, GLOBAL HAWK, HUNTER, Tactical, 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 C4I 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.</p> <p>Additionally, the JTC/SIL supports a range of materiel developers, integrating prototypes and trainers into the C4I and training environments of supported units. The Tactical Unmanned Aerial Vehicle (TUAV) ground station developed by the JTC/SIL includes an embedded MUSE trainer.</p>									

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2910 Joint Technology Center/System Integration Lab
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.353	0.326	0.329	0.331
RDT&E Articles Quantity				

Labortory 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 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.033	0.823	0.822	0.820
RDT&E Articles Quantity				

MUSE Development - Initial development of UCAV-N model, continued Common Trainer for current platforms, continue to provide ISR simulation support to major exercises and demonstrations, complete integration of TENCAP simulation into PC-based MUSE, complete development of virtual SIGINT platform, continue development of Laser Designator capability, continued upgrade for National Space Assets Enhancements, continued development of UCAV model, continue C4I Enhancements, continued initial Fixed Target Damage simulation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.900	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.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A2910 Joint Technology Center/System Integration Lab			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:		2.300	1.690	1.691	1.688
Current BES/President's Budget:		2.286	1.649	1.651	1.651
Total Adjustments		-0.014	-0.041	-0.040	-0.037
Summary of Adjustments					
Congressional Undistributed Reduction		-0.029	-0.010		
Economic Assumptions		-0.006	-0.031	-0.038	-0.036
Other Navy/OSD Adjustments		0.021		-0.002	-0.001
Subtotal		-0.014	-0.041	-0.040	-0.037
(U) Schedule: Not applicable					
(U) Technical: Not applicable					
(U) D. OTHER PROGRAM FUNDING SUMMARY: Not applicable					
(U) E. ACQUISITION STRATEGY: Not applicable					

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2910 Joint Technology Center/Systems Integration Lab						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	Redstone Arsenal, AL	1.033	0.823	11/02	0.822	11/03	0.820	11/04	Continuing	Continuing	
Award Fees												
Subtotal Product Development			1.033	0.823		0.822		0.820		Continuing	Continuing	
Remarks:												
Development Support	MIPR	Redstone Arsenal, AL	0.900	0.500	11/02	0.500	11/03	0.500	11/04	Continuing	Continuing	
Subtotal Support			0.900	0.500		0.500		0.500		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A2910 Joint Technology Center/Systems Integration Lab						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contracting Engineering Support	MIPR	Redstone Arsenal, AL	0.353	0.326	11/02	0.329	11/03	0.331	11/04	Continuing	Continuing	
Subtotal Management			0.353	0.326		0.329		0.331		0.000	1.339	
Remarks:												
Total Cost			2.286	1.649		1.651		1.651		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System			
COST (\$ in Millions)		FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
A3061 Global Hawk Maritime Demonstration System			189.350					
RDT&E Articles Qty			2					
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Project Unit continues in FY2004-FY2009 in PE 0305205N, High Altitude Endurance Unmanned Aerial Vehicles. * Includes Congressional add of \$14 million for Global Hawk BAMS, less Congressional undistributed reductions.</p> <p>The Navy has identified the need for a long-range and long-dwell UAV capable of providing maritime/land ISR, standoff strike support, and SIGINT collection. The Air Force GLOBAL HAWK can be used in this capacity with the development of a maritime payload. The Navy will utilize the existing Air Force contract to procure a system for experimentation and developmental assets outfitted with maritime mission oriented sensors.</p> <p>The Secretary of the Navy directed acquisition of a Global Hawk Maritime Demonstration (GHMD) System to develop the Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) in support of maritime reconnaissance and strike support mission areas. The GHMD system will also serve as an enduring unmanned test bed that can be used to demonstrate advanced payloads, alternate sensors, autonomous decision aides, and command, control and communications systems for incorporation into future naval warfighting systems and cultural building for U.S. Navy (USN) High Altitude Endurance (HAE) Unmanned Aerial Vehicles (UAVs).</p> <p>The GHMD System will be designed to demonstrate CONOPS for a long-dwell, all weather, day/night, wide area maritime intelligence, surveillance and reconnaissance (ISR) and include communication/interfaces with other theater systems required to support Carrier Battle Group Commanders, Fleet Commanders, as well as joint tactical war fighters at various levels. The GHMD System will be a fully autonomous, high altitude, long endurance UAV that is directly responsive to theater tasking and designed to operate in low-to-moderate defensive threat environments. The GHMD System will consist of two RQ-4A Unmanned Aerial Vehicles (UAVs), an AN/MSQ-131 Ground segment which includes the mission control element (MCE) and the launch and recovery element (LRE); and radar, electro-optical/infrared (EO/IR), and Signals Intelligence (SIGINT) sensors optimized for the maritime environment. The USN will leverage the U.S. Air Force (USAF) low rate initial production (LRIP) and engineering and manufacturing ground station, communication suite, payload, sensor and data dissemination in support of the maritime surveillance requirements.</p> <p>The FY 2003 program initiates the development and acquisition of air vehicles, launch and recovery elements (LRE) , mission control element (MCE), payload test assets, and associated support equipment. Initiate integration of maritime mode in ISS payloads, sensors, SIGINT and communications capabilities.</p>								

R-1 SHOPPING LIST - Item N204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		143.300		
RDT&E Articles Quantity		2		

FY 2003: Initiate development and acquisition of air vehicles, launch and recovery elements (LRE) , mission control element (MCE), payload test assets, and associated support equipment. Initiate integration of maritime mode in ISS payloads, sensors, SIGINT and communications capabilities.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		20.000		
RDT&E Articles Quantity				

Initiate platform integration of the Tactical Control System (TCS) and the GHMD System, including air vehicle/system integration and validation efforts, government and contractor support.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		8.665		
RDT&E Articles Quantity				

Initiate government and contractor engineering support, including, systems engineering, system certification, program management, logistics analysis, planning for test & evaluation of maritime payloads, JITC/Interoperability certification, test facility infrastructure preparation, and C4I study, including assessment of the contractor's compliance with security requirements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.385		
RDT&E Articles Quantity				

Government and Contractor Support. Program Management Support.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System

B. Accomplishments/Planned Program

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

This funding is to develop manufacturing and producibility enhancements for the Global Hawk program. Efforts include procurement of tooling and special test equipment, development and integration of an open system architecture, and manufacturing process improvements.

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

This funding is to establish requirements for utilizing existing infrastructure at the Tactical Support Centers (TSC) to support BAMS UAV. Efforts include, manpower task loading analysis, evaluation of current network infrastructure and identification of upgrades required to support BAMS UAV, and identification of any network connectivity enhancements required to move UAV data from the TSCs to other exploitation facilities.

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004*	FY 2005*
FY 2003 President's Budget:		152.000		
Current BES/President's Budget:		189.350		
Total Adjustments		37.350		

Summary of Adjustments	
Other Navy/OSD Adjustments	
Congressional Undistributed Reductions	-1.504
Economic Assumptions	-3.446
Congressional Increases	42.300
Subtotal	37.350

* Global Hawk Demonstration budgeted in PE#0305205N, High Altitude Endurance UAV, in FY 2004-2009.

(U) Schedule: Not applicable

(U) Technical: Not applicable

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demo System																				
<p>(U) D. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">0305205N High Altitude Endurance UAV APN BLI:</td> <td></td> <td></td> <td style="text-align: right; padding: 5px;">76.358</td> <td style="text-align: right; padding: 5px;">57.316</td> <td style="text-align: right; padding: 5px;">53.409</td> <td style="text-align: right; padding: 5px;">54.256</td> <td style="text-align: right; padding: 5px;">48.155</td> <td style="text-align: right; padding: 5px;">47.707</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) E. ACQUISITION STRATEGY: The Navy GHMD program is an experimentation and demonstration effort and not a formal acquisition program. Development of the GHMD System will leverage the USAF LRIP fixed-price incentive contract for purchase of the baseline Global Hawk system and EMD cost-plus incentive fee contract for the NRE to develop the maritime sensor suite. Integration studies and payload evaluation and development will be performed throughout FY03.</p> <p style="margin-top: 20px;">(U) F. MAJOR PERFORMERS: Not applicable</p>									Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	0305205N High Altitude Endurance UAV APN BLI:			76.358	57.316	53.409	54.256	48.155	47.707
Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>																		
0305205N High Altitude Endurance UAV APN BLI:			76.358	57.316	53.409	54.256	48.155	47.707																		

R-1 SHOPPING LIST - Item No. 204

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A3061 Global Hawk Maritime Demonstration System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	WPAFB, OH		146.800	01/03					Continuing	Continuing	
Software	C/CPAF	Raytheon, VA		12.000	01/03					Continuing	Continuing	
TSC Integration/C4I	WX	SPAWAR, San Diego, CA		4.250	01/03					Continuing	Continuing	
TSC Infrastructure	CP	NGRAY, San Diego, CA		5.000	03/03					Continuing	Continuing	
Ship Integration	WX	NAVSEA		4.750	03/03					Continuing	Continuing	
										Continuing	Continuing	
Subtotal Product Development			0.000	172.800		0.000		0.000		Continuing	Continuing	
Integrated Logistics Support	WX	Various		3.400	01/03					Continuing	Continuing	
Government Engineering Support	WX	NAWC-AD, Pax River, MD		7.179	11/02					Continuing	Continuing	
Studies & Analysis (AOA)	MIPR	MITRE		1.300	01/03					Continuing	Continuing	
Government Engineering Support	WX	NAWC-WD, China Lake, CA		0.536	11/02					Continuing	Continuing	
Subtotal Support			0.000	12.415		0.000		0.000		Continuing	Continuing	

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A3061 Global Hawk Maritime Demonstration System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WX	Various		0.750	02/03					Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.750		0.000		0.000		Continuing	Continuing	
											0.000	
Contract Engineering Support	C/FFP	Various		0.535	03/03					Continuing	Continuing	
Program Management Support	WX	NAWCAD, Pax River, MD		2.600	02/03					Continuing	Continuing	
Travel	WX	NAWCAD, Pax River, MD		0.250	01/03					Continuing	Continuing	
											0.000	
											0.000	
Subtotal Management			0.000	3.385		0.000		0.000		Continuing	Continuing	
Total Cost			0.000	189.350		0.000		0.000		Continuing	Continuing	
Remarks: FY 03 Funding executed under project unit A9284												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A4012 Pioneer PIP			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A4012 Pioneer PIP		6.832	14.159	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Pioneer Unmanned Aerial Vehicle (UAV) provides near real time reconnaissance, surveillance, target acquisition, combat assessment and battlefield management within LOS of a Ground Control Station (GCS) in limited weather, both day and night. Deployments around the world have supported numerous joint military operations and contingencies including Bosnia Herzegovina, Somalia, the Adriatic, Persian Gulf operations, DESERT SHIELD and DESERT STORM. The Navy ceased Pioneer UAV operations in FY02 leaving a minimum detachment at VC-6 for test and contingency support. The Marines will continue support of Pioneer with two operational squadrons and training squadrons under the Pioneer Improvement Program.</p> <p>The Pioneer Product Improvement Program (PIP) addresses the critical issues facing the Pioneer system, including mobility, obsolescence, reliability, and interoperability, while improving performance by utilizing current technology and NDI components. The mobility enhancements consist of a HMMWV-mounted GCS, downsized launcher, and a UAV transport trailer. The GCS will utilize the TCS modified for Pioneer control and the TCDL. The air vehicles will be upgraded for greater endurance, along with an electrical power management system upgrade. An improved EO/IR payload will be selected, procured, and integrated into the air vehicle.</p>								

R-1 SHOPPING LIST - Item No. 204

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A4012 Pioneer PIP
-------------------------------------------------------------	-------------------------------------------------------------------------------	----------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.332	11.559	
RDT&E Articles Quantity				

Perform Spiral 1 development of GCS, mobility enhancements, and command, control and communications upgrades, including software and hardware enhancements. Conduct air vehicle study and perform Spiral 2 development of payloads and engine/endurance/power management upgrades. Conduct developmental and operational testing

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.500	2.600	
RDT&E Articles Quantity				

Develop Pioneer PIP-unique TCS software modules and integrate into the TCS Block II baseline.

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

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(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																													
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R-1 SHOPPING LIST - Item No. 204

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A4012 Pioneer PIP																				
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Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009																		
WPN: 422200 Pioneer PIP		8.828	13.622	8.798	1.953	1.951	1.987	2.023																		

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A4012 Pioneer PIP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	PUI, Hunt Valley, MD		2.228	03/03	8.988	11/03				11.216	
Software Development	TBD	Raytheon, Falls Church, VA		3.500	03/03	2.400	11/03				5.900	
Subtotal Product Development			0.000	5.728		11.388		0.000			17.116	
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River, MD		1.084	01/03	0.851	12/03				1.935	
Integrated Logistics Support	WX	NAWCAD, Pax River, MD				0.900	10/03				0.900	
Subtotal Support			0.000	1.084		1.751		0.000			2.835	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A4012 Pioneer PIP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development&Operational Testing	WX	NAWCAD, Pax River, MD				1.000	12/03				1.000	
Subtotal T&E			0.000	0.000		1.000		0.000		0.000	1.000	
Remarks:												
Travel	WX	NAWCAD, Pax River, MD		0.020	01/03	0.020	12/03				0.040	
Subtotal Management			0.000	0.020		0.020		0.000			0.040	
Remarks:												
Total Cost			0.000	6.832		14.159		0.000		Continuing	Continuing	
Remarks: FY03 Funding executed under project unit A9284.												

R-1 SHOPPING LIST - Item No. 204

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: February 2003									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles								PROJECT NUMBER AND NAME A4012 Pioneer PIP																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Rapid Deployment Capability																																
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CDR																																
MS C																																
IOC																																
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Spiral 1 Ground System Design																																
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Spiral 1 R&D GCS																																
Spiral 1 Air Vehicle Study																																
Spiral 2 Design																																
Spiral 2 Fabrication																																
Test & Evaluation Milestones																																
Spiral 1 DT																																
Spiral 2 DT																																
Spiral 2 OT																																

R-1 SHOPPING LIST - Item No. 204

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A9155 NBC Payload			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A9155 NBC Payload		1.659						
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Congressional add of \$1.7 million, less Congressional undistributed reductions, only for Miniature Detection Devices as part of the Naval UAV Payload effort to be used only for the continuation of an industry based research program for light weight low power Nuclear, Chemical and Biological (NBC) sensors and isotope identification techniques.</p>								

R-1 SHOPPING LIST - Item No. 204

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N Tactical Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A9155 NBC Payload		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.459		
RDT&E Articles Quantity				
Develop an NBC Payload for Small Tactical UAVs. Develop integration & test plans for the NBC Payload. Execute the flight test program and report results.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.200		
RDT&E Articles Quantity				
Assist contractor with test planning activities. Coordinate flight test range. Participate in the flight test effort and report results.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																			
FY 2003 President's Budget:	0.000	0.000	0.000	0.000																																			
Current BES/President's Budget:	0.000	1.659	0.000	0.000																																			
Total Adjustments	0.000	1.659	0.000	0.000																																			
Summary of Adjustments																																							
Congressional Increase		1.659																																					
Subtotal	0.000	1.659	0.000	0.000																																			

R-1 SHOPPING LIST - Item No. 204

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A9155 NBC Payload						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	Constellation Tech, FL		1.459	03/03					Continuing	Continuing	
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	1.459		0.000		0.000		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305204N Tactical Unmanned Aerial Vehicles			A9155 NBC Payload						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD, Pax River, MD		0.200	02/03					Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.200		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	1.659		0.000		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 204

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305205N High Altitude Endurance Unmanned Aerial Vehicles			
COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost			101.448	281.743	240.556	174.090	92.705	47.707
A3061 Global Hawk Maritime Demo Sys*			76.358	57.316	53.409	54.256	48.155	47.707
A4020 BAMS UAV			25.090	224.427	187.147	119.834	44.550	0
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: * In FY 2003, Global Hawk Maritime Demonstration System budgeted in PE 0305204N, Tactical Unmanned Aerial Vehicles.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program 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 as a standoff persistent, Intelligence, Surveillance and Reconnaissance (ISR) asset. This program includes:</p> <p>1) Global Hawk Maritime Demonstration (GHMD) System. The Secretary of the Navy directed procurement of two USAF Global Hawk systems to include the air vehicle and associated support equipment, and integration of maritime payloads, sensors, SIGINT and communications for demonstration and experimentation purposes. The GHMD System will serve as: 1) A Fleet asset for the development of UAV Concept of Operations (CONOPS), tactics, techniques and procedures and cultural building for Navy High Altitude Endurance (HAE) UAVs; and, 2) An enduring test bed for the development, integration and testing of alternate sensors, payloads, communications, and SIGINT for the study system integration for air/ground/afloat assets. This project was initiated in FY 2003 in PE 0305204N, VTUAV.</p> <p>2) Broad Area Maritime Surveillance (BAMS) UAV. The BAMS UAV is a formal acquisition program for the development and fielding of an HAE UAV for the Maritime/Littoral environment, with an FY 2009 IOC. The BAMS UAV will provide Carrier Battle Group (CVBG) and Amphibious Ready Group (ARG) Commanders with a persistent Intelligence, Surveillance and Reconnaissance capability in concert with other manned and unmanned assets. BAMS UAV will consist of air vehicles, ground systems, sensors, communications and SIGINT capabilities optimized for the Maritime/Littoral environment, and will be integrated with other manned and unmanned assets to perform surveillance and reconnaissance of maritime and land targets, strike support, signals intelligence, communications relay, and other ISR missions. The BAMS UAV program is structured to meet the need for persistent ISR as other ISR platforms, specifically the P-3 and EP-3, begin to reach life expectancy in FY08. Although BAMS UAV will not be a one-for-one replacement for any manned platforms, BAMS provides a transformational capability for the Navy.</p> <p>The BAMS UAV concept derives from the analysis conducted during the Broad Area Maritime and Littoral Armed ISR AoA (Multi-mission Maritime Aircraft), which identified the significance of an UAV adjunct to manned platforms. The MMA AoA determined that properly equipped UAVs may fill shortfalls in Combatant Commanders' requirements not currently affordable. BAMS UAV leverages the BAM and Littoral Armed ISR and Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability Mission Needs Statements (MNS).</p>								

R-1 SHOPPING LIST - Item No. 205

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System				
COST (\$ in Millions)		FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A3061 Global Hawk Maritime Demo System				76.358	57.316	53.409	54.256	48.155	47.707
RDT&E Articles Qty									
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>This program was initiated in FY 2003 in Program Element 0305204N, Tactical UAV. It was subsequently determined that the High Altitude Endurance UAV Program Element, PE 0305205N, was the more appropriate line for this effort.</p> <p>The Navy has identified the need for a long-range and long-dwell UAV capable of providing maritime/land ISR, standoff strike support, and SIGINT collection. The Air Force GLOBAL HAWK can be used in this capacity with the development of a maritime payload. The Navy will utilize the existing Air Force contract to procure a system for experimentation and developmental assets outfitted with maritime mission oriented sensors.</p> <p>The Secretary of the Navy directed acquisition of a Global Hawk Maritime Demonstration (GHMD) System to develop the Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) in support of maritime reconnaissance and strike support mission areas. The GHMD system will also serve as an enduring unmanned test bed that can be used to demonstrate advanced payloads, alternate sensors, autonomous decision aides, and command, control and communications systems for incorporation into future naval warfighting systems and cultural building for U.S. Navy (USN) High Altitude Endurance (HAE) Unmanned Aerial Vehicles (UAVs).</p> <p>The GHMD System will be designed to demonstrate CONOPS for a long-dwell, all weather, day/night, wide area maritime intelligence, surveillance and reconnaissance (ISR) and include communication/interfaces with other theater systems required to support Carrier Battle Group Commanders, Fleet Commanders, as well as joint tactical war fighters at various levels. The GHMD System will be a fully autonomous, high altitude, long endurance UAV that is directly responsive to theater tasking and designed to operate in low-to-moderate defensive threat environments. The GHMD System will consist of two RQ-4A Unmanned Aerial Vehicles (UAVs), an AN/MSQ-131 Ground segment which includes the mission control element (MCE) and the launch and recovery element (LRE); and radar, electro-optical/infrared (EO/IR), and Signals Intelligence (SIGINT) sensors optimized for the maritime environment. The USN will leverage the U.S. Air Force (USAF) low rate initial production (LRIP) and engineering and manufacturing ground station, communication suite, payload, sensor and data dissemination in support of the maritime surveillance requirements.</p> <p>The FY 2004 program adds a more robust radar, a turreted EO/IR sensor and a SIGINT capability. In FY05-FY09, the GHMD System will be used as an enduring test bed for experimentation and demonstration to support CONOPS development. The experimentation and demonstration will refine CONOPS and TTPs for wide area surveillance and reconnaissance of maritime and land targets, strike support, SIGINT, and communication relay capabilities. The USN will leverage industry efforts and USAF programs to integrate and improve maritime payloads and sensors to provide a multi-intelligence sensor suite with 360 degrees of continuous coverage and will integrate the GHMD program via the Tactical Control System (TCS) onto shipboard platforms.</p>									

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System
-------------------------------------------------------------	--------------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			60.000	40.000
RDT&E Articles Quantity				

Continued development of GHMD system (initiated in FY 2003 in PE 0305204N), to include:

- Acquisition of air vehicle, LRE, MCE, payload test assets and associated support equipment;
- Development and integration of maritime modes in Integrated Sensor Suite (ISS), payloads, SIGINT and communications;
- TCS/TSC/MCE platform integration;
- Developmental Testing of radar, payloads, sensors, SIGINT and communications.
- Initiate Fleet demonstration&experimentation using GHMD as an eduring test bed, to include integration/testing/evaluation/validation of alternate payloads, sensors, SIGINT and Comms.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			15.073	16.031
RDT&E Articles Quantity				

Continued government and contractor engineering including, systems engineering, system certification, logistics analysis, planning for test & evaluation of maritime payloads, JTIC/Interoperability certification, test facility infrastructure preparation, and C4I study, assessment of the contractor's compliance with security requirements. The FY 2004 program also supports NIMA, JTA compliance analysis and test agency planning for the demonstration efforts, satellite coordination efforts and the shipboard integration efforts. The FY 2005 program continues government and contractor engineering support, including systems engineering, system certification, program management, logistics analysis, flight test & evaluation of maritime payloads, JTIC/Interoperability certification, flight test range charges and network connectivity charges, NIMA support, JTA certification, test agency support evaluations of Fleet Battle Experiment-Mike and other GHMD Demonstration efforts, completion of SPAWAR's C4I study, security certification, and satellite coordination efforts, and shipboard integration efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.285	1.285
RDT&E Articles Quantity				

Government, Contractor and Program Management Support.

R-1 SHOPPING LIST - Item No. 205

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003*	FY 2004	FY 2005
FY 2003 President's Budget:			0.000	0.000
Current BES/President's Budget:			76.358	57.316
Total Adjustments			76.358	57.316

Summary of Adjustments

Congressional Undistributed Reductions				
Economic Assumptions				-1.236
Congressional Increases				
Other Navy/OSD Adjustments			76.358	58.552
Subtotal			76.358	57.316

*In FY03, Global Hawk Maritime Demonstration System funded in PE 0305204N, Tactical Unmanned Aerial Vehicles.

(U) Schedule: Not applicable

(U) Technical: Not applicable

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE:			
						February 2003			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-7		0305205N Endurance Unmanned Aerial Vehicles			A3061 Global Hawk Maritime Demonstration System				
(U) D. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. & Name		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
PE 0305204N			189.350						
(U) E. ACQUISITION STRATEGY:									
The USN GHMD program is an experimentation and demonstration effort. Development of the GHMD assets will leverage the USAF LRIP Fixed-Price Incentive (FPI) contract for purchase of the baseline GHMD System and EMD Cost-Plus Award Fee (CPAF) contract for the development the maritime Integrated Sensor Suite and payloads.									

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305205N Endurance Unmanned Aerial Vehicles			A3061 Global Hawk Maritime Demonstration System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	WPAFB/NGIS				60.000	12/03	40.000	12/04	Continuing	Continuing	
Subtotal Product Development			0.000	0.000		60.000		40.000		Continuing	Continuing	
Remarks:												
Development Support												
Software Development	WX	NIMA, Washington, DC				5.000	12/03	5.000	12/04	Continuing	Continuing	
Integrated Logistics Support	WX	Various				1.000	12/03	1.000	12/04	Continuing	Continuing	
Government Engineering Support	WX	Various				7.283	11/03	8.241	11/04	Continuing	Continuing	
Subtotal Support			0.000	0.000		13.283		14.241		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305205N Endurance Unmanned Aerial Vehicles			A3061 Global Hawk Maritime Demonstration System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation						1.790	11/03	1.790	11/04	Continuing	Continuing	
Subtotal T&E			0.000	0.000		1.790		1.790		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	WX	NAWCAD, Pax River, MD				0.535	11/03	0.535	11/04	Continuing	Continuing	
Program Management Support	WX	NAWCAD, Pax River, MD				0.500	11/03	0.500	11/04	Continuing	Continuing	
Travel	WX	NAWCAD, Pax River, MD				0.250	11/03	0.250	11/04	Continuing	Continuing	
Subtotal Management			0.000	0.000		1.285		1.285		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		76.358		57.316		Continuing	Continuing	

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

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EXHIBIT R4, Schedule Profile																								DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles								PROJECT NUMBER AND NAME A3061 Global Hawk Maritime Demonstration System																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Program Milestones					Award SRR	△	△	IBR				Design Review △				TRR △				TRR △				TRR △								TRR △				
System HW Procurement																																				
Maritime Radar System Integration																																				
Maritime Sensor Integration																																				
Maritime Payload Integration and Test																																				
Alternate Payload Integ/Test (Enduring Test Bed)																																				
Shipboard Integration																																				
TCS Integration																																				
Deliveries																																				
Air Vehicle 1																																				
Air Vehicle 2																																				
LRE																																				
MCE																																				
Test & Demonstration Milestones																																				
AV 1																																				
AV 2																																				

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A4020 BAMS UAV				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A4020 BAMS UAV				25.090	224.427	187.147	119.834	44.550	0.000
RDT&E Articles Qty					2				
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Broad Area Maritime Surveillance (BAMS) UAV is a formal acquisition program for the development and fielding of an HAE UAV for the Maritime/Littoral environment, with an FY09 IOC. The BAMS UAV will provide Carrier Battle Group (CVBG) and Amphibious Ready Group (ARG) Commanders with a persistent Intelligence, Surveillance and Reconnaissance capability in concert with other manned and unmanned assets. BAMS UAV will consist of air vehicles, ground systems, sensors, communications and SIGINT capabilities optimized for the Maritime/Littoral environment, and will be integrated with other manned and unmanned assets to perform intelligence, surveillance and reconnaissance of maritime and land targets, strike support, signals intelligence and other IRS missions. The BAMS UAV program is structured to meet the need for persistent ISR as other ISR platforms, specifically the P-3 and EP-3, begin to reach life expectance. BAMS UAV provides a transformational capability for the Navy.</p> <p>The BAMS UAV concept derives from the analysis conducted during the Broad Area Maritime and Littoral Armed ISR AoA (Multi-mission Maritime Aircraft), which identified the significance of an UAV adjunct to manned platforms. The MMA AoA determined that properly equipped UAVs may fill shortfalls in Combatant Commanders' requirements not currently affordable. BAMS UAV leverages the BAM and Littoral Armed ISR and Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability Mission Needs Statements (MNS).</p>									

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A4020 BAMS UAV
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(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			12.000	186.000
RDT&E Articles Quantity				

Initiate System Demonstration and Development, to include:
 FY 2004: Requirements flow-down and initiation of functional and detailed system specifications, including post-award conference.
 FY 2005: -Continue development of system functional and detailed specifications.
 -Conduct PDR and initiate development test articles to include airframes, sensors, payloads, ground elements and comms (Maritime Synthetic Aperature Radar, turreted EO/IR Sensor, Communications Suite , SIGINT), Automatic Target Recognition/Cueing, Tactical Control System/Tactical Support Center/CV integration.
 -BAMS system software development.
 -Development and acquisition of a systems integration capability, including modeling and simulation, test equipment and software development tools.
 -Integration of airframes/sensor/payloads/comms and ground elements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			10.805	35.590
RDT&E Articles Quantity				

Initiates System Demonstration and Development in FY2004 for system requirements flow down. This includes the development of Maritime Radar, EO/IR Sensor, Communications Suite , SIGINT, Automatic Target Recognition/Cueing, Tactical Control System/Tactical Support Center/CV integration., and the acquisition of air vehicle and associated ground control test assets.
 Initiates Government and contractor engineering, including, systems engineering, logistics analysis, model & simulation, system test & evaluation planning, assessment of the contractor's compliance with security requirements. The FY 2004 program also supports NIMA, JTA compliance analysis and test agency planning for the DT/OTefforts, satellite coordination efforts and the shipboard integration efforts. The FY 2005 program continues government and contractor engineering, including systems engineering, flight clearance and system certification data collection, logistics analysis, JITC/Interoperability certification, NIMA support, JTA certification, security certification, satellite coordination efforts, and shipboard integration efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.285	2.237
RDT&E Articles Quantity				

Government , Contractor and Program Management Support.

R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles	PROJECT NUMBER AND NAME A4020 BAMS UAV																																															
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">FY 2002</th> <th style="width: 10%; text-align: center;">FY 2003</th> <th style="width: 10%; text-align: center;">FY 2004</th> <th style="width: 10%; text-align: center;">FY 2005</th> </tr> </thead> <tbody> <tr> <td colspan="5"> <p>(U) Funding:</p> </td> </tr> <tr> <td style="padding-left: 20px;">FY 2003 President's Budget</td> <td></td> <td></td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td style="padding-left: 20px;">Current BES/President's Budget</td> <td></td> <td></td> <td style="text-align: right;">25.090</td> <td style="text-align: right;">224.427</td> </tr> <tr> <td style="padding-left: 20px;">Total Adjustments</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">25.090</td> <td style="text-align: right; border-top: 1px solid black;">224.427</td> </tr> <tr> <td colspan="5" style="padding-left: 40px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 60px;">Other Navy/OSD Adjustments</td> <td></td> <td></td> <td style="text-align: right;">27.434</td> <td style="text-align: right;">229.267</td> </tr> <tr> <td style="padding-left: 60px;">Economic Assumptions</td> <td></td> <td></td> <td style="text-align: right;">-2.344</td> <td style="text-align: right;">-4.840</td> </tr> <tr> <td style="padding-left: 60px;">Subtotal</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">25.090</td> <td style="text-align: right; border-top: 1px solid black;">224.427</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule: Not applicable</p> <p style="margin-top: 20px;">(U) Technical: Not applicable</p>						FY 2002	FY 2003	FY 2004	FY 2005	<p>(U) Funding:</p>					FY 2003 President's Budget			0.000	0.000	Current BES/President's Budget			25.090	224.427	Total Adjustments			25.090	224.427	Summary of Adjustments					Other Navy/OSD Adjustments			27.434	229.267	Economic Assumptions			-2.344	-4.840	Subtotal			25.090	224.427
	FY 2002	FY 2003	FY 2004	FY 2005																																													
<p>(U) Funding:</p>																																																	
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Current BES/President's Budget			25.090	224.427																																													
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R-1 SHOPPING LIST - Item No. 205

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2003																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles			PROJECT NUMBER AND NAME A4020 BAMS UAV																					
<p>(U) D. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">APN 044200 BAMS UAV</td> <td style="text-align: center; border-bottom: 1px solid black;"></td> <td style="text-align: center; border-bottom: 1px solid black;"></td> <td style="text-align: center; border-bottom: 1px solid black;"></td> <td style="text-align: center; border-bottom: 1px solid black;"></td> <td style="text-align: center; border-bottom: 1px solid black;"></td> <td style="text-align: center; border-bottom: 1px solid black;">202.203</td> <td style="text-align: center; border-bottom: 1px solid black;">370.590</td> <td style="text-align: center; border-bottom: 1px solid black;">440.229</td> </tr> </tbody> </table> <p>(U) E. ACQUISITION STRATEGY:</p> <p>The BAMS UAV acquisition strategy represents a competitive acquisition approach focused towards rapidly fielding an ISR capability and achieving an FY-09 Initial Operational Capability (IOC). In order to support the competition strategy, commercial off-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 Navy's intent is to compete the SD&D contract with options for Low Rate Initial Production.</p> <p>The BAMS UAV will be a spiral, milestone based acquisition, entering the System Development and Demonstration (SDD) phase with a Milestone B decision at the end of 3QFY04. As an extension Maritime Patrol and Reconnaissance Study, and building on the MMA AoA Adjunct Study, and AoA is underway and will be completed in April 2003. The AoA is examining the air vehicle, payload, sensor, SIGINT, and communications options to determine an optimal configuration baseline. In parallel, an acquisition plan is in process that maximizes the use of competitive strategies.</p>									Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	APN 044200 BAMS UAV						202.203	370.590	440.229
Line Item No. & Name	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>																		
APN 044200 BAMS UAV						202.203	370.590	440.229																		

R-1 SHOPPING LIST - Item No. 205

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305205N Endurance Unmanned Aerial Vehicles			A4020 BAMS UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C	TBD				12.000	05/04	186.600	11/04	Continuing	Continuing	
Ancillary Hardware Development												
System Integration	TBD	TBD				3.243	04/04	25.640	11/04	Continuing	Continuing	
Subtotal Product Development						15.243		212.240		Continuing	Continuing	
Remarks:												
Integrated Logistics Support	WX	Various				1.700	11/03	1.700	11/04	Continuing	Continuing	
Government Engineering Support	WX	NAWC-AD, Pax River, MD				5.862	11/03	8.250	11/04	Continuing	Continuing	
Subtotal Support						7.562		9.950		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305205N Endurance Unmanned Aerial Vehicles			A4020 BAMS UAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E						0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	WX	NAWC-AD, Pax River, MD				0.535	11/03	0.537	11/04	Continuing	Continuing	
Program Management Support	WX	NAWC-AD, Pax River, MD				1.500	11/03	1.500	11/04	Continuing	Continuing	
Travel	WX	NAWC-AD, Pax River, MD				0.250	11/03	0.200	11/04	Continuing	Continuing	
Subtotal Management						2.285		2.237		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		25.090		224.427		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 205

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003												
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0305205N Endurance Unmanned Aerial Vehicles								PROJECT NUMBER AND NAME A4020 BAMS UAV																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones	Pre-Mileston Activities								MS B △ △ PAC	PDR △					CDR △					OA △	MS C △					PRR △	IOC ☆									
Development Phase									CtcAward ☆	BAMS UAV Development																										
Deliveries																	1	1					LRIP 1				LRIP 2									
Test & Evaluation Milestones																	SYS Integ. DT				DT/Flight Test															
Development Test																																				
Operational Test																	OA								OTRR △				IOT&E							
Production Milestones																					LRIP 1 Start △								LRIP 2 Start △				LRIP 3 Start △			
LRIP I FY 07 (APN)																																				
LRIP II FY 08 (APN)																																				
LRIP III FY 09 (APN)																																				

R-1 SHOPPING LIST - Item No. 205

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

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305206N Airborne Reconnaissance Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	17.272	16.171	13.345	10.313	29.290	18.871	19.226	19.578
H2694 Advanced Digital Sensors	8.099*	2.521	13.345	10.313	29.290	18.871	19.226	19.578
R2476 Framing Reconnaissance Camera	9.173**	2.817						
R2807 Hyperspectral Upgrade to Airborne Cameras		3.416						
R9114 Electro-Optical Framing Reconnaissance Camera		4.977						
R9115 NRL Applied Optics Reconnaissance Technology		2.440						

*The FY2002 budget reflects Congressional adds for Mission System Weight Development (\$2.5M) executed under H9129; which has been reduced by \$.022M for Congressional undistributed adjustments. **The FY2002 includes Congressional adds reflecting Hyperspectral Modular Upgrades (\$2.6M) executed under R2746 and Electro-Optical (EO) Framing Technologies (\$6.6M) executed under R2676.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (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. The advanced sensor developments will provide the technology transition modules for operational use necessary for the overall migration of the airborne fleet (manned and unmanned) to a Joint Airborne SIGINT Architecture (JASA) (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces. In addition, funds provide for the development/integration and operational assessment of JASA compliant components for the EP-3E and Special Projects (SP) aircraft. Coordinated and complementary airborne sensor development across the military Services and the Defense and Intelligence Agencies are being established for inclusion into the JASA. The two primary objectives for Advanced Technology funding is to evaluate the utility and maturity of technology for airborne reconnaissance applications and 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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs have been successful.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5	R-1 ITEM NOMENCLATURE 0305206N Airborne Reconnaissance Systems	
<p>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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.</p>		

R-1 SHOPPING LIST - Item No. 206

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	8.099 [*]	2.521	13.345	10.313	29.290	18.871	19.226	19.578

*The FY2002 budget reflects a (\$2.5M) Congressional add for Mission System Weight Development executed under H9129; which has been reduced by \$.022M for Congressional undistributed adjustments.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture (ARITA). The advanced sensor program includes technical analyses, 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 beginning 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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors
-------------------------------------------------------------	-----------------------------------------------------------------------------	-----------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.692	0.386	0.811	2.432
RDT&E Articles Quantity				

Story Classic (Special Collections) ALD-9 replacement engineering study. Story Classic Collection Upgrade PDR & CDR. Test and integrate initial Story Classic Collection into SIL. Story Classic Collection upgrades and demonstration.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.520	0.733	3.084	1.047
RDT&E Articles Quantity				

Development of hardware and software interface for Story Teller upgrades; including CDL. Story Teller and Common Data Link (CDL) integration into SIL. Imagery development and Integration. Test and Evaluate Story Teller and CDL in SIL. Integrate Story Teller, CDL and antenna upgrade into aircraft.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.100	0.462	0.000	0.000
RDT&E Articles Quantity				

Story Finder integration and DT/OT.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.000	0.317	0.725
RDT&E Articles Quantity				
Story Book DT/OT (including OPAL/ONYX). Story Book upgrade (including CPC). Story Book signals analysis and upgrade receivers. Development of Story Book Analysis upgrades				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.306	0.450	1.841	0.427
RDT&E Articles Quantity				
Story Maker development, integration and demonstration. Story Maker into Systems Integration Lab (SIL) and perform flight test.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.677	0.000	4.943	3.575
RDT&E Articles Quantity				
JMOD Imagery engineering investigations. Mission system weight development. Develop and demonstrate Special Projects (SP) DF upgrade for SP Systems Requirements Review (SRR). Special Projects Communications/Infrastructure update.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.404	0.490	2.349	2.107
RDT&E Articles Quantity				
Story Finder MPEG upgrades and continued software development. Story Finder MPEG integration into SIL. Story Finder MPEG integration on TKI. Add MPEG message set to Story Teller.				

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	H2694 Advanced Digital Sensors

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	8.163	2.582	13.713	21.602
Current BES/President's Budget	8.099	2.521	13.345	10.313
Total Adjustments	-0.064	-0.061	-0.368	-11.289

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.015		
Congressional rescissions	-0.017			
SBIR/STTR Transfer				
Economic Assumptions	-0.023	-0.046	-0.308	-0.222
Reprogrammings	-0.024			
Other Navy/OSD Adjustments			-0.060	-11.067
Reprioritization of requirements				
Congressional increases				
Subtotal	-0.064	-0.061	-0.368	-11.289

(U) Schedule:

Program Milestones - The FY02 JMOD 1 LRIP milestone was moved to 3Q/02 to reflect the rebaseline of the EP-3E JMOD 1 program, due to addition of Baseline Update. JMOD1 FRP milestone moved from 2Q/06 to 3Q/04 due to Acquisition Strategy Review (ASR) approval. Engineering Milestones - The FY02 PDR moved to 2Q/03 and the CDR to 4Q/03 to reflect the late JMOD contract award due to loss of USAF JASPO funds. T&E Milestones - The FY03 JMOD DT completes 4Q/03 and OT completes in 1Q/04. The FY05 Story Maker DT/OT was moved to 4Q/06 to reflect the Sponsor Adjustment. Contract Milestones - The 4Q/02 TKI R&D contract award was moved from 1Q/02 to 4Q/02 to reflect the baseline for the EP-3E program.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Line Item #35 APN-5 EP-3E OSIP 11-01	50.652	57.704	31.506	38.821	55.728	62.520	62.47	63.56	448.218	871.179
Line Item #46 APN-5 Special Projects Aircraft OSIP 19-97	0.000	10.866	49.601	21.037	31.834	24.313	24.753	25.159	0.000	187.563
 (U) E. ACQUISITION STRATEGY:										
Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDT&E efforts for technology insertions into EP-3E/SP productions programs.										

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305206N Airborne Reconnaissance Systems			H2694 Advanced Digital Sensors						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Hdwre Development-S.F.	SS/CPFF	BTG, Vienna, VA	0.898								0.898	0.898
AncillaryHdwre Development-S.F.	SS/CPFF	Raytheon Systems, IN/TX	4.287								4.287	4.287
Ancillary Hdwre Dev - MPEG	SS/CPFF	Lockheed Martin, CO	0.977	0.386	12/02	0.270	12/03	1.300	12/04	0.496	3.429	3.429
Ancillary Hdwre Development-S.T.	SS/CPFF	Raytheon Systems, IN		0.100	12/02	0.300	12/03	1.047	12/04	0.750	2.197	2.197
Ancillary Hdwre Development-S.B.	SS/CPFF	Raytheon Systems, TX		0.400	12/02					2.000	2.400	2.400
Ancillary Hdwre Development-CPC	SS/CPFF	Raytheon Systems, TX	1.447								1.447	1.447
Aircraft Integration	SS/CPFF	Raytheon Systems, TX	2.414								2.414	2.414
Ancillary Hdwre Development-ESM	SS/CPFF	Condor, San Jose, CA	2.868								2.868	2.868
Ancillary Hdwre Development- Weight Reduction, Congressional	SS/CPFF	CTC, Johnstown, PA	4.228								4.228	4.228
Ancillary Hdwre Development-S.C.	SS/CPFF	Raytheon Indianapolis, IN				6.301	12/03	2.123	12/04	18.271	26.695	26.695
Ancillary Hdwre Development-J2	SS/CPFF	L3Com,TX				1.148	12/03	0.923	12/04		2.071	2.071
Ancillary Hdwre Development-S.P.	SS/CPFF	Argon, VA				2.500	12/03				2.500	2.500
Ancillary Hdwre Development-S.P.	SS/CPFF	L3Com,TX						2.224	12/04		2.224	2.224
Ancillary Hdwre Development	SS/CPFF	Raytheon Systems, TX						0.000		12.897	12.897	12.897
Subtotal Product Development			17.119	0.886		10.519		7.617		34.414	70.555	
Remarks:												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 46)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME H2694 Advanced Digital Sensors						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT/OT & Eval	WX	NAWC,AD Pax River, MD	0.250			0.270	11/03	0.250	11/04	Continuing	Continuing	
DT/OT & Eval	WX	NRL, MD	0.100	0.100	11/02	0.110	11/03	0.120	11/04	Continuing	Continuing	
Subtotal T&E			0.350	0.100		0.380		0.370		Continuing	Continuing	
Remarks:												
Systems Eng Suppt	WX	NAWC,AD Pax River, MD	0.788	0.139	11/02	0.350	11/03	0.350	11/04	Continuing	Continuing	
Travel			0.100	0.100	11/02	0.100	11/03	0.100	11/04			
ILS Suppt			0.050	0.050	11/02	0.050	11/03	0.050	11/04			
Subtotal Management			0.938	0.289		0.500		0.500		Continuing	Continuing	
Remarks:												
Total Cost			26.307	2.521		13.345		10.313		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 46)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R2476 Framing Reconnaissance Camera			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	9.218 [*]	2.817						
RDT&E Articles Qty								

*The FY2002 includes Congressional adds reflecting Hyperspectral Modular Upgrades (\$2.6 million) which will be executed under R2476 and Electro-Optical (EO) Framing Technologies (\$6.6 million) which will be executed under R2676.

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: FEBRUARY 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R2476 Framing Reconnaissance Camera
-------------------------------------------------------------	-----------------------------------------------------------------------------	----------------------------------------------------------------

(U) B. Accomplishments/Planned Program

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

Demonstration of JPEG 2000 Image Decompression Boards.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.656	0.500	0.000	0.000
RDT&E Articles Quantity				

Hyperspectral Target Cueing Demonstration. End-to-end demonstration using JPEG 2000 Boards.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.317	0.000	0.000
RDT&E Articles Quantity				

EO Framing Camera Upgrades for Precision Strike. Real time data fusion processor.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.500	0.000	0.000
RDT&E Articles Quantity				

Airborne Image Exploitation System upgrades.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305206N Airborne Reconnaissance Systems	R2476 Reconnaissance Camera

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	9.218	2.887	0.000	0.000
Current BES/President's Budget	9.218	2.817	0.000	0.000
Total Adjustments	0.000	-0.070	0.000	0.000

Summary of Adjustments

Congressional program reductions	-0.054			
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-0.016			
Reprogrammings				
Other Navy/OSD Adjustments				
Reprioritization of requirements				
Congressional increases				
Subtotal	0.000	-0.070	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 206

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 15 of 46)

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R2476 Framing Reconnaissance Camera				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0305207N, DARP, Special Project A/C	27.443	29.335	10.649	10.939	11.410	11.589			11.764	113.129
(U) E. ACQUISITION STRATEGY:										
The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.										

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305206N Airborne Reconnaissance Advanced Develop			R2476 Framing Reconnaissance Camera						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IR Array	C/CPFF	Recon Opt., Barrington, IL	1.661								1.661	1.661
Dual Band Camera	C/CPFF	Recon Opt., Barrington, IL	12.212								12.212	12.212
Long Range Camera	C/CPFF	Recon Opt., Barrington, IL	2.000								2.000	2.000
Hyperspectral Module	C/CPFF	Recon Opt., Barrington, IL	1.500								1.500	1.500
Camera for Hyperspectral	C/CPFF	Recon Opt., Barrington, IL	1.000								1.000	1.000
Visible and SWIR Modules	C/CPFF	ITS, Honolulu, HI	3.300								3.300	3.300
Precision Strike System	C/CPFF	Recon Opt., Barrington, IL	1.250								1.250	1.250
Flight Tests	WR	NRL, Wash DC	2.290								2.290	2.290
Compression board development	C/CPFF	Space Dyn. Lab. Logan, UT	3.400								3.400	3.400
Precision Strike camera	C/CPFF	Recon Opt., Barrington, IL	1.290								1.290	1.290
100 Megapixel Camera Test	C/CPFF	Recon Opt., Barrington, IL	4.513								4.513	4.513
Hyperspectral Modular Upgrades	CPFF	Recon Opt., Barrington, IL	6.500								6.500	6.500
Development Upgrade Integrate Sensor	CPFF	Recon Opt., Barrington, IL	4.980								4.980	4.980
Develop advanced focal plane shutter	WR	MIT Lincoln Lab, Bedford MA	0.170								0.170	0.170
Hyperspectral Target Cueing Demo	CPFF	Recon Opt., Barrington, IL	0.656	0.500	06/03						1.156	1.156
EO Framing Camera Upgrades	CPFF	Recon Opt., Barrington, IL	5.903	0.317	10/03						6.220	6.220
Decompression Board Development	CPFF	Space Dyn. Lab. Logan, UT	0.800								0.800	0.800
Real Time Data Fusion Processor	TBD	TBD									0.000	0.000
Flight Test Support	CPFF	Recon Opt., Barrington, IL	0.940								0.940	0.940
Decompression Board Demonstration	CPFF	Space Dyn. Lab. Logan, UT		0.500	03/03							
ARIES Upgrades	CPFF	Space Dyn. Lab. Logan, UT		1.500	03/03							
Subtotal Product Development			54.365	2.817		0.000		0.000			57.182	55.182
Remarks:												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

Exhibit R-3 Project Cost Analysis
(Exhibit R-3, page 17 of 46)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA-7			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop				PROJECT NUMBER AND NAME R2476 Framing Reconnaissance Camera					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Camera test support	C/CPFF	NRL, Wash, DC	0.672							0.000	0.672	0.672
Subtotal T&E			0.672							0.000	0.672	
Remarks:												
Contractor Engineering Support	C/CPFF	Various	4.234								4.234	4.234
Systems Support	WR	NRL, Wash, DC	1.114								1.114	1.114
Subtotal Management			5.348	0.000				0.000			5.348	
Remarks:												
Total Cost			60.385	2.817		0.000		0.000			63.202	
Remarks: This program has no support costs.												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	3.416						
RDT&E Articles Qty								

*The FY2003 includes Congressional adds reflecting Hyperspectral Upgrades to Airborne Cameras (\$3.416 million) which will be executed under R2807 .

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras		
(U) B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	3.416	0.000	0.000
RDT&E Articles Quantity				
Hyperspectral upgrade to airborne cameras.				

R-1 SHOPPING LIST - Item No.

206

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UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras
-------------------------------------------------------------	-----------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

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

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings				
Other Navy/OSD Adjustments				
Reprioritization of requirements				
Congressional increases		3.416		
Subtotal	0.000	3.416	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 206

Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 23 of 46)

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0305207N, DARP, Special Project A/C	27.443	29.335	10.649	10.939	11.410	11.589			11.764	113.129
(U) E. ACQUISITION STRATEGY:										
The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.										

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop			PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Camera test support	C/CPFF	NRL, Wash, DC	0.672	0.208						0.000	0.880	0.880
Subtotal T&E			0.672	0.208						0.000	0.880	
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.672	3.416				0.000		0.000	4.088	
Remarks: This program has no support costs.												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: February 2003						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7										PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems										PROJECT NUMBER AND NAME R2807 Hyperspectral Upgrade to Airborne Cameras												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Program Milestones Milestones																																
Engineering Milestones					Hyperspectral Module				Camera Upgrade																							
Test & Evaluation Milestones Development Test Operational Test																																
Contract Milestones																																

R-1 SHOPPING LIST - Item No. 206

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconnaissance Camera			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	4.977						
RDT&E Articles Qty								

*The FY2003 includes Congressional adds reflecting Electro-Optical Framing Reconnaissance Cameras (\$4.977 million) which will be executed under R9114 .

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconnaissance Camera

(U) B. Accomplishments/Planned Program

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

Electro-Optical Framing Reconnaissance Cameras. Improve the producibility of large format infrared focal plane array detectors.

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

Electro-Optical Framing Reconnaissance Cameras. Develop zoom lens capability.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	2.277	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras. Develop CMOS imager.

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconnaissance Camera

(U) B. Accomplishments/Planned Program

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

Electro-Optical Framing Reconnaissance Cameras. Incorporate LWIR spectrometer into camera.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.600	0.000	0.000
RDT&E Articles Quantity				

Electro-Optical Framing Reconnaissance Cameras. Improved camera for Precision Strike.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconnaissance Camera
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(U) C. PROGRAM CHANGE SUMMARY:

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

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings				
Othre Navy/OSD Adjustments				
Reprioritization of requirements				
Congressional increases		4.977		
Subtotal	0.000	4.977	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R9114 Electro-Optical Framing Reconnaissance Camera				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0305207N, DARP, Special Project A/C	27.443	29.335	10.649	10.939	11.410	11.589			11.764	113.129
(U) E. ACQUISITION STRATEGY:										
The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.										

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE, N / BA-7			0305206N Airborne Reconnaissance Advanced Develop			R9114 Electro-Optical Framing Reconnaissance Camera						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Camera test support	C/CPFF	NRL, Wash, DC	0.000	0.389						0.000	0.389	0.389
Subtotal T&E			0.000	0.389						0.000	0.389	
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.000	4.977				0.000			4.977	
Remarks: This program has no support costs.												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	2.440						
RDT&E Articles Qty								

*The FY2003 includes Congressional adds reflecting NRL Applied Optics Reconnaissance Technology (\$2.440 million) which will be executed under R9114 .

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. Transition of sensors to AF TARS, and Navy TARPS-CD and SHARP programs has been successful. Congress added funds in FY 2001 to (1) develop and Advanced Focal Plane Array for smaller electro-optical framing size, (2) develop and upgrade the Sensor to and 18 inch lens and integrate an existing dual banned sensor into the TARP pod, and (3) to upgrade the Airborne Reconnaissance System Hyperspectral Module.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.790	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology. Advanced camera with long focal length lens.

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

NRL Applied Optics Reconnaissance Technology. Interchangeable EO and IR lenses.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.750	0.000	0.000
RDT&E Articles Quantity				

NRL Applied Optics Reconnaissance Technology. High frame rate camera.

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology
-------------------------------------------------------------	-----------------------------------------------------------------------------	-------------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

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

NRL Applied Optics Reconnaissance Technology. Ball gimbal mount.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems	PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology
-------------------------------------------------------------	-----------------------------------------------------------------------------	-------------------------------------------------------------------------------

(U) C. PROGRAM CHANGE SUMMARY:

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

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings				
Other Navy/OSD Adjustments				
Reprioritization of requirements				
Congressional increases		2.440		
Subtotal	0.000	2.440	0.000	0.000

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0305206N Airborne Reconnaissance Systems			PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology				
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0305207N, DARP, Special Project A/C	27.443	29.335	10.649	10.939	11.410	11.589			11.764	113.129
(U) E. ACQUISITION STRATEGY:										
The program is to develop framing reconnaissance camera technology to support improved capabilities for programs such as SHARP.										

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7			PROGRAM ELEMENT 0305206N Airborne Reconnaissance Advanced Develop			PROJECT NUMBER AND NAME R9115 NRL Applied Optics Reconnaissance Technology						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Camera test support	C/CPFF	NRL, Wash, DC	0.000	0.470						0.000	0.470	0.470
Subtotal T&E			0.000	0.470						0.000	0.470	
Remarks:												
											0.000	0.000
											0.000	0.000
Subtotal Management			0.000	0.000				0.000			0.000	
Remarks:												
Total Cost			0.000	2.440			0.000	0.000			2.440	
Remarks: This program has no support costs.												

R-1 SHOPPING LIST - Item No. 206

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		0305207N Manned Reconnaissance Systems						
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	36.912	22.510	13.717	11.809	12.256	13.527	18.252	18.589
* Z0117 REEF POINT	6.938	8.096	11.890	11.809	12.256	13.527	18.252	18.589
** E2673 F/A-18E/F TACTICAL RECONNAISSANCE (SHARP)	26.020	14.414	1.827					
W9117 ADVANCED MULTIBAND SURVEILLANCE SYSTEMS	3.954							
* Executed at a higher level of classification - no project R2, project unit changed from R0117 to Z0117.								
** The FY 2002 budget reflects an \$6 million Congressional add for SHARP POD development and procurement executed under E2808.								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of a dual-spectral-band reconnaissance pod camera system capable of being deployed on tactical aircraft. The camera will have simultaneous visible and infrared imaging capability and provide digital images in national standard formats. The system will be capable of collecting imagery, recording on-board, and transmitting simultaneously to a ground receiving station. Cameras operating in multiple spectral bands will be introduced as the technology evolves. The target aircraft is the F/A-18E/F. A prototype system was flight demonstrated in June 2001. Provision will be made to accommodate transmission of Synthetic Aperture Radar (SAR) data. The system will operate semi-autonomously from the aircraft maximizing standard interfaces. Emphasis will be placed on using commercially available subsystems and components in an open architecture so that evolutionary designs in cameras, processors, transmitters, and recorders can be introduced seamlessly via competitive procurement procedures. An aggressive development schedule will be embraced driving toward an operational capability by May 2003. The purpose of the aggressive development schedule is to have an operational capability ready to replace the F-14 Tactical Air Reconnaissance Pod System (TARPS) due to retire beginning in 2003.

(U) Details for project Z0117 are held at a higher classification.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems			PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	26.020 [*]	14.414 ^{**}	1.827					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

* The FY 2002 budget reflects a \$6 million Congressional add for SHARP pod development and procurement.

**The FY 2003 budget reflect a \$11.9 million Congressional add for F/A-18D Tactical Reconnaissance Aircraft Solid State Recorder Upgrades.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shared Reconnaissance Pod (SHARP) provides funds for the development of a dual-spectral-band reconnaissance pod camera system capable of being deployed on tactical aircraft. The camera will have simultaneous visible and infrared imaging capability and provide digital images in national standard formats. The system will be capable of collecting imagery, recording on-board, and transmitting simultaneously to a ground receiving station. Cameras operating in multiple spectral bands will be introduced as the technology evolves. The target aircraft is the F/A-18E/F. A prototype system was flight demonstrated in June 2001. Provision will be made to accommodate transmission of Synthetic Aperture Radar (SAR) data. The system will operate semi-autonomously from the aircraft maximizing standard interfaces. Emphasis will be placed on using commercially available subsystems and components in an open architecture so that evolutionary designs in cameras, processors, transmitters, and recorders can be introduced seamlessly via competitive procurement procedures. An aggressive development schedule will be embraced driving toward an operational capability by May 2003.

In FY03 budget Congress appropriated \$11.9M for development and integration of solid state records in Advance Tactical Airborne Reconnaissance System (ATARS).

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)
-------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.184	0.231	0.240	
RDT&E Articles Quantity				

Continue program management to coordinate development activities during the EMD phase of the program.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.280			
RDT&E Articles Quantity				

Complete systems engineering efforts to develop EMD pods, design/develop the (software/hardware) interface to the F/A-18 E/F aircraft. Coordinate with other subsystems (F/A-18 EW, Weapons, and Radar) to ensure system compatibility. Coordinate with ground station activities to ensure compatibility.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.200			
RDT&E Articles Quantity				

Procure three additional sensors for EMD phase.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)
-------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	10.801			
RDT&E Articles Quantity	1			

Procure an EMD pod.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.470			
RDT&E Articles Quantity				

Complete integration and test of the SHARP's subsystems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.103			
RDT&E Articles Quantity				

Complete coding for RMS to support integration of the EMD phase. Continued BIT software development and testing, and begin integration to the F/A-18E/F SCS.

R-1 SHOPPING LIST - Item No. 207

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)
-------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.982			
RDT&E Articles Quantity				

Complete integration and test of the SHARP EDM pod. Continue performing initial E3 testing, Carrier Suitability testing, and Initial Operation Testing to support Low Rate Initial Production.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.240		
RDT&E Articles Quantity				

Continue testing and integration of SHARP into the F/A-18E/F SCS.

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

Perform Operation Testing to support Full Rate Production.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)
-------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.436	
RDT&E Articles Quantity				

Software development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.151	
RDT&E Articles Quantity				

Complete ancillary hardware development/EMD upgrades.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		11.543		
RDT&E Articles Quantity				

Develop and intergrate solid state state recorder in ATARS.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)																																																								
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding-left: 20px;">(U) Funding:</th> <th style="text-align: right; padding-right: 20px;">FY 2002</th> <th style="text-align: right; padding-right: 20px;">FY 2003</th> <th style="text-align: right; padding-right: 20px;">FY 2004</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">Previous President's Budget:</td> <td style="text-align: right;">27.180</td> <td style="text-align: right;">2.871</td> <td style="text-align: right;">1.882</td> </tr> <tr> <td style="padding-left: 20px;">Current BES/President's Budget</td> <td style="text-align: right;">26.020</td> <td style="text-align: right;">14.414</td> <td style="text-align: right;">1.827</td> </tr> <tr> <td style="padding-left: 20px;">Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-1.160</td> <td style="text-align: right; border-top: 1px solid black;">11.543</td> <td style="text-align: right; border-top: 1px solid black;">-0.055</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 40px;">Congressional program reductions</td> <td></td> <td style="text-align: right;">-0.086</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional undistributed reductions</td> <td></td> <td style="text-align: right;">-0.047</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;">SBIR/STTR Transfer</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Economic Assumptions</td> <td style="text-align: right;">-0.075</td> <td style="text-align: right;">-0.271</td> <td style="text-align: right;">-0.055</td> </tr> <tr> <td style="padding-left: 40px;">Reprogrammings</td> <td style="text-align: right;">-1.038</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Other Navy/OSD Adjustments</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional increases</td> <td></td> <td style="text-align: right;">11.900</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-1.160</td> <td style="text-align: right; border-top: 1px solid black;">11.543</td> <td style="text-align: right; border-top: 1px solid black;">-0.055</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule: Not Applicable.</p> <p style="margin-top: 20px;">(U) Technical: Not Applicable.</p>			(U) Funding:	FY 2002	FY 2003	FY 2004	Previous President's Budget:	27.180	2.871	1.882	Current BES/President's Budget	26.020	14.414	1.827	Total Adjustments	-1.160	11.543	-0.055	Summary of Adjustments				Congressional program reductions		-0.086		Congressional undistributed reductions		-0.047		Congressional rescissions				SBIR/STTR Transfer				Economic Assumptions	-0.075	-0.271	-0.055	Reprogrammings	-1.038			Other Navy/OSD Adjustments				Congressional increases		11.900		Subtotal	-1.160	11.543	-0.055
(U) Funding:	FY 2002	FY 2003	FY 2004																																																							
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R-1 SHOPPING LIST - Item No. 207

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)
-------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
F/A-18E/FG (FIGHTER) HORNET (MYP) P1 Line Item 2	20.1	66.91	67.3	66.8						221.11

(U) E. ACQUISITION STRATEGY:

1. The pod was procured with an order on a Cost Plus Fixed-Fee (CPFF)/IDIQ contract to Raytheon, Indianapolis.
2. The contract for the sensor, a Firm Fixed Price (FFP) option, and the engineering ILS support, a Cost Plus Incentive Fee (CPIF) option, are/will be procured competitively.
3. ATARS system was procured sole source through BAE.

R-1 SHOPPING LIST - Item No. 207

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			Program Element (PE) No. and Name			0305207N Manned Reconnaissance Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	17.355								17.355	
Operational Test & Evaluation	WR	OPTEVFOR, Norfolk VA	0.033	0.400	11/02						0.433	
Subtotal T&E			17.388	0.400							17.788	
Remarks:												
Program Management Support	VARIOUS	VARIOUS	1.829								1.829	
Travel				0.031	10/02	0.040	10/03				0.071	
Subtotal Management			1.829	0.031		0.040					1.900	
Remarks:												
Total Cost			140.236	14.414		1.827					156.477	
Remarks:												

R-1 SHOPPING LIST - Item No. 207

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems				PROJECT NUMBER AND NAME E2673 FA-18E/F Tactical Reconnaissance (SHARP)			
Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Prototype Phase	1Q-4Q	1Q-4Q	1Q-4Q					
Milestone II (MSII)	3Q							
Preliminary Design Review (PDR)		1Q						
System Development	1Q-4Q	1Q-4Q	1Q-4Q					
Critical Design Review (CDR)			4Q					
Developmental Testing (DT-IIA)		1Q-4Q	1Q-4Q	1Q-4Q				
Eng Dev Model (EDM) SHARP Delivery			1Q-2Q					
Software Build Readiness Review (BRR)				4Q				
Software Delivery 1XXSW				4Q				
EDM SHARP Delivery				3Q-4Q	1Q-2Q			
Milestone III						2Q		
Low-Rate Initial Production I (LRIP I) Decision				1Q				
Software Delivery 2XXSW					1Q			
Developmental Testing (DT-IIB)				3Q-4Q	1Q-3Q			
Low-Rate Initial Production II Decision					1Q			
Operational Testing (OT-IIB)					4Q	1Q-2Q		
Functional Configuration Audit (FCA)					2Q			
Low-Rate Initial Production I Delivery					2Q			
Technical Evaluation (TECHEVAL)					3Q-4Q			
Physical Configuration Audit					3Q			
Operational Evaluation (OT-IIC) (OPEVAL)					4Q	1Q-2Q		
Low-Rate Initial Production II Delivery						2Q-3Q		
EOC					3Q			
IOC							3Q	
Full Rate Production (FRP) Decision						2Q		
Full Rate Production Start						2Q		
First Deployment					3Q			

R-1 SHOPPING LIST - Item No. 207

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 13 of 15)

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305208N Distributed Common Ground Systems (DCGS)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	7.093	8.518	4.421	3.647	3.704	3.770	3.851	3.922
A2174 CIGSS (JSIPS-N)	4.326	4.322	4.421	3.647	3.704	3.770	3.851	3.922
A9118 Prec Targeting Sys Modernization	2.767							
A9157 Cross Program DCGS-N Integration		2.927						
A9158 Converged Architecture for NFN		1.269						

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

Includes Congressional adds: \$2.8 million in FY 2002 for Precision Targeting System Modernization, less Congressional undistributed reductions; and \$1.3 million in FY 2003 for Converged Architecture for Naval Fires Network, less Congressional undistributed reductions.

The Joint Service Imagery Processing System-Navy (JSIPS-N) is the Navy's portion of the Distributed Common Ground System (DCGS) which is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS is further subdivided into systems which process, exploit, and disseminate Measurements Analysis and Signatures Intelligence (MASINT) data, Signals Intelligence (SIGINT) data, Multi-intelligence Reconnaissance data, and imagery data. Cooperative imagery processing systems are collectively identified under the general heading of Common Imagery Ground/Surface Systems (CIGSS). JSIPS-N is the Navy CIGSS component. JSIPS-N has the capability to receive, process, exploit, store and disseminate imagery, imagery-derived products and imagery intelligence (IMINT) reports based on multiple inputs from multiple sources.

The primary mission of JSIPS-N is to assist strike planners, tactical aviators, and Marine Corps amphibious planners in the delivery of precision ordnance (including Tomahawk Cruise Missiles) on target. JSIPS-N includes three major components, the Softcopy Exploitation Segment (SES) consisting of the Digital Imagery Workstation Suite Afloat (DIWSA) and the Precision Targeting Workstation (PTW), the National Input Segment (NIS), and the Tactical Input Segment (TIS). JSIPS-N is being installed onboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD), select fleet flagships (AGF/LCC) and shore sites.

Secondary missions of the systems are to provide near-real-time imagery and support to fleet intelligence assets, Special Operations Forces, and to support primary exploitation and dissemination of tactical organic and theater IMINT products.

Cross-system DCGS-N integration in support of Time-Sensitive Targeting has been incorporated into existing group modification (GRP MOD) actions comprising the JSIPS-N life cycle modernization plan.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.326	4.322	4.421	3.647	3.704	3.770	3.851	3.922
RDT&E Articles Qty								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Service Imagery Processing System – Navy (JSIPS-N) is the Navy's portion of the Distributed Common Ground

System (DCGS) which is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS is further subdivided into systems which process, exploit, and disseminate Measurements Analysis and Signatures Intelligence (MASINT) data, Signals Intelligence (SIGINT) data, Multi-Intelligence Reconnaissance data, and Imagery data. Cooperative imagery processing systems are collectively identified under the general heading of Common Imagery Ground/Surface Systems (CIGSS). JSIPS-N is the Navy CIGSS component.

JSIPS-N has the capability to receive, process, exploit, store and disseminate imagery, imagery-derived products and imagery intelligence (IMINT) reports based on multiple inputs from multiple sources. The primary mission of JSIPS-N is to assist strike planners, tactical aviators, and Marine Corps amphibious planners in the delivery of precision ordnance (including Tomahawk Cruise Missiles) on target.

JSIPS-N includes three major components, the Softcopy Exploitation Segment (SES) consisting of the Digital Imagery Workstation Suite Afloat (DIWSA) and the Precision Targeting Workstation (PTW), the National Input Segment (NIS), and the Tactical Input Segment (TIS). JSIPS-N is being installed onboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD), select fleet flagships (AGF/LCC) and shore sites.

Secondary missions of the systems are to provide near-real-time imagery and support to fleet intelligence assets, Special Operations Forces, and to support primary exploitation and dissemination of tactical organic and theater IMINT products.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
-------------------------------------------	----------------------------

APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)
-------------------------------------------------------------	--------------------------------------------------------------------------------------	--------------------------------------------------

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.726	4.008	4.106	3.371
RDT&E Articles Quantity				

Continue JSIPS-N systems engineering including Precision Targeting Workstation (PTW), Precision Guided Munitions (PGM), 'classified' communications, JSIPS-N concentrator Architecture (JCA), and Imagery Exploitation Software Segment (IESS) and accelerate the development of JSIPS-N components of Navy C4I dissemination architectures.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	0.214	0.215	0.176
RDT&E Articles Quantity				

Continued Shared Reconnaissance Pod (SHARP)-tactical Input Segment (TIS) systems engineering and integration including the incorporation of appropriate Navy Input Segment (NAVIS) functions.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)		
B. Accomplishments/Planned Program (Cont.)				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.100	0.100	0.100	0.100
RDT&E Articles Quantity				
Continue Test and Evaluation (T&E) of ongoing system upgrades and modifications.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		4.352	4.482	4.532	3.733
Current BES/President's Budget		4.326	4.322	4.421	3.647
Total Adjustments		-0.026	-0.160	-0.111	-0.086
Summary of Adjustments					
Congressional program reductions		-0.009			
Congressional undistributed reductions			-0.079		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions		-0.012	-0.081	-0.102	-0.079
Reprogrammings					
Other Navy/OSD Adjustments		-0.005		-0.009	-0.007
Congressional increases					
Subtotal		-0.026	-0.160	-0.111	-0.086
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 208

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	56.894	51.330	60.600	53.302	72.941	74.339	60.534	61.628	Continuing	Continuing
E. ACQUISITION STRATEGY: *										
<p>The production system consists of three elements, the Softcopy Exploitation System (SES) consisting of the Digital Imagery Workstation Suite Afloat (DIWSA) and the Precision Targeting Workstation (PTW), the National Input Segment (NIS) and Tactical Input Segment (TIS). The DIWSA is already in full rate co-production with other programs, most notably Tomahawk's mission planning systems. The NIS is also in full rate production and supplied as Government Furnished Equipment (GFE) by the National Imagery and Mapping Agency (NIMA SDD). The TIS 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. The system integrator for the Navy system is the Space and Naval Warfare Systems Command.</p>										
F. MAJOR PERFORMERS: **										
<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. 208

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305208N Distributed Common Ground Systems (DCGS)			A2174 CIGSS (JSIPS-N)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support												
Software Development	MIPR	Various	18.502	4.222	11/02	4.321	11/03	3.547	11/04	Continuing	Continuing	
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			18.502	4.222		4.321		3.547		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305208N Distributed Common Ground Systems (DCGS)			A2174 CIGSS (JSIPS-N)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	COMOPTVFOR, VA	0.375	0.100	06/03	0.100	06/04	0.100	06/05	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.375	0.100		0.100		0.100		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			18.877	4.322		4.421		3.647		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 208

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7												PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)								PROJECT NUMBER AND NAME A2174 CIGSS (JSIPS-N)												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
DIWSA/PTW	DIWSA/PTW Transition & Tech-Refresh																															
NIS-JCA	JCA Transition & Tech-Refresh																															
TIS	Block 2 ECP				Block 3 ECP				Block 4 ECP				Block 5 ECP				Block 6 ECP				Block 7 ECP				Block 8 ECP							
	FRP												Tech-Refresh																			
Block 2 OA				Block 3 OA				Block 4 OA				Block 5 OA				Block 6 OA				Block 7 OA												

R-1 SHOPPING LIST - Item No. 208

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A9118 Precision Targeting System Modernization			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	2.767							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) The Precision Targeting Workstation (PTW) and Digital Imagery Workstation Suite Afloat (DIWSA) make up the Softcopy Exploitation Segment (SES) of JSIPS-N which are used for precision mensuration and exploitation. SES is one of the three major components of JSIPS-N. The other two are the National Input Segment (NIS), used for receipt of national imagery and dissemination of secondary imagery products, and the Tactical input Segment (TIS) used with the Common Imagery jProcessor (CIP) for receipt and processing of tactical/theater imagery.

(U) DIWSA is also utilized by the Afloat Planning Systems (APS), the afloat version of the Tomahawk Theater Mission Planning Center (TMPC). The purpose of APS DIWS is to generate Tomahawk Land Attack Mission (TLAM) specific formatted terminal area navigation products from imagery and support data. DIWS is also used afloat for Precision Guided Munition (PGM) coordinates in support of JSIPS-N.

(U) The FY 2002 funding of \$2.8, less Congressional undistributed reductions, was a Congressional add to accelerate the transition of DIWSA and PTW from TAC-4 type systems to PC-based configuration. The end item is the PTW 5.0 build which combines the functionality of both DIWS and PTW. The PC migration effort started in FY01 under the Tomahawk program and has an IOC of June 2005. This funding accelerates the IOC by two years, June 2003.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9118 Precision Targeting System Modernization

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.767			
RDT&E Articles Quantity				

Transitioned DIWS to PC-Based configuration.

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

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

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9118 Precision Targeting System Modernization			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000			
Current BES/President's Budget		2.775			
Total Adjustments		2.775	0.000	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions		-0.033			
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions					
Reprogrammings					
Congressional increases		2.800			
Subtotal		2.767	0.000	0.000	0.000
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 208

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9118 Precision Targeting System Modernization
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	56.894	51.330	60.600	53.302	72.941	74.339	60.534	61.628	Continuing	Continuing

E. ACQUISITION STRATEGY:

The acquisition strategy for this project is to support the related TMPC acquisition strategy for the completion the PC- based migration effort.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A9157 Cross Program DCGS-N Integration			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		2.927						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) Distributed Common Ground System-Navy (DCGS-N) Cross-System Integration implements the fusion of national and joint-service intelligence data in support of Joint Task Force (JTF)-level and component campaign planning, Time-Sensitive Targeting (TST), combat assessment, and combat execution. It applies interoperability standards across common system components within an open architecture environment to enable collaborative Tasking, Processing, Exploitation, and Dissemination (TPED) Navy as well as other service DCGS systems. This capability facilitates dynamic cross-cueing of collection sensors and timely fusion of data collected by networked sensors including spaceborne, airborne, and surface Intelligence, Surveillance, and Reconnaissance (ISR) assets

(U) FY03 funding was a Congressional add for Cross-system DCGS-N integration in support of TST which has been incorporated into existing system enhancement actions comprising the JSIPS-N life cycle modernization plan.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9157 Cross Program DCGS-N Integration

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.927		
RDT&E Articles Quantity				

Cross-system DCGS-N integration in support of Time Sensitive Targeting which has been incorporated into existing system enhancement actions comprising the JSIPS-N life cycle modernization plan.

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

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9157 Cross Program DCGS-N Integration			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:			0.000		
Current BES/President's Budget			2.927		
Total Adjustments		0.000	2.927	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.018		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.055		
Reprogrammings					
Other Navy/OSD Adjustments			3.000		
Subtotal		0.000	2.927	0.000	0.000
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 208

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A9157 Cross Program DCGS-N Integration				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	56.894	51.330	60.600	53.302	72.941	74.339	60.534	61.628	Continuing	Continuing
E. ACQUISITION STRATEGY: *										
F. MAJOR PERFORMERS: **										
<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. 208

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)			PROJECT NUMBER AND NAME A9158 Converged Architecture for NFN			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		1.269						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) Development of JSIPS-N open/converged architecture for Naval Fires Network (NFN) to allow for multiple service participation. The Congressional plus up of \$1.269M in FY03 has been provided for development of an open/converged architecture, modernization and enhancement of precision strike capabilities for NFN.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9158 Converged Architecture for NFN

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.269		
RDT&E Articles Quantity				

Development of an open architecture, modernization and enhancement of precision strike capabilities for NFN.

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

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9158 Converged Architecture for NFN			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:			0.000		
Current BES/President's Budget			1.269		
Total Adjustments		0.000	1.269	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.007		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.024		
Reprogrammings					
Other Navy/OSD Adjustments			1.300		
Subtotal		0.000	1.269	0.000	0.000
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 208

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305208N Distributed Common Ground Systems (DCGS)	PROJECT NUMBER AND NAME A9158 Converged Architecture for NFN
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D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN, BLI 291400 Common Imagery Ground Support/Systems (CIGSS)	56.894	51.940	60.600	53.302	72.941	74.339	60.534	61.628	Continuing	Continuing

E. ACQUISITION STRATEGY: *

F. MAJOR PERFORMERS: **

* Not required for Budget Activities 1,2,3, and 6
 ** Required for DON and OSD submit only.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						R-1 ITEM NOMENCLATURE PE 0305927N Navy Space Surveillance System (NSSS)					
BA-7											
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	1.411	2.906	9.311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.628
Project X0125 Navy Space Surveillance System	1.411	1.226	9.311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.948
Project X9119 SPAWAR Covert Communication and Information Transfer	0.000	1.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p>(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Space Surveillance System (FENCE) is an integral component of the U.S. Space Command Surveillance Network. This system provides continuous surveillance and unalerted detection of space objects crossing the continental United States. The FENCE is also the only space surveillance system that provides satellite vulnerability and space control data to the fleet. It is a multistatic continuous wave radar fence consisting of three transmitter sites, six receiver sites, and a computation/communication center. The Alternate Space Control role assigned by U.S. Commander in Chief Space (USCINCSpace) requires that the Naval Network and Space Command (NNSOC), formerly Naval Space Command, maintain functional equivalence with the USCINCSpace Space Control Center and receive, process and distribute data from 26 surveillance sites.</p> <p>The Fence program transfers to US Air Force cognizance effective 2004. (X0125)</p> <p>Congressional Plus up - SPAWAR Covert Communication and Information Transfer (X9119).</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Operational Systems Development because it encompasses engineering and manufacturing development for upgrading existing operational systems.</p>											

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 16)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)				PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	1.411	1.226	9.311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.948
RDT&E Articles Qty											0

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project supports the Naval Space Surveillance System (FENCE), an integral component of the J.S. Space Command Space Surveillance Network. This system provides continuous surveillance and unalerted detection of space objects crossing the continental United States. The FENCE is also the only space surveillance system that provides satellite vulnerability and space control data to the fleet. It is a multistatic continuous wave radar fence consisting of three transmitter sites, six receiver sites, and a computation/communication center. The Alternate Space Control role assigned by U.S. Commander in Chief Space (USCINCSpace) requires that the Naval Network and Space Command (NNSOC), formerly Naval Space Command, maintain functional equivalence with the USCINCSpace Space Control Center and receive, process and distribute data from 26 surveillance sites. The increase in funding from FY01-FY03 supports this role and the research, design and development of high-powered transmitters and other component parts for the next generation FENCE System.

The Fence program transfers to US Air Force cognizance effective 2004.

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)	PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.226	9.311	0.000	0.000
RDT&E Articles Quantity	0	0	0	0

(U) FY 2002 ACCOMPLISHMENTS: (\$1.226)
 (\$.191) Conducted environmental, safety and hazmat studies in support of frequency selection and allocation.
 (\$1.035) Developed preliminary architecture and design for RF sensor, communications, processing, modeling and simulation.

(U) FY 2003 PLAN: (\$9.311)
 (\$.487) Complete development of detailed architecture and design for RF sensors, communications, processing, modeling and simulation.
 (\$8.824) Develop RF sensor in order to provide a system demonstration prior to Critical Design Review (CDR).

(U) FY 2004 PLAN: Program transferred to U.S. Air Force.

(U) FY 2005 PLAN: N/A

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)	PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)			
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget :		4.237	9.548	2.285	2.278
Current BES/President's Budget		1.226	9.311	0.000	0.000
Total Adjustments		-3.011	-0.237	-2.285	-2.278
Summary of Adjustments					
Congressional Reduction - Program Growth		-1.000			
Section 8123: Management Reform Initiative		-0.029			
Program transfer to Air Force				-2.285	-2.278
Section 313: PL107-206, Rev Econ Assumption		-0.009			
Link Plumeria		-1.200			
Section 8100: Business Process Reform			-0.038		
Section 8135: Economic Assumptions		-0.009	-0.054		
Section 8109: IT Cost Growth			-0.018		
Section 8029: PL107-248 FY03 FFRDC Reduction			-0.006		
Miscellaneous Navy Adjustments		-0.764			
Miscellaneous Department Adjustments			-0.121		
Subtotal		-3.011	-0.237	-2.285	-2.278
(U) Schedule:					
NOT APPLICABLE					
(U) Technical:					
NOT APPLICABLE					

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)	PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)
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(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) OPN Line #2901	3.748	2.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing

(U) E. ACQUISITION STRATEGY:

NOT APPLICABLE

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0305927N Navy Space Surveillance System (NSSS)			X0125 Navy Space Surveillance System (NSSS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	TBD	1.200	7.500	05/03						8.700	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering			1.426	1.800							3.226	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			2.626	9.300		0.000		0.000		0.000	11.926	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0305927N Navy Space Surveillance System (NSSS)			X0125 Navy Space Surveillance System (NSSS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	C/CPAF	TBD		0.011							0.011	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.011		0.000		0.000		0.000	0.011	
Remarks:												
Total Cost			2.626	9.311		0.000		0.000		0.000	11.937	
Remarks:												

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 16)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7								PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)								PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones	MS B △								MS C △				First Deploy ☆				IOC ☆															
Prototype Phase																																
Radar System Development					PDR △				CDR △																							
Test & Evaluation Milestones									DT △																							
Development Test																																
Operational Test																	TECHEVAL & OPEVAL □															
Procurements																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 209

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

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT PE 0305927N Navy Space Surveillance System (NSSS)			PROJECT NUMBER AND NAME X0125 Navy Space Surveillance System (NSSS)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B (MSB)	1Q							
Contract Preparation	1Q							
Preliminary Design Review (PDR)		2Q						
System Development		1Q-4Q						
Critical Design Review (CDR)								
Preproduction Readiness Review (PRR)								
Milestone C (MS C)								
Functional Configuration Audit (FCA)								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OPEVAL)								
IOC								
First Deployment								

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)				PROJECT NUMBER AND NAME X9119 SPAWAR Covert Communication and Information Transfer					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	1.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680
RDT&E Articles Qty											0

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

Congressional Plus up - SPAWAR Covert Communication and Information Transfer (X9119).

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 10 of 16)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)	PROJECT NUMBER AND NAME X9119 SPAWAR Covert Communication and Information Transfer

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
CCIT	1.680			
RDT&E Articles Quantity				

FY02: SPAWAR Covert Communication and Information Transfer

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																																																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)	PROJECT NUMBER AND NAME X9119 SPAWAR Covert Communication and Information Transfer																																																																																
<p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 60%;"></th> <th style="text-align: right; width: 10%;">FY 2002</th> <th style="text-align: right; width: 10%;">FY 2003</th> <th style="text-align: right; width: 10%;">FY 2004</th> <th style="text-align: right; width: 10%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td colspan="5">(U) Funding:</td> </tr> <tr> <td>President's Budget:</td> <td style="text-align: right;">0.000</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">1.680</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">1.680</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 colspan="5"> Summary of Adjustments</td> </tr> <tr> <td> Cong. Plus-up - SPAWAR Covert Comm & Info Transfer</td> <td style="text-align: right;">1.700</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 8123: Mgmt Reform Initiative</td> <td style="text-align: right;">-0.015</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 313: PL 107-206:Revised Econ Assumptions</td> <td style="text-align: right;">-0.004</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Section 8135: Economic Assumptions</td> <td style="text-align: right;">-0.005</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Miscellaneous Department Adjustments</td> <td style="text-align: right;">0.004</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">1.680</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 colspan="5"> (U) Schedule:</td> </tr> <tr> <td colspan="5">Not Applicable</td> </tr> <tr> <td colspan="5"> (U) Technical:</td> </tr> <tr> <td colspan="5">Not Applicable</td> </tr> </tbody> </table>				FY 2002	FY 2003	FY 2004	FY 2005	(U) Funding:					President's Budget:	0.000				Current BES/President's Budget	1.680				Total Adjustments	1.680	0.000	0.000	0.000	 Summary of Adjustments					Cong. Plus-up - SPAWAR Covert Comm & Info Transfer	1.700				Section 8123: Mgmt Reform Initiative	-0.015				Section 313: PL 107-206:Revised Econ Assumptions	-0.004				Section 8135: Economic Assumptions	-0.005				Miscellaneous Department Adjustments	0.004				Subtotal	1.680	0.000	0.000	0.000	 (U) Schedule:					Not Applicable					 (U) Technical:					Not Applicable				
	FY 2002	FY 2003	FY 2004	FY 2005																																																																														
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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: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME PE 0305927N Navy Space Surveillance System (NSSS)			PROJECT NUMBER AND NAME X9119 SPAWAR Covert Communication and Information Transfer					
(U) D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not applicable										
(U) E. ACQUISITION STRATEGY:										
Not Applicable										

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			PE 0305927N Navy Space Surveillance System (NSSS)			X9119 SPAWAR Covert Communication and Information Transfer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			1.680	0.000		0.000		0.000		0.000	1.680	
Remarks:												

R-1 SHOPPING LIST - Item No. 209

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 16)

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0308601N
PROGRAM ELEMENT TITLE: Modeling and Simulation Support

COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R2222 Modeling & Simulation	9,411	7,562	7,044	8,248	8,741	10,797	10,988	11,187
R2810 Enhanced Modeling & Simulation Initiatives	4,734	2,050						
Total	14,145	9,612	7,044	8,248	8,741	10,797	10,988	11,187

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Funds the efforts of the Navy Modeling and Simulation (M&S) Management Office. Supports technical and management initiatives directed by Congress, Department of Defense (DoD) and Secretary of the Navy (SECNAV) with the aim of bringing organization and focus to the development and use of M&S tools throughout Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S; represents Navy interests in Joint/other Agencies. Funds efforts to define and coordinate execution of a Navy M&S program 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, to research and define the feasibility and applicability of proposed standards to Navy and to investigate Service-unique requirements for standards or guidance; (2) Products and Services, to develop the policy, standards, technologies, and common tools and services necessary to guide more efficient development and use of M&S across Navy; this includes development and management of the Navy Modeling and Simulation Information System (NMSIS), Navy counterpart to the DOD M&S Resource Repository, to provide a central M&S information resource to reduce stove-piped development, promote tool reuse and support informed M&S investment decisions; (3) M&S Quality Assurance Program, to establish and manage a disciplined process of model verification, validation and accreditation (VV&A) required by current directives; (4) Simulation Experiments, to test distributive simulation technology in fleet exercises, experiments, and pilot efforts which demonstrate and examine the value and limitations of proposed standards (such as High Level Architecture (HLA) and Simulation Based Acquisition (SBA) to mission and program requirements.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0308601N
PROGRAM ELEMENT TITLE: Modeling and Simulation Support

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget Submission:	12,566	7,783	9,256	10,132
Adjustments from FY 2003 President's Budget:				
Congressional Plus-Up		2,100		
SBIR Reduction	-209			
Efficiencies at NWCF Activities			-59	-73
Cong Rescissions/Adjustments/Undistributed Reductions	-60	-147		
NWCF Rate Adjustments			-21	4
Execution Adjustments	1,848			
Pay Raise/Inflation Adjustments		-124	-161	-178
Program Adjustments			-1,971	-1,637
FY 2004/2005 President's Budget Submission:	14,145	9,612	7,044	8,248

PROGRAM CHANGE SUMMARY EXPLANATION:

Schedule: Not applicable
Technical: Not applicable

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
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R2222 Modeling & Simulation Support	9,411	7,562	7,044	8,248	8,741	10,797	10,988	11,187
-------------------------------------	-------	-------	-------	-------	-------	--------	--------	--------

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project specifically provides critical coordination of Navy M&S efforts, integrates individual programs into a coherent whole, promotes reuse of resources, and aligns Navy efforts with Joint programs. Develops and maintains a comprehensive repository of models, simulations and authoritative data to support broad-based Navy requirements. Promotes reusability through the Quality Assurance process for models, simulations and data enhanced Interoperability by coordinating and reviewing Navy's transition to Department of Defense (DoD) mandated High Level Architecture (HLA) for distributed simulations. Participates in fleet exercise experiments, distributive simulations and demonstrations (such as Fleet Battle Experiments-I, Virtual at Sea Training (VAST), and Virtual Missile Range (VMR)).

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY 05
Engineering Studies and Analysis	1,600	1,285	1,197	1,402

Conduct engineering studies and analyses aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy, and at investigating Service-unique requirements for standards or guidance. Individual efforts will focus on developing or evaluating approaches to optimize training, assessments and acquisition functional/mission objectives through more efficient development and use of Modeling and Simulation (M&S). Develop 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 Navy. Provide a M&S degree program through the Naval Postgraduate School, Modeling Virtual Environments and Simulation (MOVES) curriculum.

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

FY 2002 ACCOMPLISHMENTS:

- Continued to develop and implement the Navy strategy for the transition of Navy M&S to the Office of Secretary of Defense (OSD) mandated M&S interoperability standard, High Level Architecture (HLA). Led Navy HLA implementation planning, reported Navy compliance to Department of Defense (DoD), and participated in the DoD HLA transition working group.
- Prepared analyses for Navy leadership and other intra and inter-Service forums on the issues and technical implications of Navy M&S compliance with HLA.
- Continued to develop attributes for designing modeling standards of communication networks and information systems. This was done in collaboration with the Joint Staff (JS) Networkcentric Warfare System (NETWARS) standards working group.
- Performed analysis of current operational communications infrastructure and derived a method to extract, process and archive information to support operational analysis capabilities through modeling and simulation.
- Initiated studies to identify building block functions required within Defense Information Infrastructure (DII) Common Operating Environment (COE) based Command, Control Communications, Computer, and Intelligence (C4I) systems to support simulation development. This will provide the capability to link Global Command and Control Systems (GCCS) operational functions with simulations.
- Continued to develop and implement a roadmap for migrating existing stand alone training modeling capability into a more integrated, interoperable core suite of capability tailored to the Navy training requirements.
- Continued establishment of a Modeling and Simulation degree program at the Naval Postgraduate School, MOVES curriculum.

FY 2003 PLANS:

- Demonstrate the capability of collecting network data for local and wide area networks at Navy Computer Telecommunications Area Masters Station (NCTAMS) Wahiawa.
- Perform communication burden analysis at a Joint Task Force (JTF)
- Provide capabilities to optimize deployed communication plans
- Determine impact of new technology on Battle Group operation.
- Develop a center for the Study of Potential Outcomes that leverages the expertise and technology developed by faculty of the MOVES Institute at the Naval Postgraduate School.
- Provide interoperability links between C4I systems and internal simulations as the means to integrate existing DII COE services and applications into simulations.

R-1 Line Item 210

Page 4 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

FY 2004 PLANS:

- Develop a prototype network information assurance (IA) assessment tool to support evaluation of network performance (throughput, delay, network overhead, packet loss and related network Quality of Service metrics), the effects of countermeasures, IA security policies and to identify potential network vulnerabilities.
- The MOVES Institute will work in tandem with the MOVES degree program to provide military relevant thesis topics for research.
- Design additional common simulation "building-block" functions required within DII COE based C4I systems to support simulation development.
- Demonstrate the Embedded Simulation Infrastructure requirements and capability to develop robust simulations within the DII COE and the Global Command and Control System Maritime (GCCS/M).

FY 2005 PLANS:

- Segment the Embedded Simulation Infrastructure and the two Mission Applications and prepare the documentation for test and release in GCCS and GCCS/M.
- Continue to develop a set of standards for communications modeling & simulations for the US Navy.
- The MOVES Institute will work in tandem with the MOVES degree program to provide military relevant thesis topics for research.

	FY 02	FY 03	FY 04	FY 05
Products and Services	3,200	2,571	2,395	2,804

Continue development of common services, tools, and databases. Develop and enhance the Navy Modeling and Simulations Information System (NMSIS), through an evolutionary process, integrating standards, standard models, standard data and connectivity to support all Naval assessments, training, acquisition and operational communities. Manage and maintain the NMSIS, as a central modeling and simulation (M&S) information resource to reduce stove-piped development, promote standardization and reuse and support informed M&S investment decision making across Navy. Provide the necessary planning and coordination of M&S efforts across the Navy M&S Functional Areas, other Services, Office of Secretary of Defense (OSD), Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. Provide annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy.

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

FY 2002 ACCOMPLISHMENTS:

- Developed and provided an operational implementation of the web-based NMSIS, the Naval component of the Department of Defense (DoD) M&S resource repository (part of the DoD M&S Framework).
- Updated and provided user assistance and support on the Naval M&S Catalog.
- Supported planning and technical coordination of efforts across Navy M&S Functional Areas, other services, OSD, Joint Staff, and other agencies to develop policies and procedures for M&S standardization.
- Coordinated and chaired Navy's M&S Working Group and Navy Flag M&S Steering Group; participated in the Defense M&S Office's M&S working group and the DoD M&S Executive Council, including separate forums for training, assessments & acquisition; and coordination of technical reviews of joint programs and initiatives Joint Simulation System (JSIMS), Joint Warfare Systems (JWARS), Joint Modeling and Simulation System (JMASS) and Networkcentric Warfare System (NETWARS).
- Participated in select OSD and industry sponsored symposia.
- Continued implementation of a Navy M&S Standards Steering Group and a series of Technical Interchange Meetings for the M&S community.

FY 2003 PLANS:

- Staff for signature an updated Navy Modeling and Simulation Master Plan.
- Promote and enhance the state-of-practice and technology within the Navy M&S community.
- Organize and facilitate a series of 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. This will occur quarterly as part of policy.
- Provide, via NMSIS, a centralized, single M&S website for M&S users, managers, working groups, and developers to learn about and gain access to existing M&S resources, information and events. It also functions as the Navy's Modeling and Simulation Resource Repository (MSRR) in accordance with the DoD Directive 5000.59, SECNAVINST 5200.38, and OPNAVINST 5200.34.
- Assist in developing Navy's response to new requirements and policy governing High Level Architecture (HLA) compliance.
- Continue to foster and develop the Navy M&S Standards Process that draws M&S experts from the acquisition, training, operational communities, and industry.

FY 2004 PLANS:

R-1 Line Item 210
Page 6 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

- Implement the requirements to perform as the Functional Data Manager for M&S as submitted by Department of Navy (DoN) Chief Information Office (CIO) and defined by SECNAVINST 5000.36.
- Promote and enhance the state-of-practice and technology within the Navy M&S community.
- Continue the development, services, and use of NMSIS until the DoD DIR, SECNAVINST, and OPNAVINST have been rescinded.
- Organize and facilitate a series of 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. This will occur quarterly as part of policy.
- Continue to foster and develop the Navy M&S Standards Process that draws M&S experts from the acquisition, training, operational communities, and industry.

FY 2005 PLANS:

- Promote and enhance the state-of-practice and technology within the Navy M&S community.
- Continue the development, services, and use of NMSIS until the DoD Directives, SECNAVINST, and OPNAVINST have been rescinded.
- Organize and facilitate a series of 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. This will occur quarterly as part of policy.
- Continue to foster and develop the Navy M&S Standards Process that draws M&S experts from the acquisition, training, operational communities, and industry.

	FY 02	FY 03	FY 04	FY 05
M&S Quality Assurance Program	941	756	705	825

Continue to implement and manage 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. Continue to review both new and legacy M&S VV&A plans and reports. Develop and maintain the Naval M&S VV&A repository. Establish and implement a VV&A training curriculum for developers and accreditors. Provide annual VV&A assessment to the Chief of Naval Operations (CNO).

FY 2002 ACCOMPLISHMENTS:

- Continued to implement and manage the M&S Quality Assurance development of the VV&A process and guidelines for modeling, simulation, and data.

R-1 Line Item 210

Page 7 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

- Provided technical review on M&S VV&A plans and reports and provided subject matter expertise and advice on how to meet Navy policy requirements within existing fiscal and programmatic constraints.
- Developed and implemented an initial version of a web-based VV&A Handbook aimed at supporting program managers across the Navy.
- Established and implemented a VV&A training curriculum for developers and accreditors. Provided annual VV&A assessment to the CNO.

FY 2003 PLANS:

- Develop the VV&A Architecture within the VV&A Handbook.
- Develop and staff for signature the draft SECNAVINST 5200.40X update for VV&A.
- Develop a Department of Navy (DoN) M&S VV&A Annual Assessment Report.
- Develop an initial version of a Navy VV&A Documentation Tool (Turbo Tool).
- Develop training/education modules for accreditors and verification and validation (V&V) practitioners.

FY 2004 PLANS:

- Develop the Details of Architecture Implementation within the VV&A Handbook.
- Develop a prototype cost model for estimating the V&V costs.
- Tailor VV&A awareness training for Program Managers.
- Research and identify formal statistical methods that could be used, or are used, to validate M&S to establish credibility beyond the real world boundaries.
- Research and provide M&S acquisition and development guidance.

FY 2005 PLANS:

- Develop Case Studies within the VV&A Handbook.
- Incorporate information developed for training/education into the VV&A Handbook.
- Coordinate with DoD and Services to identify new data entry fields for VV&A common to all Modeling and Simulation Resource Repositories.
- Coordinate with the NMSIS effort to update VV&A data entry fields and Beta test new data entry fields as required.
- Research and develop methodology for evaluating commercial off the shelf (COTS) tools used to develop valid M&S.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

	FY 02	FY 03	FY 04	FY 05
Simulation Experiments	3,670	2,950	2,747	3,217

Supports Fleet exercises and experiments through the application of distributed simulation to a wide variety of operational, research and development, training, test and evaluation exercises. Develop and integrate appropriate models and simulations into the Fleet Battle Experiments (FBE). Develop a series of simulation efforts to test and evolve the standards for models, interfaces, data, and tools necessary to enable the seamless access and use of operationally relevant Modeling and Simulation (M&S) to support the range of Navy training, warfare assessments and acquisition requirements.

FY 2002 ACCOMPLISHMENTS:

- Provided Navy share of Services' contribution to maintenance of the simulation protocol needed to use Joint Training Confederation simulations in Joint Task Force Exercises.
- Ensured simulation of Naval forces and supported Navy participation in Joint exercises; supported Ulchi Focus Lens, Synthetic Theater of War, and United Endeavor.
- Identified initial suite of existing M&S tools to offer near term relevance and application to the goals of the Maritime Battle Center (MBC) and the ongoing evaluation of systems and technologies in reoccurring FBE.
- Continued development of a Virtual Missile Range to support Fleet training needs.
- Continued development of the Maritime Virtual Environmental Data Specification (MARVEDS) to provide standards that represent the natural environment. This type of standard for simulation environments is critical to enabling Simulation Based Acquisition (SBA).
- Participated in the Office of Secretary of Defense (OSD) effort to develop a definition, functional description, and implementation plan for simulation-based acquisition.
- Provided core support in the development of a Probability of Raid Annihilation (PRA) Federation for use in surface ship combat system test and evaluation.

FY 2003 PLANS:

- Review metrics required to understand the benefits of modeling and simulation in the training environment as used during the Inter-Deployment Training Cycle (IDTC) for intermediate and advanced phase training.
- Participate in all aspects of planning and conducting the synthetic portion of Joint training events, as directed by Commander Second Fleet (COMSECONDFLT).

R-1 Line Item 210

Page 9 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

- Research and define Fleet training requirements (the TYCOMs), delivery (the schoolhouses), and execution (Number Fleet and Carrier Groups) to increase the efficiency and effectiveness of intermediate phase training with the use of M&S.
- The fleet battle experimentation process will provide insight to future Navy efforts, organizations and technologies required to carry the Navy into the end of this decade and the next. These efforts will represent a synergetic Modeling and Simulation approach that will benefit Battle Fleet Tactical Training (BFTT), Virtual Training Range, FBE-J and Millennium Challenge (MC02).
- Focus on development of standardized M&S capabilities, including the PRA simulation testbed, PRA Federation Object Model, and improved modeling of threats and the natural environment. These activities will foster and facilitate the development of common capabilities, services, and simulation components that can be re-used across ship classes and Program Executive Offices (PEOs).
- MARVEDS continues as an effort in developing and promulgating standards for representing the natural environment for distributed simulations. Standards include data representations, grids structures for providing data at the appropriate spatial resolutions, serving practices for delivering data at intervals that account for the natural dynamism of the environment and best practices for developing a common understanding of the data (effects models). Focus in FY 03 will be on the Synthetic Environment Data Representation and Interchange Specification (SEDRUS) Naval environmental standards as being submitted to the International Standards Organization (ISO).
- The Virtual Missile Range (VMR) is comprised of "at sea" operational ships detecting realistic, synthetically generated targets, as real threats, and "firing" virtual missiles housed in weapons laboratories. The initial VMR capability will have a virtual TRACKEXs for the Evolved SeaSparrow Missile (ESSM) system with complete virtual missile engagements with the North Atlantic Treaty Organization (NATO) SeaSparrow Missile System (NSSMS).

FY 2004 PLANS:

- Continue to define Fleet training initiatives and M&S enhancements.
- Perform FBE-K using a synergetic Modeling and Simulation approach.
- Continue to develop the PRA Simulation Testbed demonstrations.
- Define the Landing Platform Dock (LPD 17) Amphibious Ship Use Case Environment Concept Model.
- Continue to develop PRA Federation Object Model.
- Forward deployed surface ships are exploring the Virtual at Sea Training Deployable Prototype (VAST DP) to exercise their Naval Surface Fire Support (NSFS) missions. Inclusion of tactical aircraft (TacAir) in the VAST training system completes the combined arms team that trains/fights together. A Virtual at Sea Training - Aviation Component (VAST-AC) allows USN/USMC TacAir to participate in not only their own

R-1 Line Item 210

Page 10 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

mission specific training but allow participation in amphibious or urban operations training by providing close air support (CAS) services (against synthetic targets/synthetic environment).

- MARVEDS will focus on the standard environmental data as distributed to multiple PEOs.
- The Virtual Missile Range (VMR) will expand its capability to include the NATO SeaSparrow Missile System and upgraded threats.

FY 2005 PLANS:

- Continue to define Fleet training initiatives and M&S enhancements
- Perform FBE-L and the Olympic Challenge series of Joint experimentations using a synergetic M&S approach.
- Complete a VAST range system that provides the capability to conduct training in a virtual environment that would normally require a training range. VAST will also provide required training that would otherwise be cost or schedule prohibitive.
- Document the elements of the maritime virtual environment and effects models that can use it effectively to enable reuse in Naval simulations - best practices where standards are not yet feasible
- VMR will continue to upgrade its virtual threat capabilities.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:

PE 0603235N (Common Picture Advanced Technology)

NON-NAVY RELATED RDT&E:

Not applicable

D. ACQUISITION STRATEGY: Not applicable

R-1 Line Item 210

Page 11 of 14

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2810

Project Title: Congressional
Plus-ups

Congressional Plus-Ups:

R2810	FY 02	FY 03
Enhanced M&S Initiatives	4,734	2,050

The Enhanced M&S Initiatives will: 1) Support the development and enhancement of technologies that support fleet training, distributed simulation and production engineering. 2) Provide the Naval Tool Interoperability and Risk Assessment (NTIRA) tool-kit, to enhance Maritime Battle Center Joint Semi-Automated Forces (MBDJSAF); 3) Demonstrate the capability to test Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (CR4ISR) application in a multi-ship environment at sea using existing Systems Integration Environment (SIE). 4) Enhance production engineering simulation capabilities with the Virtual Shipboard and Lab Facilitator (VSLF).

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Number: R2222

Project Title: Modeling and Simulation

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY-03 Cost	FY-03 Award Date	FY-04 Cost	FY-04 Award Date	FY-05 Cost	FY-05 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Navy M&S Info Sys Development	Various	Various		1285	TBD	1197	TBD	1402	TBD	Cont.	Cont.	Cont.
Quality Assurance	Various	Various		756	TBD	705	TBD	825	TBD	Cont.	Cont.	Cont.
Subtotal Product Development				2041		1902		2227		Cont.	Cont.	Cont.
M&S Services	Various	Various		1286	TBD	1198	TBD	1402	TBD	Cont.	Cont.	Cont.
Subtotal Support				1286		1198	TBD	1402		Cont.	Cont.	Cont.
Simulation Experiments	Various	Various		2950	TBD	2747		3217		Cont.	Cont.	Cont.
Subtotal T&E				2950		2747		3217		Cont.	Cont.	Cont.
Engineering Studies/Analyses	Various	Various		1285	TBD	1197	TBD	1402	TBD	Cont.	Cont.	Cont.
Program Management												

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0308601N

Project Number: R2222

PROGRAM ELEMENT TITLE: Modeling and Simulation Support

Project Title: Modeling and Simulation

Subtotal Management				1285		1197		1402		Cont	Cont.	Cont.
Total Cost				7562		7044		8248		Cont	Cont.	Cont.

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EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																
RDT&E, N / BA-7				0308601N Naval Modeling and Simulation												R2222 Naval Modeling and Simulation																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering Studies and Analysis					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Products and Services					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
M&S Quality Assurance Program					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Simulation Experiments					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

R-1 SHOPPING LIST - Item No. 210

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

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0702207N Depot Maintenance (Non-IF)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	15.938	6.947	9.073					
E3030 F-18 SLAP	5.593	1.941						
H2451 P-3 SLAP	9.651	5.006	9.073					
W2454 AN/ARC-210-RT-1794(C)	0.694							
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The F/A-18 Service Life Assessment Program (SLAP) will assess 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) 2020. 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 the following structural 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 will also be assessed to determine the life limit on landings for all four models of types for aircraft lot 8 and above aircraft. Currently the aircraft structure is limited to 8300 landings. The goal of the SLAP program will be to identify critical structure to allow total landings to be increased to 14,500. This increase in total landings would allow the F/A-18 A/B/C/D to meet OPNAV Tactical Aircraft inventory requirements through fiscal year (FY) 2020. The Service Life Assessment Program (SLAP) on the P-3 to include all P-3 derivatives (H2451.) 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. The AN/ARC-210-RT-1794C (W2454) provided for the development of radio software modifications required for upgrades to the evolving standards.</p>								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702207N Depot Maintenance (Non-IF)			PROJECT NUMBER AND NAME H2451 P-3 SLAP			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	9.651	5.006	9.073					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Current P-3C aircraft fatigue life estimates (from 20,000 to 24,000 flight hours) are based on analysis alone. The P-3 Service Life Assessment Program (SLAP) will perform a full scale fatigue test on a P-3 test article in order to more accurately determine the aircraft fatigue life. After completion of the fatigue test, a destructive test will compare pre-test and post-test analyses. SLAP will identify specific components that require inspection, repair, or replacement during Specific Structural Inspections (SSI) in order to extend the aircraft model's service life beyond its original fatigue life. NRE for fatigue limiting structures will be performed under SLAP to redesign these identified components. This SLAP effort was previously budgeted under APN-5 (BLI 053800) funding within OSIP 02-99.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE			PROJECT NUMBER AND NAME E3030 F/A-18 Service Life Assessment Program (SLAP)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	5.593	1.941						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

F/A-18 Service Life Assessment Program (SLAP) will assess the structural condition of the F/A-18A/B/C/D airframe in order to determine required modifications to extend the aircraft designed service life. The Resource Sponsor (N78) has indicated an urgent need to assess the structural condition of the F/A-18 fleet to determine criteria for service life extensions to support OPNAV Tactical Aircraft inventory requirements through fiscal year (FY) 2020. There are three F/A-18A/B/C/D airframe life limits that need to be addressed to support N78's requirement. The first is to restore Wing Root Fatigue Life Expended (WRFLE) on Lot-17 and below aircraft restricted to 78% of their intended life. This has been answered with the Center Barrel Replacement Plus (CBR+) program which restores WRFLE to 1.0 on the affected aircraft. The CBR+ structural components are the baseline for addressing the other two issues needing SLAP: extending "Total Landings" from 8,300 to 14,500 and extending "Catapults and Arrestments" from 2,000 to 2,700. Results from this assessment will ascertain what actions must be taken to supplement the CBR+ baseline modification for safely operating each airframe at the targeted service life extension to allow the F/A-18A/B/C/D to meet OPNAV Tactical Aircraft inventory requirements through fiscal year (FY) 2020. Over 50 F/A-18C aircraft are currently projected to be carrier restricted by FY 2005 unless SLAP is completed and recommended changes are incorporated. A Service Life Extension Program (SLEP) under OSIP 11-99 has been budgeted to implement the recommended changes determined by SLAP.

R-1 SHOPPING LIST - Item No. 211

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 13)

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME E3030 F/A-18 Service Life Assessment Program (SLAP)

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Critical Structures Analysis	5.593	1.941		
RDT&E Articles Quantity				

Continue to conduct analysis of aircraft structurers and complete Cat/Trap analysis and technical support.

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

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

R-1 SHOPPING LIST - Item No. 211

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003																																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE	PROJECT NUMBER AND NAME E3030 F/A-18 Service Life Assessment Program (SLAP)																																							
<p>C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Funding:</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">5.919</td> <td style="text-align: right;">1.989</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">5.593</td> <td style="text-align: right;">1.941</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.326</td> <td style="text-align: right; border-top: 1px solid black;">-0.048</td> </tr> <tr> <td colspan="3" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 40px;">Congressional program reductions</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional undistributed reductions</td> <td></td> <td style="text-align: right;">-0.012</td> </tr> <tr> <td style="padding-left: 40px;">Congressional rescissions</td> <td style="text-align: right;">-0.013</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">SBIR/STTR Transfer</td> <td style="text-align: right;">-0.178</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Economic Assumptions</td> <td style="text-align: right;">-0.016</td> <td style="text-align: right;">-0.036</td> </tr> <tr> <td style="padding-left: 40px;">Reprogrammings</td> <td style="text-align: right;">-0.119</td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Congressional increases</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">-0.326</td> <td style="text-align: right; border-top: 1px solid black;">-0.048</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule: Not applicable.</p> <p style="margin-top: 20px;">Technical: Not applicable.</p>			Funding:	FY 2002	FY 2003	Previous President's Budget:	5.919	1.989	Current BES/President's Budget	5.593	1.941	Total Adjustments	-0.326	-0.048	Summary of Adjustments			Congressional program reductions			Congressional undistributed reductions		-0.012	Congressional rescissions	-0.013		SBIR/STTR Transfer	-0.178		Economic Assumptions	-0.016	-0.036	Reprogrammings	-0.119		Congressional increases			Subtotal	-0.326	-0.048
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R-1 SHOPPING LIST - Item No. 211

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0702207N DEPOT MAINTENANCE				PROJECT NUMBER AND NAME E3030 F/A-18 Service Life Assessment Program (SLAP)				
D. OTHER PROGRAM FUNDING SUMMARY:											
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
APN-5 P.E. 0204136N F/A-18 Squadrons OSIP (11-99) Service Life Management Program	14,130	55,447	30,979	103,480	80,822	81,878	69,923	61,050	526,458	1,024,167	
E. ACQUISITION STRATEGY:											
<p>The SLAP program employs sole source contracts with Boeing, the aircraft prime manufacture and concurrent organic efforts conducted by both NADEP North Island and NAWCAD, Patuxent River. SLAP consists of structural analyses of the main landing gear, arresting hook, and catapult structures. These analyses will provide for the development of aircraft rework necessary to extend total aircraft landing from 8,300 to 14,000 and catapults and arrestments from 2,000 to 2,700. Engineering Charge 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. 211

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0702207N Depot Maintenance (Non-IF)	PROJECT NUMBER AND NAME H2451 P-3 SLAP

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.651	5.006	9.073	
RDT&E Articles Quantity				

Fatigue testing, engineering, quality assurance, cost/schedule status reports, NAWC field support and contract support services. Test Rig Teardown, Test Article Teardown, Fatigue Life Expended Rebaselining and Structural Data Recording Set (SDRS) Tracking Algorithm.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0702207N Depot Maintenance (Non-IF)	H2451 P-3 SLAP

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	6.794	5.130	2.896	0.000
Current BES/President's Budget	9.651	5.006	9.073	0.000
Total Adjustments	2.857	-0.124	6.177	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.030		
Congressional rescissions	-0.014			
SBIR/STTR Transfer	-0.204			
Economic Assumptions	-0.024	-0.094	-0.213	
Reprogrammings	3.099			
Other Navy/OSD Adjustments			6.390	
Congressional increases				
Subtotal	2.857	-0.124	6.177	0.000

(U) Schedule:

Schedule changed to add the following items: Landing gear test complete 2Q/02; Complete Full Scale Fatigue Test (FSFT) 1Q/03.

The following milestones were previously reported incorrectly: Test Article Teardown initiation 2Q/03; Commence Post Test Analysis 3Q/03; Initiate Fatigue Life Expended Rebaseline 3Q/03; complete SDRS Tracking Algorithm 1Q/04.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 211

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0702207N Depot Maintenance (Non-IF)	PROJECT NUMBER AND NAME H2451 P-3 SLAP
-------------------------------------------------------------	------------------------------------------------------------------------	-------------------------------------------

(U) D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										

(U) E. ACQUISITION STRATEGY:

SLAP was a full and open competition for a fatigue article test. The contract is a cost plus incentive fee (CPIF), therefore providing an incentive to the contractor to effectively manage program cost and schedule. Contract award was March 1999. SLAP supports the Secretary of the Navy's Maritime Patrol Aircraft Ten Year Plan.

R-1 SHOPPING LIST - Item No. 211

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0702207N Depot Maintenance (Non-IF)				PROJECT NUMBER AND NAME H2451 P-3 SLAP					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPIF	LMAS, GA	70.100	4.344	01/03	8.481	01/04				82.925	82.925
Subtotal Product Development			70.100	4.344		8.481		0.000			82.925	
Remarks:												
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 211

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0702207N Depot Maintenance (Non-IF)			PROJECT NUMBER AND NAME H2451 P-3 SLAP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Program Management Support	C/CPIF	Various	2.147	0.192	12/02	0.292	12/03				2.631	2.631
Government Engineering Support	WX	NAWCAD, Pax River, MD	4.538	0.470	12/02	0.300	12/03				5.308	
Subtotal Management			6.685	0.662		0.592		0.000			7.939	
Remarks:												
Total Cost			76.785	5.006		9.073		0.000			90.864	
Remarks:												

R-1 SHOPPING LIST - Item No. 211

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

COST: (Dollars in Thousands)

PROJECT NUMBER/TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R1050 Manufacturing Technology	67,925	68,928	54,593	56,810	58,055	58,258	59,494	60,764
R2674 Manufacturing Technology	2,401	4,392						
Total	70,326	73,320	54,593	56,810	58,055	58,258	59,494	60,764

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, 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. 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 program 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 program is aimed at achieving affordability in the acquisition of weapons systems by inserting manufacturing process solutions early into the design phase to reduce lifecycle costs, improve schedules and ensure quality.

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Submission:	72,459	70,631	71,732	73,870
Adjustments from FY 2003 President's Budget:				
Congressional Plus-Ups		4,500		
Cong. Rescissions/Adjustments/Undist.Reductions	-350	-859		
SBIR Adjustment	-1,783			
Inflation Adjustment		-952	-1,261	-1,225
NWCF Rate Adjustment			-11	-4
Efficiencies at ONR/NWCF Activities			-1,135	-1,161
Program Adjustment			-14,732	-14,670

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

FY 2004/2005 President's Budget Submission:	70,326	73,320	54,593	56,810
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PROGRAM CHANGE SUMMARY EXPLANATION:

Schedule: Not applicable
Technical: Not applicable

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing Technology

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
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R1050 Manufacturing Technology

	67,925	68,928	54,593	56,810	58,055	58,258	59,494	60,764
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MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Manufacturing Technology (MANTECH) Project is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. The MANTECH project, 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 project aims to produce high-quality weapon systems with shorter lead times and reduced acquisition costs. 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 achieving affordability in the acquisition of weapons systems by inserting manufacturing process solutions early into the design phase to reduce lifecycle costs, improve schedules and ensure quality.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY 05
Composites Processing and Fabrication	6,000	6,000	6,000	6,000

Composites Processing and Fabrication: The primary technical goal of the Composites Processing and Fabrication activity is to maximize weapon system effectiveness through the increased utilization of composite materials and structures by reducing acquisition as well as life cycle costs, improving reliability and demonstrating performance improvements. This will be achieved through the development and maturation of affordable, robust manufacturing and assembly processes for composite structures.

FY 2002 ACCOMPLISHMENTS:

- Initiated: Manufacturing Technology for Silicon Carbide Flaps and Seals; Propulsion Shaft Composite Surface Treatment; Advanced Amphibious Assault Vehicle (AAAV) Troop Ramp.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing Technology

- Continued: Composite Pressure Vessel Fabrication, Composite Gantry/Trolley Type Structures; Automation of Z-Fiber for Complex Shape; Teaching Factory Outreach; Rapid Responses.

FY 2003 PLANS:

- Continue: Composite Pressure Vessel Fabrication, Composite Gantry/Trolley Type Structures; Automation of Z-Fiber for Complex Shape; Teaching Factory Outreach; Rapid Responses; Manufacturing Technology for Silicon Carbide Flaps and Seals; Propulsion Shaft Composite Surface Treatment.

FY 2004 PLANS:

The Navy is executing a new Naval Product Investment Strategy focusing on a few major ACAT I programs. The acquisition commands are in the process of roadmapping to those ACAT programs. Final decisions on critical manufacturing issues will not be made until mid-FY03.

- Continue: Teaching Factory Outreach; Rapid Responses; Manufacturing Technology for Silicon Carbide Flaps and Seals; Propulsion Shaft Composite Surface Treatment.
- Complete: Composite Pressure Vessel Fabrication, Composite Gantry/Trolley Type Structures; Automation of Z-Fiber for Complex Shape; AAV Troop Ramp.

FY 2005 PLANS:

- Initiate: New Manufacturing Processes supporting Unmanned Combat Air Vehicle (UCAV)-Navy, F/A-18, the new EA-18G.
- Continue: Teaching Factory Outreach; Rapid Responses.
- Complete: Manufacturing Technology for Silicon Carbide Flaps and Seals; Propulsion Shaft Composite Surface Treatment.

	FY 02	FY 03	FY 04	FY 05
Metals Processing and Fabrication	19,000	19,000	19,000	19,000

Metals Processing and Fabrication: 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. Thrust area projects 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.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

FY 2002 ACCOMPLISHMENTS:

- Initiated: High Strength Marine Grade Fasteners Extended Development; Advanced Thermal Battery Production; Distortion and Accuracy Control.
- Continued: Aluminum Alloy 2519 Material Evaluation for AAV; Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer; Low Cost Fabrication of AAV Components; AAV Distortion; Enhanced Processing for High Strength Steel Castings and Forgings for Naval Components (CVN); Lead Magnesium Niobate Electrorestrictive Transduction Material Manufacturing; Rhenium Fabrication Processing for Standard Missile; Optimized Flow formed Steel Cartridge Casings; Propulsor Affordability Initiative; Automated Paint Application Containment and Treatment System Process Development; Titanium Howitzer; Mechanized Welding; Hybrid Welding of Ship Structures; Titanium Welding; Knowledge Based Ultrasonic Testing of Welds; Weld Fume Manufacturing.
- Completed: High Temperature Lightweight Radial Manifold; Verification of Advanced Welding Consumables; Thin Wall Superalloy Structural Casting Technology; Titanium Metal Matrix Fabrication Technology.

FY 2003 PLANS:

- Continue: High Strength Marine Grade Fasteners Extended Development; Advanced Thermal Battery Production; Distortion and Accuracy Control; Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer; Propulsor Affordability Initiative; Automated Paint Application Containment and Treatment System Process Development.
- Complete: Mechanized Welding; Hybrid Welding of Ship Structures; Titanium Welding; Low Cost Fabrication of AAV Components; AAV Distortion; Knowledge Based Ultrasonic Testing of Welds; Weld Fume Manufacturing; Aluminum Alloy 2519 Material Evaluation for AAV; Enhanced Processing for High Strength Steel Castings and Forgings for Naval Components (CVN); Lead Magnesium Niobate Electrorestrictive Transduction Material Manufacturing; Rhenium Fabrication Processing for Standard Missile; Titanium Howitzer.

FY 2004 PLANS:

The Navy is executing a new Naval Product Investment Strategy focusing on a few major ACAT I programs. The acquisition commands are in the process of roadmapping to those ACAT programs. Final decisions on critical manufacturing issues will not be made until mid-FY03.

- Initiate: New manufacturing process improvements for the new attack submarine, DD-X, CVN, and LPD-17.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

- Continue: Propulsor Affordability Initiative; Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer; High Strength Marine Grade Fasteners Extended Development; Advanced Thermal Battery Production; Distortion and Accuracy Control.
- Complete: Automated Paint Application Containment and Treatment System Process Development.

FY 2005 PLANS:

- Continue: Manufacturing process improvements for the new attack submarine, DD-X, CVN, and LPD-17.
- Complete: Propulsor Affordability Initiative; and Accuracy Control; Single-Melt Process for Reduced-Cost Aluminum Alloys for LW-155 Howitzer; High Strength Marine Grade Fasteners Extended Development; Advanced Thermal Battery Production; Distortion and Accuracy Control.

	FY 02	FY 03	FY 04	FY 05
Electronics Processing and Fabrication	10,500	10,000	10,000	10,000

Electronics Processing and Fabrication: 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 to repair and maintenance facilities such as depots and logistics centers, with a strong emphasis on process maturation.

FY 2002 ACCOMPLISHMENTS:

- Initiated: LINK-16 Low Cost Terminal; Monolithic Miniature Integrated Circuit (MMIC) Flip Chip Attach Production Processing.
- Continued: Teaching Factory Outreach, Rapid Response; Infrared Focal Plane Array Manufacturing; Affordable Diode Array Manufacturing; Fiber Optic Electrical Splice.
- Completed: Affordable Microwave Packaging System; Electronics Miniaturization for Missiles; Manufacturing Automation of Monolithic Ring Laser Gyros; Remote Source Lighting Femtosecond Laser; Torpedo Communications Tether; Fiber Optic Interconnect Technology; Sapphire Dome Strengthening.

FY 2003 PLANS:

- Continue: LINK-16 Low Cost Terminal; MMIC Flip Chip Attach Production Processing; Teaching Factory Outreach, Rapid Response; Infrared Focal Plane Array Manufacturing.
- Complete: Affordable Diode Array Manufacturing; Fiber Optic Electrical Splice.

FY 2004 PLANS:

R-1 Line Item 212
Page 6 of 12

UNCLASSIFIED

UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

The Navy is executing a new Naval Product Investment Strategy focusing on a few major ACAT I programs. The acquisition commands are in the process of roadmapping to those ACAT programs. Final decisions on critical manufacturing issues will not be made until mid-FY03.

- Initiate: New efforts in Wide Band Gap Materials that support ship platforms.
- Continue: LINK-16 Low Cost Terminal; MMIC Flip Chip Attach Production Processing; Teaching Factory Outreach, Rapid Response; Infrared Focal Plane Array Manufacturing.

FY 2005 PLANS:

- Initiate: Manufacturing Process Improvement work for the new EA-18G.
- Continue: LINK-16 Low Cost Terminal; MMIC Flip Chip Attach Production Processing; Teaching Factory Outreach, Rapid Response; Wide Band Gap Materials project.
- Complete: Infrared Focal Plane Array Manufacturing.

	FY 02	FY 03	FY 04	FY 05
Advanced Manufacturing Enterprise	5,500	5,500	5,500	5,500

Advanced Processing and Fabrication (AME): AME 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; 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. AME efforts create improvements to cost and cycle time for weapon system development, production and repair.

FY 2002 ACCOMPLISHMENTS:

- Continued: Best Manufacturing Practices Surveys; Port Security Homeland Security efforts; Shipbuilding and Simulation Based Design; Maritime Environmental Information Center; Ship Propeller Thrust and Torque Measurement; Fiber-Bragg Optical Damage Control System; Continuous Improvement of Dry-Docking Management; Adaptation of Commercial Structural Criteria to Military Needs; Development of Erection Beam Fabrication Tools; Occupational Safety and Health Administration (OSHA) Compliance Management System; Development of High Strength Corrosion Resistant Aluminum Alloys for Maritime Applications; Quality Assurance of Reliability Data in the 3-M Database of the U.S. Navy; Ships Works Robotic Laboratory; Light Distance and Ranging Technology for Shipyards; Modeling Residual Stress in Steel Plates.
- Completed: Reduced Copper, Long Life Anti-Fouling Coatings through Microencapsulation; Waterjet, Inlet, Nozzle and Hull Integration; Limitation of Reduced Crew Performance in Various Sea States; Shipboard Learning of Diesel Engine Operating Characteristics; Active Control of Planing Hull Motions; Development of

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

Erection Beam Fabrication Tools; Simulation Based Workload Planning and Shipyard Scheduling; Load and Resistance Factor Design Rules as Performance-Based Design Criteria for Surface Ships.

FY 2003 PLANS:

- Continue: Best Manufacturing Practices Surveys; Port Security Homeland Security efforts; Shipbuilding and Simulation Based Design; OSHA Compliance Management System; Development of High Strength Corrosion Resistant Aluminum Alloys for Maritime Applications; Continuous Improvement for Drydock Management.
- Complete: Maritime Environmental Information Center; Ship Propeller Thrust and Torque Measurement; Fiber-Bragg Optical Damage Control System; Quality Assurance of Reliability Data in the 3-M Database of the U.S. Navy; Ships Works Robotic Laboratory; Light Distance and Ranging Technology for Shipyards; Modeling Residual Stress in Steel Plates.

FY 2004 PLANS:

The Navy is executing a new Naval Product Investment Strategy focusing on a few major ACAT I programs. The acquisition commands are in the process of roadmapping to those ACAT programs. Final decisions on critical manufacturing issues will not be made until mid-FY03.

- Continue: Best Manufacturing Practices Surveys; Port Security Homeland Security efforts; Shipbuilding and Simulation Based Design.
- Complete: OSHA Compliance Management System; Development of High Strength Corrosion Resistant Aluminum Alloys for Maritime Applications; Continuous Improvement for Drydock Management.

FY 2005 PLANS:

- Initiate: Manufacturing technology process changes for the DD-X, CVX, LPD-17.
- Continue: Best Manufacturing Practices Surveys; Port Security Homeland Security efforts; Shipbuilding and Simulation Based Design

	FY 02	FY 03	FY 04	FY 05
Other (Repair Tech, Program Initiatives)	26,925	28,428	14,093	16,310

The "Other" activity includes repair technology and those manufacturing efforts that are competed and executed by the Navy's Centers of Excellence, including DD-X, LPD-17, Unmanned Combat Air Vehicle-Navy, Shipbuilding Initiative, Wide Band Gap Initiatives, and technical engineering support.

UNCLASSIFIED

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

FY 2002 ACCOMPLISHMENTS:

- Initiated: Navy International Cooperative Program for Shipbuilding Process Simulation; Wide Band Gap Materials Technology project; Composites Affordability Initiative Phase II - Integrated and Bonded Structures Validation; Alternative Manufacture of Energetic Materials; Vertical Launch System (VLS) Tube Repair; Hazardous Material (HAZMAT) Analyzers for Rapid On-Site Analysis; Composites Manufacturing Technology for Low Cost Submarine Cover Plates; Overspray Elimination through Development of High Transfer Efficiency Painting Technologies; Cluster Based Manufacturing Through Integrated Product and Process Simulation.
- Continued: Pathways for Continuous Improvement, Supply Chain Integration Microelectromechanical Systems for Inertial Measurement Units; Dimensional and Accuracy Control; Collarless Construction; Large Marine Composite-to-Steel Adhesive Joints; Computer Numerically Controlled (CNC) Thermal Plate Forming; Low Cost, Improved Quality CL-20 Material, Co Layered Propellant Manufacturing; Low Cost, Reliable Packaging and Integration of Miniaturized Explosive Components; Amphibious Assault Vehicle (AAV) Enhanced Applique Armor Kit Product Improvement; Evaluation and Repair of Lightweight Armor Vehicle (LAV) Armor; Heavy Equipment Repair; Steering Block Repair; Surface Preparation Improvement; Smart Sensors/Actuators; Technical Engineering Support.
- Completed: Aircraft Carrier Arresting Gear Poured Cable End Sockets; ND-YAG Catapult Trough Covers; Effective Coatings Removal from Ships.

FY 2003 PLANS:

- Continue: Navy International Cooperative Program for Shipbuilding Process Simulation; Wide Band Gap Materials Technology project; Composites Affordability Initiative Phase II - Integrated and Bonded Structures Validation; Pathways for Continuous Improvement, Supply Chain Integration Microelectromechanical Systems for Inertial Measurement Units; Technical Engineering Support.
- Complete: Collarless Construction; CNC Thermal Plate Forming; AAV Enhanced Applique Armor Kit Product Improvement; Evaluation and Repair of LAV Armor; Heavy Equipment Repair; Steering Block Repair; Surface Preparation Improvement; Smart Sensors/Actuators; Low Cost, Reliable Packaging and Integration of Miniaturized Explosive Components; Low Cost, Improved Quality CL-20 Material, Co Layered Propellant Manufacturing; Dimensional and Accuracy Control; Large Marine Composite-to-Steel Adhesive Joints.

FY 2004 PLANS:

The Navy is executing a new Naval Product Investment Strategy focusing on a few major ACAT I programs. The acquisition commands are in the process of roadmapping to those ACAT programs. Final decisions on critical manufacturing issues will not be made until mid-FY03.

- Initiate: Manufacturing Process Improvements supporting DD-X, CVN-X, LPD-17

UNCLASSIFIED

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

- Continue: Composites Affordability Initiative Phase II - Integrated and Bonded Structures Validation; Pathways for Continuous Improvement, Supply Chain Integration; Microelectromechanical Systems for Inertial Measurement Units; Technical Engineering Support.

FY 2005 PLANS:

- Continue: Composites Affordability Initiative Phase II - Integrated and Bonded Structures Validation; Pathways for Continuous Improvement, Supply Chain Integration; Manufacturing Process Improvements supporting DD-X, CVN-X, LPD-17; Technical Engineering Support.
- Complete: Microelectromechanical Systems for Inertial Measurement Units.

C. OTHER PROGRAM FUNDING SUMMARY:

NAVY RELATED RDT&E:

Major Acquisition programs, such as: DD-X, LPD-17, V-22, AAV, F/A-18, and CVN.

NON-NAVY RELATED RDT&E:

PE 0708011F Industrial Preparedness
PE 0708045A End Item Industrial Preparedness Activities
PE 0708011A Industrial Preparedness

D. ACQUISITION STRATEGY: Not applicable.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R2674
Project Title: Manufacturing
Technology

Congressional Plus-Ups:

R2674	FY 02	FY 03
Manufacturing Technology	2,401	4,392

FY 2002: Funding was distributed to five Centers of Excellence to complete projects in the FY03 portfolio.
FY 2003: Funding will be used to support transformation topics in coordination with ASN (RDA), and initiate a pilot program in manufacturing to support the Naval Research Enterprise.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0708011N
PROGRAM ELEMENT TITLE: Industrial Preparedness

Project Number: R1050
Project Title: Manufacturing
Technology

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
a. Process Development	62,425	63,428	50,293	52,310
b. Program Management Support	5,500	5,500	4,300	4,500
Total	67,925	68,928	54,593	56,810

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-7					R-1 ITEM NOMENCLATURE NAT'L SHIPBLDG RES PROG ADV SHIPBLDG ENTERPRISE/0708730N			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	28.356	12.046	10.068	0.000	0.000	0.000	0.000	0.000
NSRP/ASE/S2466/S2811	21.632	9.703	10.068	0.000	0.000	0.000	0.000	0.000
Maritime Tech, Ship Design & Sys Develop Init/R9121	6.724	2.343	0.000	0.000	0.000	0.000	0.000	0.000
Defense Emergency Response Funds (DERF) Funds: N/A								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
Project S2466/S2811 (NSRP ASE):								
The mission of the National Shipbuilding Research Program Advanced Shipbuilding Enterprise (NSRP ASE) is to manage and focus national research funding on technologies that will enhance U.S. commercial shipbuilding and ship repair competitiveness and reduce the cost of naval ships, construction, modification and repair.								
Industry has developed a landmark long range Strategic Investment Plan which will guide NSRP ASE 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. The objective is to assist the industry in achieving significant reduction in the cost and time required for both commercial and Navy ship construction, conversion, and repair. The recommended investment portfolio includes major initiatives that tie the strategic vision to proposed industry research through collaborative R&D. The major initiatives include: Shipyard Production Process Technologies, Business Process Technologies, Product Design and Material Technologies, Systems Technologies, Facilities and Tooling. Additionally, several critical success factors were found to cut across all of the major initiatives. These "Crosscut Initiatives" include Education and Training, Technology Transfer, Organizational Change, Environmental Protection and Human Resources.								
The collaboration of major shipyards that lead the program are: General Dynamics Electric Boat Corporation, General Dynamics Bath Iron Works, Northrop Grumman Newport News, Atlantic Marine, Northrop Grumman Ship Systems Ingalls, Halter Marine, Northrop Grumman Ship Systems Avondale, General Dynamics NASSCO, Todd Pacific, Cascade General and Bender Shipbuilding.								
Project R9121 (Maritime Technology, Ship Design and Systems Development Initiative):								
Develop a cooperative research effort to improve the quality of shipyard products, efficiency of shipyard production and introduce advanced ship system designs. Thrust areas for this effort include: 1) Lean/agile manufacturing; 2) Shipyard Production Process Automation; 3) Shipyard Production Process Improvement; 4) Ship Design and Production Simulation and Visualization; 5) Education and Training; 6) Application of Advanced Materials to Ship Design and Manufacturing; 7) Design and Application of Advanced Ship Systems. A team of Navy, University of New Orleans, and Northrop Grumman Ship Systems (Avondale) personnel will prioritize potential research projects supporting these thrust areas and oversee project execution to ensure program goals are being met.								

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE			PROJECT NUMBER AND NAME S2466/S2811/NSRP ASE			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	21.632	9.703	10.068	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project S2466/S2811 (NSRP ASE):

The mission of the National Shipbuilding Research Program Advanced Shipbuilding Enterprise (NSRP ASE) is to manage and focus national research funding on technologies that will enhance U.S. commercial shipbuilding and ship repair competitiveness and reduce the cost of naval ships, construction, modification and repair.

Industry has developed a landmark long range Strategic Investment Plan which will guide NSRP ASE 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. The objective is to assist the industry in achieving significant reduction in the cost and time required for both commercial and Navy ship construction, conversion, and repair. The recommended investment portfolio includes major initiatives that tie the strategic vision to proposed industry research through collaborative R&D. The major initiatives include: Shipyard Production Process Technologies, Business Process Technologies, Product Design and Material Technologies, Systems Technologies, Facilities and Tooling. Additionally, several critical success factors were found to cut across all of the major initiatives. These "Crosscut Initiatives" include Education and Training, Technology Transfer, Organizational Change, Environmental Protection and Human Resources.

The collaboration of major shipyards that lead the program are: General Dynamics Electric Boat Corporation, General Dynamics Bath Iron Works, Northrop Grumman Newport News, Atlantic Marine, Northrop Grumman Ship Systems Ingalls, Halter Marine, Northrop Grumman Ship Systems Avondale, General Dynamics NASSCO, Todd Pacific, Cascade General and Bender Shipbuilding.

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME S2466/S2811/NSRP ASE

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.505			
RDT&E Articles Quantity	N/A			

Complete all remaining technology development projects in the six major initiative areas selected from Research Announcement One (13 projects). Projects since previous President's budget include: World Class Manufacturing Model, Line Heating, Knowledge Based Modular Repair, Advanced Structural Joining, Autogen, Ship Component Factory, Theory of Constraints, World Class Material Standards, ISE-1, Consensus Ergonomics, Stormwater Mock-up, Virtual Resource Center, and Structural Fire Protection. All projects are being performed jointly by the Executive Control Board of the National Shipbuilding Research Program to support current and future Navy shipbuilding programs.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.589	8.758		
RDT&E Articles Quantity	N/A	N/A		

Complete all remaining technology development projects in the six major initiative areas selected from Research Announcement Two and Two Prime (14 projects). Projects since the previous President's budget include: OSHA, SPARS, ISE-2, Five S, Water Blasting, Crosscut, Welding, Laser, Stormwater, Lean Manufacturing, Harvest, LASOX, ESTEP and ISPE. All projects are being performed jointly by the Executive Control Board of the National Shipbuilding Research Program to support current and future Navy shipbuilding programs.

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

Continue utilization of industry-led major initiative teams to perform the execution and annual review of the Strategic Investment Plan, including technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community.

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME S2466/S2811/NSRP ASE

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			9.128	
RDT&E Articles Quantity			N/A	

Initiate technology development projects in the six major initiative areas selected from Research Announcement Three. All projects will be performed jointly by the Executive Control Board (ECB) of the National Shipbuilding Research Program (NSRP) to support current and future Navy shipbuilding programs.

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

Continue transition of projects to shipbuilding programs.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.295	0.295	0.290	
RDT&E Articles Quantity	N/A	N/A		

Operate multi-agency support office to facilitate technology transfer between Government and industry.

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME S2466/S2811/NSRP ASE

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.593			
RDT&E Articles Quantity	N/A			

Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

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

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

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME S2466/S2811/NSRP ASE			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		22.565	9.943	0.000	
Current BES/President's Budget (FY04 President's Controls)		21.632	9.703	10.068	
Total Adjustments		-0.933	-0.240	10.068	
Summary of Adjustments					
SBIR/STTR Transfer		-0.593			
Economic Assumptions		-0.061	-0.056		
Miscellaneous Adjustments		-0.279	-0.184		
Program Extension				10.068	
Subtotal		-0.933	-0.240	10.068	
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							February 2003			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
RDT&E, N/BA-7		0708730N/NSRP ASE			S2466/S2811/NSRP ASE					
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
None.										
E. ACQUISITION STRATEGY:										
R&D projects have been solicited and awarded by an industry collaboration represented by the Executive Control Board (ECB) of the National Shipbuilding Research Program (NSRP). The Navy has entered into an agreement with the industry collaboration using "other transaction" authority pursuant to 10 U.S.C. 2371.										
NOTE: No funding has been received through the Emergency Response Fund, Defense (ERF,D)										

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N/BA-7			0708730N/NSRP ASE			S2466/S2811/NSRP ASE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
												0.000
Technology Development	SS OT*	ECB NSRP**	63.813	9.364	VARIOUS	9.748	VARIOUS					82.925
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
Subtotal Technology Development			63.813	9.364		9.748		0.000		0.000		82.925
Remarks: * Other Transactions IAW 10 USC 2371 ** Executive Control Board of the National Shipbuilding Research Program												
Gov't Support Serv/Other Agencies	MIPR/WR	MARAD	2.533	0.030		0.030						2.593
Support Services Revolving Accts	MIPR/WR	VARIOUS	0.846	0.279		0.260						1.385
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
Subtotal Support			3.379	0.309		0.290		0.000		0.000		3.978
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RD T&E, N/BA-7			0708730N/NSRP ASE			S2466/S2811/NSRP ASE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Technology Development	Reqn*	TRW/Schafer Corp.	0.810	0.000		0.000					0.810	
Technology Development	SS	PSU/APL	0.385	0.000		0.000					0.385	
PM Support	RC	NASSCO	0.070	0.000		0.000					0.070	
NSNET	RC	University of Michigan	0.400	0.000		0.000						
Travel			0.099	0.030		0.030					0.159	
SBIR Assessment			0.593	0.000		0.000					0.593	
Subtotal Management			2.357	0.030		0.030		0.000		0.000	2.417	
Remarks: * Procure under GSA Schedule												
Total Cost			69.549	9.703		10.068		0.000		0.000	89.320	
Remarks:												

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 9 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE			PROJECT NUMBER AND NAME R9121/Maritime Tech, Ship Design & Systems Development Initiative			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	6.724	2.343	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Develop a cooperative research effort to improve the quality of shipyard products, efficiency of shipyard production and introduce advanced ship system designs. Thrust areas for this effort include: 1) Lean/agile manufacturing; 2) Shipyard Production Process Automation; 3) Shipyard Production Process Improvement; 4) Ship Design and Production Simulation and Visualization; 5) Education and Training; 6) Application of Advanced Materials to Ship Design and Manufacturing; 7) Design and Application of Advanced Ship Systems. A team of Navy, University of New Orleans, and Northrop Grumman Ship Systems (Avondale) personnel will prioritize potential research projects supporting these thrust areas and oversee project execution to ensure program goals are being met.

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME R9121/Maritime Tech, Ship Design & Systems Development Initiative

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.544			
RDT&E Articles Quantity	N/A			

Project funding has been received, added to the Gulf Coast Region Maritime Technology Center Cooperative Agreement and research projects have been initiated. Projects currently underway include: Shipboard Applications of Lightweight Ship Structures; Socket Welding of Titanium Grades Using GTAW with Flux Assist; Short Robot Production Runs; Ship Works Robotics Laboratory Vision System; Lean Six Sigma in Shipbuilding; Avondale Manufacturing Process Modeling. All projects are being performed jointly by the University of New Orleans and Northrop Grumman Ship Systems Avondale Operations to support Navy ship programs such as LPD-17.

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

Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.343		
RDT&E Articles Quantity		N/A		

Funds will be provided to the Gulf Coast Region Maritime Technology Center Cooperative Agreement for projects in the following thrust areas: 1) Lean/agile manufacturing; 2) Shipyard Production Process Automation; 3) Shipyard Production Process Improvement; 4) Ship Design and Production Simulation and Visualization; 5) Education and Training; 6) Application of Advanced Materials to Ship Design and Manufacturing; 7) Design and Application of Advanced Ship Systems. A team of Navy, University of New Orleans, and Northrop Grumman Ship Systems (Avondale) personnel will prioritize potential research projects supporting these thrust areas and oversee project execution to ensure program goals are being met.

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7	PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE	PROJECT NUMBER AND NAME R9121/Maritime Tech, Ship Design & Systems Development Initiative			
C. PROGRAM CHANGE SUMMARY:					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		7.000	0.000		
Current BES/President's Budget (FY04 President's Controls)		6.724	2.343		
Total Adjustments		-0.276	2.343		
Summary of Adjustments					
SBIR/STTR Transfer		-0.180			
Economic Assumptions		-0.019			
Miscellaneous Adjustments		-0.077			
Congressional increases			2.343		
Subtotal		-0.276	2.343		
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-7		PROGRAM ELEMENT NUMBER AND NAME 0708730N/NSRP ASE			PROJECT NUMBER AND NAME R9121/Maritime Tech, Ship Design & Systems Development Initiative					
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
None.										
E. ACQUISITION STRATEGY:										
R&D will be executed through the Gulf Coast Region Maritime Technology Center Cooperative Agreement with the University of New Orleans.										
NOTE: No funding has been received through the Emergency Response Fund, Defense (ERF,D)										

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N/BA-7			0708730N/NSRP ASE			R9121/Maritime Tech, Ship Design & Systems Development Initiative						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
Technology Development	CA	University of New Orleans	6.344	2.313							8.657	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Technology Development			6.344	2.313		0.000		0.000		0.000	8.657	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N/BA-7			0708730N/NSRP ASE			R9121/Maritime Tech, Ship Design & Systems Development Initiative						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support			0.170	0.025							0.195	
Travel			0.030	0.005							0.035	
Labor (Research Personnel)											0.000	
SBIR Assessment			0.180								0.180	
Subtotal Management			0.380	0.030		0.000		0.000		0.000	0.410	
Remarks:												
Total Cost			6.724	2.343		0.000		0.000		0.000	9.067	
Remarks:												

R-1 SHOPPING LIST - Item No. 213

UNCLASSIFIED